

Abstracts Book



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Word of Welcome

Dear Colleagues and Friends

The Annual meeting in Vienna is finally here. We have put together a rich academic program for you. I would like to take the opportunity to thank members of the scientific committee and the ESPU board for their guidance and input.

This huge endeavour of bringing together major paediatric urological societies across the world for the meeting would not have been possible without the expert help from our very capable duo, meeting co-ordinator Lale Ak and webmaster Clement Ekstein.

The meeting this year is being conducted in 3 Halls – Hall D, G and K and there is stone course in meeting room -2.31

Hall K will be holding ESPUN meeting on Wednesday and Thursday and ICCS meeting on Friday.

Hall D and Hall G will be holding parallel sessions of the joint societies - ESPU-SPU-AAP/SOU-AAPU-SFU-SIUP on Wednesday, Thursday and Friday. On Saturday ICCS will also join alongwith all the other societies.

Please use the guidebook to navigate your way around the sessions and select the ones you wish to attend in person. The proceedings of the hall D and G are being recorded and you will have a chance to view them later.

This year we don't have the regular Tips and tricks and my worst complication sessions. Instead we have many panel discussions with panellists drawn from different societies and there are additional sessions on selected topics.

We sincerely hope that the academic program will add to your professional development, and you will also enjoy the meeting colleagues from around the world.

Looking forward to meet you in Vienna

Best regards,



Anju Goyal



Marco Castagnetti

and

Co-chairs of the Scientific Committee

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Pediatric Urology Beyond Europe

Parallel Programme on Wednesday 3, September 2025, 12:00 - 15:00

12:00 - 12:20

Severe Hypospadias Discussion in Controversies

Moderator: Marc-David Leclair (France)

Why single stage?

Amilal Bhat (India), 5 minutes

Why 2 stages?

Mohammed Elghoneimy (Egypt), 5 minutes

Long term outcome

Saidanwar Agzamkhodjaev (Uzbekistan), 5 minutes

12:20 - 12:40

Distal Hypospadias Case Discussions (3 cases)

Moderator: Marco Castagnetti (Italy)

Discussants: Zafar Abdullaev (Uzbekistan), Ahmed Sakr (Egypt), Sang Woon Kim (South Korea)

12:40 - 13:30

DSD beyond Europe Panel: Different Perspectives and Challenges

Moderator: Emilio Merlini (Italy)

Discussants: Helena Maria Palma Sircili (Brazil), Haytham Badawy (Egypt), Amilal Bhat (India), Bira Barosso (Brazil)

13:30 - 14:00

Prenatal Hydronephrosis Need for Early Surgery

Moderator: Serdar Tekgül (Turkey)

UPJ obstruction in early infancy

Surgical indications for early pyeloplasty?

Anil Takvani (India), 5 minutes

Role for minimal invasive approach in infants

Mallikarnuja Reddy (India), 5 minutes

Case discussion: How to manage giant hydro at birth?

Anil Takvani (India), 5 minutes

14:00 - 14:30

Obstructive megaureter in the first 3 months

Moderator: Serdar Tekgül (Türkiye)

How you define obstruction in Megaureter?

Jae Min Chung (South Korea), 5 minutes

How to manage?

Tiago Rosito (Brazil), 10 minutes

Case discussion

Ahmed Sakr (Egypt)

14:30 - 15:00

Future of Minimal Invasive Surgery of the Kidney in Children?

Moderator: Alaa El Ghoneimi (France)

The need for the robot in smaller children

Sang Hoon Song (South Korea), 10 minutes

How does robotic assisted surgery influences lap surgery?

MS Ansari (India), 10 minutes

Open discussion, 10 minutes

S01: BASIC RESEARCH 1

Moderators: Magdalena Fossum (SWE), Niklas Pakkasjarvi (FI)

Main Programme on Wednesday 3, September 2025, 12:45 - 13:50

12:45 - 12:49

S01-1 (OP)

★ HISTOLOGICAL AND CONTRACTILE CHARACTERISATION OF BLADDER TISSUE IN PRIMARY EPISPADIAS

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PURPOSE

Primary epispadia(PE) is rare and despite surgical advances often results in urinary incontinence. The morphometric characteristics of the PE bladder are unknown. This study compares bladder histology and biomechanics in PE against classical bladder exstrophy (CBE) and normal paediatric bladders.

MATERIAL AND METHODS

Between 2018 and 2023, bladder muscle strips were collected from patients undergoing surgery for PE (n=17), CBE (n=37; neonates n=9), and control (no bladder dysfunction) conditions (n=15). Histological analysis measured the smooth muscle-to-connective tissue ratio (SM:CTr), where lower ratios indicate greater fibrosis. Bladder tissue compliance was assessed through stress-strain experiments. Statistical significance was determined using Mann-Whitney U tests.

RESULTS

Median SM:CTr was highest in controls (2.21), lowest in newborn CBE (0.20) and similar between older children with CBE (0.63) and PE (0.67). Compliance was lowest in controls (27.75) and similar among newborn CBE (37.10), CBE (41.71), and PE (36.07)(all mN.mm⁻²). Only normal vs. CBE was statistically significant (p=0.022).

The SM:CTr was significantly reduced in PE compared to controls and similar to older children with CBE (p=0.79), suggesting that PE has a degree of fibrosis comparable to CBE beyond the neonatal period. Bladder compliance in PE was also similar to both newborns (p=0.71) and older children with CBE (p=0.56), indicating that passive stretch properties do not significantly differ between the two condition.

CONCLUSIONS

PE exhibits histological impairment and altered passive biomechanics comparable to classical exstrophy. These findings suggest PE has a complex pathophysiology and should be clinically interrogated as rigorously as exstrophy, rather than assuming a higher likelihood of achieving continence.

ALTERED MITOCHONDRIAL ARCHITECTURE DIFFERENTIATES EXSTROPHIC BLADDER SMOOTH MUSCLE CELLS FROM NORMAL BLADDER CELLS

Jason YANG, Alexander HIRSCH, Wayland WU, David HEAP, Catherine ROBEY, Heather DI CARLO, Larissa SHIMODA, John GEARHART and Chad CRIGGER

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PURPOSE

Approximately one-third of exstrophic bladders demonstrate inadequate growth and reduced capacity following surgical closure. To elucidate potential underlying mechanisms, we investigated the mitochondrial architecture and function in smooth muscle cells from exstrophic bladders compared to normal bladders.

MATERIAL AND METHODS

Full-thickness bladder biopsies were collected from 5 classic bladder exstrophy patients and from 5 normal bladder patients undergoing ureteral reimplantation. Mitochondrial morphology was evaluated by staining cells with Mitotracker dye. Fluorescence microscopy images were then captured using Micro-Manager software and analyzed with proprietary software. Moreover, ultrastructural analysis was performed using transmission electron microscopy (TEM) at 80 kV. For protein expression assessment, cell lysates were prepared with Laemmli lysis buffer, and levels of phosphorylated DRP1 (pDRP1) were quantified by western blot.

RESULTS

TEM and fluorescence imaging revealed distinct phenotypic differences in mitochondrial structure between exstrophic and normal bladder samples. Mitotracker fluorescence analysis showed decreasing trends towards shorter median mitochondrial branch lengths in exstrophy cells compared to controls (9.60 vs. 10.45 μm , $p=0.19$) with a more comparable median branch number (2.81 vs. 3.14, $p=0.56$). Western blot analysis indicated a trend towards an elevated pDRP1/DRP1 ratio in exstrophic bladder cells (1.77 vs. 1.07, $p=0.10$).

CONCLUSIONS

Smooth muscle cells from exstrophic bladders exhibit distinct mitochondrial abnormalities, including a trend toward shorter branch lengths, coupled with a trend toward increased mitochondrial fission activity. These findings implicate mitochondrial dysfunction in exstrophic bladders and identify mitochondrial dynamics as a potential target for improving outcomes in this congenital condition. Of note, with over 100 biopsy samples, we anticipate achieving statistical significance by the time of conference as we continue processing additional exstrophy samples.

MYOCARDIN (MYOCD) LOSS-OF-FUNCTION VARIANTS DOWN-REGULATE SMOOTH MUSCLE CELL (SMC) DEVELOPMENT RESULTING IN PRUNE BELLY SYNDROME (PBS)

Nathalia AMADO ¹, Karunya ALBERTS ¹, Nixon RAJ ¹, Alexandria FUSCO ², Jeremy MATHEWS ², Caitlin COCO ², Martinez HILL ², Brandi CANTAREL ² and Linda BAKER ¹

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PURPOSE

In most cases, the cause of PBS is unknown. MYOCD is highly expressed in embryonic detrusor and is a master transcriptional co-activator initiating expression of SMC genes. Recently, human MYOCD mutations were reported with PBS-like phenotypes. We tested our PBS cohort for MYOCD variants and their functional impact.

MATERIAL AND METHODS

With IRB-approval, PBS proband DNA underwent paired-end whole exome sequencing. DNA variants were filtered (function/ minor allele frequency) and Sanger validated. To test identified MYOCD variants for functional impact, site directed mutagenesis on wild-type (WT) GFP-MYOCD plasmid introduced each PBS MYOCD variant. HEK-293t cells were transfected with WT or mutated-plasmid for Sm22 α -luciferase reporter assay and qPCR measuring SMC markers. Mann-Whitney tested group differences, with $p < 0.05$ considered significant.

RESULTS

6 of 140 probands carried 5 novel heterozygous MYOCD mutations in conserved residues, including two truncations (p.N125Tfs*9, p.R384*) in two multiplex PBS families and three missense variants (p.G445S, p.V491M, and p.Q647H) in four sporadic PBS cases. Sm22 α -luciferase assays and qPCR from transfected cells demonstrated that while V491M showed no dysfunction, the N125Tfs*9, R384*, G445S, and Q647H MYOCD mutations caused an average 12-fold inhibition of Myocd activity and significantly reduced expression (mean 2X decrease) of Myh11 and Tagln. Pedigree segregation analysis showed MYOCD variant transmission via asymptomatic carriers, suggesting incomplete penetrance or genetic modifiers.

CONCLUSIONS

Of 5 novel MYOCD mutations in 2 familial and 4 sporadic PBS cases, 4 demonstrated MYOCD loss-of-function in vitro, decreasing expression of genes necessary for SMC development. This confirms MYOCD exonic mutations account for 3.5% of PBS cases.

RARE MISSENSE VARIANTS IN MYOSIN HEAVY CHAIN 11 (MYH11) ARE ASSOCIATED WITH PRUNE BELLY SYNDROME (PBS).

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PURPOSE

Genetic smooth muscle myopathies (SMM) affect neonates to adults and include vascular myopathies (Thoracic aortic aneurysm/ dissection [TAA/D]) and visceral myopathies (Megacystis Microcolon Intestinal Hypoperistalsis Syndrome [MMIHS] and Chronic Intestinal Pseudoobstruction [CIPO]). We investigated PBS MYH11 variants.

MATERIAL AND METHODS

Proband/family DNA underwent whole exome sequencing. MYH11 variants were filtered based on 1) meeting 5 of 6 criteria from in silico functional prediction software (Polyphen-2, SIFT, CADD, VEST, Mutationtaster and AlphaMissense) and 2) <0.001% minor allelic frequency. MYH11 variants were then validated and screened for prior SMM reporting in ClinVar. Each missense mutation underwent AlphaFold3 modeling and protein structural analysis.

RESULTS

6 of 140 PBS probands carry 5 rare, protein-damaging heterozygous MYH11 variants (see Table). All five variants were previously associated to TAA/D and interestingly, 4 out 5 families report cardiac condition in the family, suggesting a potential causal relationship.

PBS-ID	MYH11 Variant	MYH11 Functional Domain	Inheritance	Minor Allelic Frequency (GNOMAD)	Family history of Miscarriages	Structural Analysis:	
						Electrostatic interactions	Hydrophobic interactions
PBS-1	p.R108W	Myosin Head	Maternal	~0	Yes	Destabilized	Introduced
PBS-2	p.R676C		Unknown	0.0008369	No	Altered	Altered
PBS-3	p.A699V		De novo	0.0003897			
PBS-4	p.T1565M	Coil-Colled	Maternal	0.00068	Yes	Altered(Inter-monomer)	Altered(Inter-monomer)
PBS-5							
PBS-6	p.K1628Q						0.0000994

CONCLUSIONS

Heterozygous protein-damaging DNA variants in MYH11 are a genetic cause of PBS in 4.3% of cases. Longitudinal studies are essential to assess life-threatening TAA/D risk and investigate myosin-modulating drugs in PBS patients with MYH11 variants.

PRUNE BELLY SYNDROME (PBS): EVIDENCE FOR AN INTERACTION BETWEEN FILAMIN A (FLNA) MUTATION AND EMBRYONIC HYPOXIC ENVIRONMENT.

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PURPOSE

Previously, we identified 4 PBS males with X-linked, pathogenic FLNA missense mutations, including the severe FLNA p.C2160R gain-of-function mutation disrupting regulatory protein binding sites. The FLNA protein is crucial for smooth muscle cell (SMC) mechanotransduction and hypoxic responses. After creating the Crispr-Cas9-engineered analogous Flna-C2152R mice who have a mild PBS-like phenotype, we exposed them to acute gestational hypoxia (AGH) to assess effects on testis descent and bladder form/function.

MATERIAL AND METHODS

Wild-type (WT) or Flna-C2152R homozygous pregnant dams were exposed to AGH (8hrs of 6% O₂ on E12.5). At 2-months, 24-hour metabolic cage studies measured voided urine volume and frequency (UroVoid). Ex-vivo organ bath assays assessed bladder contractility using electrical field stimulation (EFS) and cholinergic and purinergic agonists.

RESULTS

Comparing AGH WT to AGH Flna-C2152R males, mutants had significantly increased bladder weight, detrusor thickness, and collagen deposition at 40%, 50%, and 44%, respectively. Functionally, Flna-C2152R males had 172% higher mean voided volumes per void, and 57% fewer voids per 24hrs. Flna-C2152R bladder contractility was normal on cholinergic and purinergic stimulation, but with a 49% decrease in EFS response, indicating diminished bladder innervation. No abdominal laxity or hydroureteronephrosis was observed in WT or Flna-C2152 AGH mice. Unilateral intra-abdominal cryptorchidism was present in 5% and 75% of WT vs Flna-C2152R mice, respectively.

CONCLUSIONS

When compared to AGH WT mice, the Flna-C2152R AGH mice manifest a PBS-like phenotype, with enlarged, fibrotic, underactive bladders with diminished contractility and unilateral intra-abdominal cryptorchidism. This suggests that PBS may be the result of an interaction between Flna mutation and embryonic hypoxic environment.

★ PRELIMINARY EFFICACY AND SAFETY FETAL INTERVENTION STUDIES IN THE LOWER URINARY TRACT OBSTRUCTION LAMB MODEL UTILIZING A NOVEL FETAL SHUNT - THE VORTEX SHUNT

Enrico DANZER ¹, Tomohiro ARAI ², Eric JOHNSON ³, Marianna SCUGLIA ², Wasinee TIANHONG ², Roland DEVLIEGER ⁴, Jan DEPREST ⁵, Francesca RUSSO ², Yair BLUMENFELD ⁶ and Kunj SHETH ⁷

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PURPOSE

Current fetal vesicoa-amniotic shunts (VAS) for prenatal treatment of lower urinary tract obstruction (LUTO) are limited in efficacy. The novel Vortex shunt incorporates enhanced fixation elements, a kink resistant extendible conduit, high echogenicity to facilitate ultrasound-guided deployment, and a one-way valve for bladder cycling. We aimed to evaluate the efficacy and safety of ultrasound-guided insertion, drainage, and long-term dislodgement risks of the Vortex shunt in fetal lambs with surgically induced LUTO.

MATERIAL AND METHODS

LUTO was created in 10 fetal lambs at a median of 75 days gestation. All fetuses developed severe LUTO with ultrasound features of megacystis, hydronephrosis, urinary ascites, and significant oligohydramnios/ anhydramnios. At a median of 96 days gestation, these fetuses underwent ultrasound-guided placement of the Vortex shunt. Near term, euthanasia was performed, and the fetuses were retrieved. Efficacy was assessed by the resolution of the key anatomical features of LUTO on ultrasound and necropsy. Safety parameters included dislodgement rate, patency at term, and shunt or procedural side effects.

RESULTS

The ultrasound-guided deployment of the Vortex shunt was successful for all fetuses. Bladder drainage was observed immediately after placement. There was sustained bladder emptying, normalization of hydroureteronephrosis, and amniotic fluid levels. The Vortex shunt remained in an appropriate position throughout gestation for a median of 41 days in all fetal lambs with no dislodgement. There were no shunt-related or procedure-related complications. Furthermore, shunted LUTO bladders had improved bladder contractility compared to the LUTO bladders on early with potassium chloride and carbachol testing, which were comparable to normal controls.

CONCLUSIONS

In this preclinical large animal model of LUTO, we showed that the Vortex shunt can be accurately deployed at midgestation under ultrasound guidance. We further demonstrate its long-term efficacy, function, and safety. The novel shunt system may improve the adverse outcomes of LUTO.

13:25 - 13:29

S01-7 (OP)

★ ASSOCIATION OF GLOBAL DNA METHYLATION LEVELS AND KIDNEY FUNCTION IN CHILDREN WITH POSTERIOR URETHRAL VALVES

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PURPOSE

Posterior urethral valves (PUV) are a major cause of congenital urinary tract obstruction, often leading to chronic kidney disease (CKD) despite successful valve ablation. Epigenetic modifications, particularly DNA methylation, have been implicated in the pathogenesis of several kidney diseases. This study aimed to explore the association of global DNA methylation levels and kidney function in PUV patients with varying kidney function.

MATERIAL AND METHODS

This cross-sectional study included 45 children with PUV post-valve ablation and 45 matched controls (ages 0-14 years). DNA was extracted from peripheral blood, and global DNA methylation levels were quantified using the 5-mC % ELISA kit. Nuclear scintigraphy studies were performed to assess the glomerular filtration rate (GFR) and the presence of kidney scars. The PUV group was categorized into different CKD-subgroups using GFR values.

RESULTS

Global DNA methylation levels were significantly higher in PUV patients (median 5-mC% = 0.4336) compared to controls (median 5-mC% = 0.3732, $p < 0.001$). Subgroup analysis revealed an increasing trend in 5-mC% across all CKD stages compared to controls, with significant elevation in most stages ($p < 0.05$). A logarithmic trend analysis demonstrated a strong correlation between advancing CKD stages and rising 5-mC% ($R^2 = 0.8012$), suggesting a potential link between DNA methylation and kidney dysfunction progression.

CONCLUSIONS

Elevated global DNA methylation levels in PUV patients, especially those with CKD, suggests a potential epigenetic marker for progressive deterioration of kidney function. Also, it appears that the quantification of global DNA methylation can guide pediatricians in early identification of at-risk PUV cases.

13:29 - 13:35

Discussion

IDENTIFICATION OF URINARY BIOMARKERS OF REDUCED DIFFERENTIAL RENAL FUNCTION (DRF)

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PURPOSE

Hydronephrosis is readily detectable and monitored by ultrasound, but differential renal function (DRF) can only be determined by nuclear medicine studies, which are radiating and invasive, or MRI, which may require sedation and can be cost prohibitive. A non-invasive diagnostic marker that identifies patients with reduced DRF may significantly streamline which children with hydronephrosis need additional testing and who may require surgical intervention. Utilizing a cohort of children undergoing pyeloplasty, we identified urinary biomarkers that can stratify the cohort by DRF.

MATERIAL AND METHODS

Bladder urine was collected from 101 children at the time of pyeloplasty. Patients were stratified by high DRF (>40%, n=79) and low DRF (<=40%, n=29) as measured by MAG-3. Urine samples underwent data-independent acquisition based mass spectrometry for peptide quantification. The feature selection algorithm Boruta and decision tree analysis were used to identify relevant proteins to stratify patients. Ingenuity Pathway Analysis identified the functional significance of pertinent proteins.

RESULTS

We identified 4727 proteins of which 1200 protein groups had complete quantified data across all 101 samples. Boruta identified 17 proteins with substantial impact on a model's predictive capability of identifying a patient as high or low DRF. Decision tree analysis identified a combination of 4 proteins that completely delineated the high and low DRF groups. Functionally, significant proteins were observed to be significantly enriched in several renal function related pathways and predicted that the TLR family (z-score = 2.3, p-value = 2.4×10^{-16}) and GHR (z-score = 2.27, p-value = 2.12×10^{-18}) were master regulators of the changes identified.

CONCLUSIONS

We have demonstrated that patients with hydronephrosis can be stratified by DRF using a combination of urinary biomarkers. Once validated, these markers may have significant potential to change current management of hydronephrosis by focusing care towards those patients with low DRF.

EFFICACY OF HYPERBARIC OXYGEN THERAPY IN LONG-TERM TESTICULAR TORSION IN RATS

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PURPOSE

Testicular torsion causes ischemia-reperfusion injury, significantly impacting fertility. Free oxygen radicals have been implicated in tissue damage. Hyperbaric oxygen (HBO) therapy has shown potential in mitigating oxidative stress and improving tissue outcomes. This study aimed to evaluate the efficacy of HBO in reducing testicular damage in long-term torsion.

MATERIAL AND METHODS

Fifty-six rats were randomized into seven groups: Sham (Group 1), torsion followed by detorsion at 4, 8, or 16 hours (Groups 2-4), and the same torsion protocols with HBO therapy (Groups 5-7). HBO treatment involved daily sessions of 100% oxygen at 2.4 atm for seven days post-detorsion. Parameters assessed included total antioxidant (TAS) and oxidant status (TOS), seminiferous tubule diameter, and Johnsen score.

RESULTS

HBO therapy significantly reduced TOS levels in the 16-hour torsion group compared to untreated controls ($p = 0.028$). However, seminiferous tubule diameter and Johnsen scores showed no significant improvement with HBO in either torsioned or contralateral testes across all timepoints. While TAS/TOS ratios improved, histological parameters remained unchanged.

CONCLUSIONS

HBO therapy reduced oxidative stress in long-term testicular torsion but did not improve histological damage or spermatogenic activity. Further studies are required to determine the therapeutic potential and optimal timing for HBO application in testicular torsion.

S02: VARICOCOELE

Moderators: David Keene (UK), Sabine Zundel (SUI)

Main Programme on Wednesday 3, September 2025, 13:50 - 14:25

13:50 - 13:53

S02-1 (OP)

SEMEN QUALITY IN HEALTHY ADOLESCENTS IN RELATION TO AVAILABLE NORMS - A PILOT STUDY

Marcel DRLÍK ¹, Zuzana KRÁTKÁ ², Tomáš FURST ³, Petra NOVÁKOVÁ ¹ and Radim KOČVARA ¹

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PURPOSE

In clinical practice, the adolescents' fertility potential is assessed using the WHO norms for adult fertile men, as there is no reference available for the adolescents. The aim of study was to determine ejaculate quality in healthy adolescents and compare with adult norms.

MATERIAL AND METHODS

We prospectively recruited 44 healthy boys without any genital or syndromic pathology, aged 15-17 years at Tanner 5 puberty stage and analysed 2 semen samples collected 4 weeks apart. We examined a standard spermogram and 3 functional parameters (% of non-apoptotic spermatozoa, acrosome permeability and fragmented DNA) by flow cytometry. Only pathological findings in both samples were considered abnormal. We determined the frequency of abnormal findings for each parameter, established a reference range of 25th-75th percentiles and compared the results with WHO norms.

RESULTS

At least one repeatedly found abnormal parameter on spermogram had 16 (36.3 %), on flow cytometry 35 (79 %) boys. The most common abnormal parameter was progressive motility in 10 (22.7 %), % of non-apoptotic spermatozoa in 15 (34 %) and % of acrosome permeability in 24 (55 %) boys. Reference ranges are summarized in the Table.

Parameter	25-75th percentil	Reference value for adults
Volume (ml)	1.5-3.0	>1.5
Sperm count (10E6)	68.6-156.2	>39
Sperm concentration (10E6)	30.1-68.8	>16
Progressive motility(%)	27.4-54.3	>30
Abnormal morphology(%)	90.7-95.4	<96
Non-apoptotic sperm(%)	38.7-58.3	>50
Permeable acrosome(%)	29.4-44.4	<30
DNA fragmentation(%)	5.2-10.6	<20

CONCLUSIONS

We set reference values for spermiogram and functional semen parameters for adolescents. One third of examined healthy adolescents' samples did not meet adult spermiogram standards. The most frequent was low progressive motility. Three quarters of adolescents' samples failed to meet the standards for functional parameters (proportion of apoptotic sperm and/or sperm with permeable acrosome). All boys met the standard adult criteria for % DNA fragmentation.

13:53 - 13:56

S02-2 (OP)

PEAK SYSTOLIC VELOCITY AS A POTENTIAL PREDICTIVE MARKER OF SEMEN PARAMETERS IN ADOLESCENTS WITH VARICOCELES

Kaylee BRESSLER ¹, Israel FRANCO ², Alex FANG ¹, Diego ALVAREZ ¹, Jordan MENDELSON ¹, Ronnie FINE ¹, Mark HOROWITZ ¹, Steven FRIEDMAN ¹ and Jordan GITLIN ¹

1) NYU Langone, Pediatric Urology, Westbury, USA - 2) Yale School of Medicine, Clinical Urology, New Haven, USA

PURPOSE

Future fertility has long been a concern associated with varicoceles. Changes in testicular blood flow in patients with varicoceles has been well documented. This study aims to correlate flow changes with semen parameters and hypothesizes that increased arterial flow will be correlated with better semen parameters, resulting in increased fertility.

MATERIAL AND METHODS

A retrospective single institution chart review was conducted of adolescent patients who were Tanner stage V with a palpable, left sided varicocele that had not been operated on, and who had undergone at least one semen analysis and ultrasonography test. Doppler ultrasound findings and semen analysis values were recorded. Descriptive statistics, univariate logistic regression, and ROC analysis were done using SPSS.

RESULTS

A total of 149 patients were included with a mean age of 18.2 (\pm 1.4) years old. The average peak systolic velocity was 11.33 (\pm 4.70) cm/s and average end diastolic velocity was 5.3 (\pm 5.1). Univariate analysis of flow data revealed peak systolic velocity was significantly associated with total motile sperm count (TMSC), with an odds ratio of 1.37 (95% CI: 1.08-1.73, $p=0.010$) indicating that a one unit increase in velocity was associated with a 137% increase in TMSC. The cutoff was found to be 10.2 cm/second with a specificity of 93% and sensitivity of 56%.

CONCLUSIONS

Higher flow rates in the testicular artery were shown to be associated with a higher TMSC. In the future, use of ultrasound evaluation of flow parameters in patients with varicoceles may help with clinical decision making and when you should intervene.

14:04 - 14:07

S02-3 (OP)

PARATESTICULAR INJECTION OF ICG FOR LYMPHATIC-SPARING LAPAROSCOPIC PALOMO PROCEDURE: PROSPECTIVE REPORT OF 17 CONSECUTIVE CASES

Sabine ZUNDEL ¹ and Philipp SZAVAY ²

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PURPOSE

Sparing lymphatic vessels during Palomo varicocelectomy significantly reduces the rate of postoperative hydrocele. Intratesticular lesions are reported to occur in 4.1 to 19% of cases following intratesticular injection of dyes. We describe the first case series of paratesticular injection of indocyanine green (ICG) for lymphatic-sparing Palomo procedure on 17 consecutive patients.

MATERIAL AND METHODS

In July 2021, we transitioned from using patent blue to ICG in our standard lymphatic-sparing technique. All patients scheduled for ICG-lymph sparing Palomo Procedure were enrolled in this prospective study. Surgical treatment was recommended if testicular size difference exceeded 20% or patients reported long-term complaints after detailed counselling about the pathology. After laparoscopy was installed, 2ml of ICG was injected paratesticularly at three different locations.

RESULTS

Visualization was successful in 16 of the 17 patients within seconds of the injection, and lymphatic sparing was achieved in all these cases. The 17th patient had a history of perforated appendicitis with extensive intraperitoneal adhesions and scarring. While ICG injection facilitated the identification of the testicular vessels, selectivity was lost by the time the vessels were dissected. A non-lymphatic-sparing Palomo procedure was performed.

Regression of the varicocele was observed in all cases, and no patient developed a hydrocele. All testes grew postoperatively with ten demonstrating catch-up growth three months postoperatively.

CONCLUSIONS

Our preliminary data suggest that paratesticular injection of ICG enables reliable visualization of lymph vessels. Considering the reported incidence of intratesticular lesions following intratesticular injection, we believe that paratesticular injection should be the treatment of choice.

COMPARING SURGICAL INTERVENTION BETWEEN TWO ADOLESCENT VARICOCELE MANAGEMENT ALGORITHMS

Meghan DAVIS, Jason VAN BATAVIA, Sameer MITTAL, Karl GODLEWSKI, Arun SRINIVASAN, Aseem SHUKLA, Katherine FISCHER and Thomas KOLON

Children's Hospital of Philadelphia, Urology, Philadelphia, USA

PURPOSE

Testicular volume differential (TVdiff) has been one driver of treatment for adolescent varicocele. We incorporate additional parameters of semen analysis (SA) and serum hormone labs which are predictive of risk for infertility. We hypothesized that placing less emphasis on TVdiff and more on SA and hormone analysis would decrease healthcare utilization, interventions, and cost.

MATERIAL AND METHODS

Adolescent males with a varicocele followed at a high-volume center were evaluated by scrotal ultrasound (SCRUS), SA, FSH, and inhibin B. Patients with history of cryptorchidism or orchiectomy were excluded. Clinical data were examined utilizing an algorithm incorporating only TVdiff (Algorithm 1) compared to SA and hormone labs (Algorithm 2).

RESULTS

178 patients were identified. Mean age at diagnosis was 14.6 years. Mean age at first SCRUS, hormone studies, and SA were 16.5, 17.2, and 17.4 years respectively. Based on a TVdiff > 0.2 on SCRUS (Algorithm 1), 23 patients would have undergone varicocelectomy. However, based on Algorithm 2 that incorporated SA and hormone studies, five were recommended for varicocelectomy (one lost to follow-up prior to scheduling), five were discharged after further reassuring evaluation with SA and hormones, and the remaining 13 have ongoing work-up or were lost to follow-up. Overall, 21 patients actually underwent varicocelectomy, 17 had a normal TVdiff but abnormal SA and labs prompted surgery. Of the patients who underwent varicocelectomy, 66% had a post-operative SA; of which 71% were improved from pre-operative SA.

CONCLUSIONS

Management that employs SA and hormone labs can identify males who would benefit from varicocelectomy beyond those identified with TVdiff alone. At the same time, a management algorithm focused on TVdiff alone may result in unnecessary surgical intervention, while missing an opportunity to intervene on males at risk for infertility by labs and SA.

CULMINATION OF A DECADE OF TESTICULAR TISSUE CRYOPRESERVATION AT CHILDREN'S NATIONAL HOSPITAL: FIRST-IN-HUMAN AUTOLOGOUS SPERMATOGONIAL STEM CELL TRANSPLANTATION IN AN ADULT SURVIVOR OF CHILDHOOD CANCER

Michael HSIEH ¹, Amanda ZIELEN ², Karen PETERS ³, Gunapala SHETTY ⁴, Deborah GROSS ², Carol HANNA ⁵, Serena DOVEY ³, Anna WECHT ⁶, Glenn CANNON ⁷, Marvin MEISTRICH ⁴, Kathleen HWANG ⁶ and Kyle ORWIG ²

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INTRODUCTION

With improved therapies, childhood cancer patients can live full lives after cure, including the possibility of having children. Unfortunately, some cancer treatments cause infertility. The only option to preserve fertility in prepubertal boys who are not producing sperm is to cryopreserve their immature testicular tissue or cells, including spermatogonial stem cells (SSCs). Herein we describe ten years of Children's National Hospital (CNH) experience in testicular tissue cryopreservation for SSC transplantation as part of a large multicenter study based at the University of Pittsburgh.

PATIENTS

Inclusion criteria included boy undergoing treatment with significant risk of inducing infertility and/or a condition requiring partial or radical orchiectomy. Exclusion criteria included patients with high risk of anesthetic or surgical complications and psychiatric conditions preventing giving fully informed assent/consent.

RESULTS

From April 2015 through January 2025, 207 patients were approached for study participation and 139 were enrolled. This 10-year effort has culminated in the first application of ultrasound-guided rete testis injection (in 2023) to transplant SSCs into the testis of an adult survivor of childhood cancer treated at CNH. During this presentation we will discuss the preclinical work leading up to this transplantation, as well as semen analysis outcomes.

CONCLUSIONS

Our decade-long effort demonstrates the feasibility of TTC and SSC transplantation in adult survivors of childhood cancer. Dissemination and refinement of associated techniques will result in fertility restoration in this emerging patient population.

S03: TESTES

Moderators: Navroop Johal (UK), Ana Hernandez (SP)

Main Programme on Wednesday 3, September 2025, 15:30 - 16:15

15:30 - 15:33

S03-1 (OP)

THE EFFECT OF MULTIMEDIA USE IN THE INFORMED CONSENT PROCESS ON THE ANXIETY LEVEL IN THE PARENTS OF CHILDREN UNDERGOING ORCHIOPEXY: PROSPECTIVE RANDOMIZED CONTROLLED STUDY

Mehmet CETIN ¹, Cagri Akin SEKERCI ², Turker ALTUNTAS ¹, Onur Can OZKAN ², Yiloren TANIDIR ³, Selcuk YUCEL ⁴, Tufan TARCAN ⁴ and Kamil CAM ⁵

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PURPOSE

Undescended testis is a common congenital anomaly in male newborns. Orchiopexy, the standard treatment, is frequently performed in pediatric urology. Studies suggest that multimedia tools may reduce parental anxiety. However, no studies have evaluated the effect of video-based informed consent on anxiety in parents of children undergoing urological surgery. This study aims to examine the impact of video-based information on anxiety and depression levels in parents of children undergoing orchiopexy.

MATERIAL AND METHODS

Parents of children scheduled for orchiopexy between 15/12/2023 and 15/10/2024 were enrolled. Exclusion criteria included prior urological surgery or additional urological procedures. Children were randomized into two groups: Group 1 received Standard Informed Consent and Verbal Information three days preoperatively, while Group 2 also watched a 6-minute educational video on surgical approaches and procedures (<https://youtu.be/9Q60CnIPL0w>). HADS, BAI, and STAI scores were obtained preoperatively and one week postoperatively, and compared between groups.

RESULTS

Seventy-four children with a median age of 5.5 (1-13) years were randomized into two groups (37 per group). Orchiopexy was performed on the right (n=34), left (n=23), or bilaterally (n=15). Mothers were primary caregivers in 74.3% of cases. HADS-T, HADS-D, HADS-A, BAI, and STAI-I scores significantly decreased postoperatively in both groups, while STAI-II remained unchanged ($p<0.001$, $p=0.015$, $p<0.001$, $p=0.012$, $p<0.001$). Group 2 had significantly lower preoperative HADS-T (11-6), BAI (3-1), and STAI-I (41-35) scores and lower postoperative HADS-D (4.5-2) and STAI-I (36.5-26.5) scores ($p=0.029$, $p=0.008$, $p=0.007$, $p=0.041$, $p=0.043$). Bilateral cases had higher anxiety and depression scores. The use of multimedia was more effective for parents with higher education.

CONCLUSIONS

Preoperative multimedia video information, alongside routine written consent, reduced anxiety and depression in parents of children undergoing orchiopexy, with no adverse effects. Video-based information may strengthen the informed consent process.

15:33 - 15:36

S03-2 (OP)

ADDRESSING INEQUITIES IN CRYPTORCHIDISM CARE: THE IMPACT OF SOCIAL DETERMINANTS ON TIMELY & APPROPRIATE REFERRALS - A SIX-YEAR STUDY FROM A HIGH-VOLUME REFERRAL CENTER

Jin Kyu (Justin) KIM, Renee SHAVNORE, Pete ARNOLD, Nikhil BATRA, Konrad SZYMANSKI, Benjamin WHITTAM, Martin KAEFER, Mark CAIN, Pankaj DANGLE, Kirstan MELDRUM, Richard RINK, Rosalia MISSERI and Joshua ROTH

Riley Hospital for Children, Urology, Indianapolis, USA

PURPOSE

The American Urological Association (AUA) and European Association of Urology (EAU) recommends urology referral and surgery for undescended testicle (UDT) before 18 months of age, but it has been shown that many referrals occur later, influenced by social factors. This study aims to identify key social factors that impact UDT referral timing and appropriateness.

MATERIAL AND METHODS

Pediatric patients referred to our institution for UDT management from 2018-2023 were analyzed. Referral appropriateness was assessed by whether the child had a true UDT, defined as undergoing orchiopexy. Timeliness was defined as referral before 18 months of age. Demographics and socioeconomic data were gathered, including health literacy index (HLI), area deprivation index (ADI), and provider training (physician vs. advanced practice provider [APP]).

RESULTS

Of 1821 patients, 45.6% of patients had bilaterally descended testicles, and the median referral age was 2.5 years (IQR: 1.2-6.6), with only 34.7% referred before 18 months. Taken together, 18.1% of referrals were both appropriate and timely. Univariate analysis found inappropriate referrals were associated with provider type, HLI, ADI, median income ratio (geographic income/state income), education level, race, and patient age. Multivariate analysis identified three significant factors for inappropriate referrals: APP referrals (OR 1.37, $p=0.028$), higher ADI percentile (OR 1.005, $p=0.021$), and Black race compared to non-Hispanic White (OR 1.80, $p<0.001$; Figure 1). Late referrals were significantly linked to race and recent local employment rate changes, with Hispanic children more likely to be referred late (OR 1.63, $p=0.012$).

CONCLUSIONS

Our findings highlight that nearly half of the children referred for UDT have normally descended or retractile testicles not necessitating referral, and two-thirds are referred late. Significant disparities in referral quality and timing are associated with race, socioeconomic factors, and provider type. Targeted

educational interventions focusing on APPs, high-ADI communities, non-White populations, or broader campaigns may help address these disparities effectively.

15:36 - 15:43

Discussion

15:43 - 15:46

S03-3 (OP)

MODIFIED TESTICULAR TRACTION IN INTRA-ABDOMINAL TESTES, DO WE REALLY NEED TO WAIT FOR 6 WEEKS?

Adel ALJUNEIBI ¹, Hesham Soliman SAFOURY ¹, Mohamed HOBELDIN ¹, Saif ABDELSALAM ¹, Abdunaser ALSAID ², Hamdan ALHAZMI ³, Khaled KHALFAN ⁴, Abdulrahman ALMAGHRABI ⁵, Sadikullah KHAN ¹, Nusheen NASIR ¹, Ashhad Ali KHAN ² and Ahmed Abdelhaseeb YOUSSEF ⁶

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PURPOSE

We published earlier our modified testicular traction technique including intracorporeal placed suture, gubernacular preservation and minimal dissection. We used to fix the testis to a mobile part of the abdominal wall to enhance lengthening with respiratory movement rather than fixing near bony landmark. Herein we compare our traction period of 7 days to the classic 6 weeks period adopted earlier

MATERIAL AND METHODS

In five centers in three Arabian-Gulf countries, patients with intra-abdominal testes operated using the intracorporeal placement of traction suture modification of staged traction laparoscopic-orchiopey were divided into 2 groups. Group 1: the time interval between both stages was 7 days, while group 2: followed the classic approach with a waiting interval of 6 weeks

RESULTS

Group 1 included 92 patients, while group 2 included 58 patients. All patients tolerated both stages of surgery well without complications. Group 2 had 4 testes found detached from the anterior abdominal wall during second stage. Two of whom required redo first stage while the other 2 was found long enough to be positioned in the scrotum without tension. Moreover, mean operative time was slightly longer in group 2. This was attributed to time spent in testicular adhesiolysis. The 1 year follow-up period proved successful outcome in all cases

CONCLUSIONS

The modified staged traction laparoscopic orchiopey is safe and successful in intra-abdominal testes. Seven days traction period is enough to bring the testis down to the scrotum decreasing the time burden on the family to worry about complications related to traction.

EVALUATING RESULTS OF A PRE-DETERMINED APPROACH OF VESSEL SPARING SINGLE STAGE LAPAROSCOPIC ORCHIOPEXY IN MANAGEMENT OF ALL INTRA-ABDOMINAL TESTES

Hawwa CHAKERA ¹, Leandra Sheila STRINGER ², Adam FORSTER ³, Zhan Tao "Peter" WANG ² and Sumit DAVE ²

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PURPOSE

Optimal treatment for intra-abdominal undescended testes (IAT) remains debated. Laparoscopic single-stage vessel sparing orchidopexy (LVSO) and one/two stage Fowler Stephens orchidopexy (LFSO) are selected based on surgeon training and preferences rather than objective criterion necessitating vessel division. This study investigates a pre-meditated approach to perform all orchidopexies for IAT using LVSO, irrespective of testis location or any factors that predict the need for LFSO.

MATERIAL AND METHODS

A retrospective analysis was conducted on patients who underwent LVSO between January 2008 and December 2023. All patients in this series are consecutive patients except 2, excluded due to Prune belly syndrome. Data collected included age at surgery, laterality and post-operative Doppler ultrasound findings, testicular resistive index (RI), volume and location of the testis, at minimum 6 months following LVSO. All testes were extensively mobilized and brought into the scrotum medial to the medial umbilical ligament.

RESULTS

This single surgeon series includes 54 patients with 63 testes undergoing LVSO at a mean age of 2.3 years. Doppler ultrasounds conducted post-orchidopexy showed testicular atrophy (no flow), in 2/63 testis (3%). 87% (55/63) of testicles were successfully positioned in the scrotum post-surgery (Mean follow-up 2.2 years). Testicular RI was comparable in the majority of patients, when documented.

CONCLUSIONS

This study highlights the effectiveness of LVSO in managing IAT. LFSO guarantees scrotal location of the testis with a higher risk of atrophy, while LVSO reduces the need for a second operation and is associated with a lower atrophy rate. These findings support the need for a standardized definition of atrophy post-orchidopexy.

IMPACT OF INITIAL PRESENTATION SITE ON ORCHIECTOMY RATES IN PEDIATRIC TESTICULAR TORSION: A RETROSPECTIVE COHORT ANALYSIS

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INTRODUCTION

Testicular torsion is a time-sensitive pediatric emergency, with delays in care potentially leading to testicular loss. Transfer to pediatric specialty hospitals may prolong care pathways. The National Surgical Quality Improvement Program - Pediatric (NSQIP-Ped) collects process measures for time-sensitive operations, including initial presentation site (NSQIP-Ped vs. transfer). A Testicular Torsion Collaborative (TTC) of 29 NSQIP-Ped sites was convened to improve torsion care processes. This study evaluates the association between initial presentation site and orchiectomy rates, as well as the impact of TTC participation and time to operation under four hours (TTOR<4).

MATERIAL AND METHODS

This retrospective cohort analysis included non-neonate pediatric patients (0-17 years) from the NSQIP-Ped database who underwent urgent surgery for testicular torsion between January 2022 and September 2024. Patients with symptom duration >24 hours were excluded. Orchiectomy was modeled using mixed-effects logistic regression, clustering by institution and controlling for initial presentation site. Sensitivity analyses assessed associations with TTC participation and TTOR<4.

RESULTS

Among 2,802 included cases from 74 institutions, 51% (1415/2802) presented directly to NSQIP-Ped hospitals, 54% (1514/2802) were performed at TTC sites, 88% (2467/2802) had TTOR<4, and 8.7% (244/2802) underwent orchiectomy. Initial presentation site was not associated with orchiectomy (OR: 1.2, 95% CI: 0.9-1.6). On sensitivity analysis, non-TTC sites were associated with higher odds of orchiectomy (OR: 2.3, 95% CI: 1.5-3.4).

CONCLUSIONS

Presentation site did not affect orchiectomy rates. However, TTC participation was associated with a significantly reduced orchiectomy likelihood, highlighting the potential of collaborative efforts to improve testicular salvage for transferred patients.

TO SALVAGE OR NOT SALVAGE: CAN ELASTOGRAPHY AND ICG HELP DECISION MAKING IN LATE PRESENTING CASES OF TESTICULAR TORSION?

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PURPOSE

Delayed presentation of testicular torsion(TT) can lead to increased intratesticular pressure, which may require additional T.albuginea incision, complicating the choice between salvage&orchiectomy. Conventional macroscopic evaluation may introduce subjectivity, resulting in uncertainty in clinical decision-making. Assessing the efficacy of elastography in conjunction with indocyaninegreenfluorescence to establish a more objective basis for decision-making could be beneficial. We aimed to enhance outcomes of decision making (salvage with/without albuginea incision or orchiectomy) in delayed TT through evaluation of testicular viability.

MATERIAL AND METHODS

Total of 30 postpubertal rats were categorized into 3 groups of varying periods of TT: Group1 (2-4 hours), Group2 (6-8 hours) and Group3 (10-12 hours). Initially,all cases were blinded to standard macroscopic examination, followed by ICGfluorescence and elastography to determine testicular viability. Consequently, orchiectomy was performed on all cases.The decision-making process was further evaluated by the histological TUNELassay(apoptosis)on all orchiectomy tissues(early/late).

RESULTS

In all cases except 1 in Groups1&3 were in concordance with ICG/elastography combination. In Group2(6-8 hours), the decision for orchiectomy based on macroscopic observation was significantly higher(60%)($p<0.05$) compared to the ICG/elastographypathway(35%). The apoptosis rate in the tunnel test histopathologically validated the ICG/elastography decision-making process in group 2.

CONCLUSIONS

ICG and elastography demonstrate a higher predictive value for testicular viability, leading to greater salvage rates compared to evaluation based on macroscopic appearance. This approach, particularly in cases of relatively delayed presentation, may facilitate a more objective assessment, thereby increasing the likelihood of successful testicular salvage.

OBESITY AND TESTICULAR FUNCTION IN CHILDREN WITH MICROPENIS

Jae Min CHUNG ¹, Han A LEE ¹, Sungchan PARK ² and Sang Don LEE ¹

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PURPOSE

Childhood obesity is increasingly recognized as a factor influencing endocrine function, including testicular health. However, the impact of obesity on testicular size and function in children with micropenis, without other endocrine disorders or congenital abnormalities, remains unclear.

This study investigates the effect of obesity on testicular function and size in children with micropenis, excluding those with other endocrine or congenital abnormalities.

MATERIAL AND METHODS

A retrospective review was conducted on 112 children diagnosed with micropenis who visited our institution (mean age: 91.8 ± 25.8 months). Patients were divided into non-obese (36) and obese (76) groups. Penile and testicular size were assessed and compared between the groups. Testicular function was evaluated using hCG stimulation tests. Levels of testosterone, luteinizing hormone (LH), and follicle-stimulating hormone (FSH) were also measured.

RESULTS

Obese group were significantly older than their non-obese group. The stretched penile length (SPL) showed no significant difference between the groups (non-obese: 3.4 ± 0.5 cm vs. obese: 3.5 ± 0.5 cm, $p = 0.221$). Testicular size was significantly larger in the obese group (2.1 ± 0.6 cc vs. 1.9 ± 1.3 cc, $p = 0.001$). However, testicular function tests revealed impaired function in 5.6% (2/36) of the non-obese group and 23.7% (18/76) of the obese group ($p = 0.02$). There were no significant differences in baseline testosterone, LH, or FSH levels between the groups.

CONCLUSIONS

This study shows the complex relationship between obesity and testicular function in children with micropenis. Obesity in children with micropenis is associated with impaired testicular function, highlighting the need for addressing obesity to prevent testicular dysfunction. The absence of differences in baseline hormonal levels suggests that obesity-related testicular dysfunction may not be detectable through routine hormone testing alone.

S04: GENITALIA

Moderators: Ermelinda Mele (IT), Yi Li (USA)

Main Programme on Wednesday 3, September 2025, 16:15 - 17:10

16:15 - 16:18

S04-1 (OP)

PENILE ANTHROPOMETRY OF HEALTHY CHILDREN

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PURPOSE

Penile anthropometric measurements vary among children of different ethnicities. To date, there is no local data available on this subject. This study aims to assess the penile anthropometry of local healthy children.

MATERIAL AND METHODS

This prospective cross-sectional study, conducted over one year, included 210 healthy children aged 6 months to 12 years who underwent circumcision. Demographic data were recorded, and body mass index (BMI) was measured. Stretched penile length (SPL), Glans diameter at the coronal sulcus (GDCL), and mid-penile diameter (MPD) were documented. An age-specific nomogram for SPL, GDCL, and MPD was generated. Descriptive statistics were performed using SPSS version 27.

RESULTS

The overall mean values for BMI, SPL, GDCL, and MPD in children aged 6 to 12 months were 18.25 ± 2.5 kg/m², 3.75 ± 0.4 cm, 1.36 ± 0.1 cm, and 1.28 ± 0.1 cm, respectively. In contrast, for children aged 1 to 12 years, the mean values were 17.9 ± 2.9 kg/m², 5.53 ± 0.9 cm, 1.71 ± 0.2 cm, and 1.61 ± 0.21 cm, respectively. The SPL of children increased gradually from 3.75 ± 0.4 cm at ages 6 to 12 months to 5.53 ± 0.9 cm at ages 1 to 12 years, with the most rapid growth occurring during the 11th and 12th years. However, no correlation was found between height, weight, BMI, and SPL.

CONCLUSIONS

A penile anthropometric nomogram for children of our country has been developed. This data can serve as reference values for the assessment and management of disorders of sexual development and hypospadias.

CRITICAL KNOWLEDGE GAP REGARDING NEONATAL CIRCUMCISION GUIDELINES IN MEDICAL EDUCATION

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PURPOSE

Neonatal circumcision is a common yet controversial pediatric urological procedure in the United States, prompting debate about its benefits, risks, and ethical implications. Although the American Urological Association (AUA) and American Academy of Pediatrics (AAP) have published practice guidelines, medical students' understanding of current circumcision evidence and their perspectives on its modern practice have not been studied. Thus, our aim was to elucidate these future providers' viewpoints, which inherently are crucial in the shaping of future clinical practice.

MATERIAL AND METHODS

An IRB-approved survey was administered to medical students at a single institution. The survey assessed students' knowledge of benefits, risks, and guidelines; attitudes including personal, ethical, and cultural factors; and clinical training. This survey included Likert-scale, multiple-choice, and open-ended questions, was pilot-tested, and underwent revision based on feedback. Data was analyzed using descriptive statistics, chi-square testing, and logistic regression.

RESULTS

113 medical students participated in the survey: 20.4% MS1s, 28.3% MS2s, 25.7% MS3s, and 25.7% MS4s. At the time of survey, MS2s had completed the preclinical curriculum, while MS3/MS4s had completed the core clinical curriculum. Despite completing core rotations, 55.4% of MS3/MS4s reported being unaware of either AUA or AAP guidelines. Additionally, only 13% of MS1s, 25.8% of MS2s, and 53.6% of MS3/MS4s knew that universal routine neonatal circumcision was not indicated, with significantly higher rates of uncertainty exhibited by MS1s and MS2s ($p < 0.004$, Figure 1). 80.5% of respondents felt the curriculum did not adequately cover neonatal circumcision, while 77.9% felt unprepared to counsel.

CONCLUSIONS

Widespread misunderstanding of neonatal circumcision among medical students highlights a critical gap in medical education, risking perpetuation of internal biases over evidence-based practice. Addressing these educational deficiencies through revision of curriculum is imperative to ensure future physicians provide informed, evidence-based care.

WITHDRAWN: THE PREVELENCE AND RISK FACTORSORS FOR PRIAPISM AMONG CHILDREN WITH SICKLE CELL ANEMIA

16:24 - 16:34

Discussion

16:34 - 16:37

S04-4 (OP)

PELVIC FRACTURE URETHRAL INJURY IN PEDIATRIC PATIENTS: SURGICAL INTRICACIES AND MANAGEMENT POLICIES

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PURPOSE

In present study, we have reviewed our surgical experience managing pediatric pelvic fracture urethral injuries (PFUI) via a transperineal approach, identifying preoperative and intraoperative predictors of pubectomy and reporting long-term outcomes. Gapometry index was used as preoperative predictive tool for the need of pubectomy.

MATERIAL AND METHODS

Gapometry index was calculated as bulbo-prostatic urethral gap divided by length of bulbar urethra (G/L). The patients were divided into two groups: Group I (simple perineal) and Group II (extended perineal with ancillary procedures). Group II was further divided as IIa: Inferior pubectomy only, IIb: Total pubectomy and IIc: perineo-abdominal transpubic approach including inferior/total pubectomy or perineo-abdominal transpubic approach). Success was defined as restoration of urethral continuity with urethral caliber equal or greater to $6 + \text{age} \times 0.6$ and normal voiding ($\text{Pdet Qmax} > 10 \text{ ml/sec}$, $\text{PVR} < 20\%$).

RESULTS

85 patients with PFUI were treated at our institution. The median age at definitive surgery was 8.8 years. Mean distraction defect length was 2.1 cm (range 1.3 to 2.7) in Group I vs 3.5 cm (range 3.1 to 4.2) in Group II. The difference was highly statistically significant ($p < 0.001$). This correlated with the mean index of Gapometry Index which was 0.43 in Group I vs 0.70 in Group II. The difference was highly statistically significant ($p < 0.001$). However, the mean bulbar urethral length was not much different in both the groups i.e. 4.8 cm (range 4.3 to 5.5) and 5.0 (4.5-5.1) cms in Group I and II respectively. A positive correlation was observed between urethral gap length i.e. Gapometry Index.

CONCLUSIONS

Most pediatric posterior urethral injuries(PFUI) can be successfully managed through a perineal approach, reserving extended approach for more complex cases. Increased urethral gap length and Gapometry Index correlated with the need for more complex surgical approaches like pubectomy.

16:37 - 16:40

S04-5 (OP)

VOIDING OUTCOME FOLLOWING POSTERIOR URETHEROPLASTY IN BOYS: LONG TERM FOLLOW UP

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PURPOSE

To compare the indications and voiding outcome of boys who underwent single stage End to End (SSEE) Bulboprostatic Urethoplasty performed by Progressive Perineal Approach VS Combined Abdominoperineal Approach.

MATERIAL AND METHODS

Record are reviewed of 145 boys who underwent SSEE Bulboprostatic Urethoplasty between 2005-2024 divided as Group I, VS APA Group II and compared for nature of trauma, H/O Failed Urethoplasty. Findings of Antegrade and Retrograde cystourethrogram and scopy, operative findings, voiding outcome as urinary symptoms, VCUG, uroflowmetry, post urethroplasty surgical intervention and follow up period. Mean and SD is calculated for continuous variable Chi square test for categorical variables. P-value <0.05 will be considered as significant.

RESULTS

Of 145 patients 95(65.5 %) were Group-I(PA) as compared to 50(34.5%) Group-II(APA). Age in years, Group I(PA)10.02+/-2.38 VS Group-II(APA) 10.04+/-3.22. Nature of trauma group I RTA 59(62.1%), fall 22(23.1 %) crush injury 14(14.7%) whereas in group II RTA 43 (86 %), crush 6(12%) and fall 1(2 %). In Group-II 35(70%) were started as Abdominal approach first, of them 17 were with short posterior urethra and were not completely visualized, 13 were Redo urethroplasty. However 15(30%) started as PA and converted to APA intraoperatively for too much fibrosis, unable to feel bougie from above 8(16%) and unable to perform anastomosis in high up bladder and posterior urethra in 7(14%).

Voiding outcome showed normal per urethral voiding in 88(92.6%) Q max 17.2+5.8 ml/sec in Group-I vs 47(94%) Q max 16.6+/-3.2 ml/sec in Group II(p=0.94). 12 patient(8.2%) were unable to void per urethra, and required cystoscopy and optical urethrotomy and mitrofinoff in 1 only 8 patient with incontinence required anticholinergics and bulking agent at bladder-neck. Mean-follow up period was 1250+/-1130 days.

CONCLUSIONS

Majority 65.5% of our patients could be managed by progressive perineal approach only. However others required Abdominoperineal approach. Therefore both expertise are essential. In both group majority >90% achieved normal voiding.

HOW TO DEAL WITH A HYPOPLASTIC URETHRA AFTER VAS?

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PURPOSE

As pediatric urologists, we are encountering an increasing number of patients receiving vesico-amniotic shunts (VAS). Consequently, we are seeing more boys with an impassable, hypoplastic urethra. Herein, we report our management of these patients in a tertiary center.

MATERIAL AND METHODS

Between October 2015 and December 2024, we reviewed our congenital LUTO patients. Out of 120 patients (63 with VAS), 22 had a hypoplastic urethra, where we were unable to confirm a urethral valve via cystoscopy.

RESULTS

We included 22 male patients (median follow-up of 4.5 years, ranging from 1 month to 9 years) with prenatally suspected lower urinary tract obstruction who received a VAS between 12 and 21 weeks of gestation (median 14 weeks). Only those with a diagnosed hypoplastic or atretic urethra via VCUG or cystoscopy were included in the follow-up.

In 10 out of 22 cases, urethral reconstruction was performed using foreskin (plus buccal mucosa in one case). Seven patients are voiding through the reconstructed urethra, while three could not void due to a neurogenic bladder (VACTERL in two cases, unknown syndrome in one case). Seven patients still have their vesicostomy due to young age, three have a Mitrofanoff stoma, one is on a temporary suprapubic catheter awaiting urethral reconstruction, and one patient died.

CONCLUSIONS

Following VAS, we are increasingly seeing patients with a hypoplastic urethra. Urethral reconstruction has been successfully performed in those without neurogenic bladder dysfunction. However, the timing of urethral reconstruction and the correct indication remain challenging. Currently, there is no comparable data in the literature concerning urethral function after early VAS.

A BIOENGINEERED COLLAGEN MESH TRYING TO BRIDGE THE VALLEY OF DEATH IN TRANSLATIONAL RESEARCH

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PURPOSE

A bioengineered mesh for urethral and bladder reconstruction has not replaced current surgical practice of harvesting autologous tissue grafts. A multidisciplinary team has worked on realizing this objective and the patented TissueSpan technology mesh is the final prototype that has transitioned from research setting to a first in human study.

MATERIAL AND METHODS

Various bovine collagen mesh generations underwent in-vitro testing, mechanical analyses, and bench testing by surgeons over a period of 10 years.

Urethral Reconstruction	Rabbits 2cm tubular mesh	Dogs 4cm tubular mesh	First in Human Rectangular mesh
Engineering Refinement	N=69	N=0	N=0
Final Prototype	N=3 (1 month) N=3 (3 months) N=3 (6 months)	N=2 (1 month) N=2 (3 months) N=1(12 months) N=1(16 months)	N=5 (24 months) Urethral stricture 3cm
Total	78	6	5
Bladder Reconstruction	Rats 1x1cm2 rectangular mesh	Rabbits 2.5x2.5cm2 rectangular mesh	Mini Pigs 4.5cm diameter circular mesh
Engineering Refinement	N=8	N=0	N=0
Final Prototype	-	N=3 (3 month) N=4 (6 months)	N=2 (6 months)
Total	8	7	2

Functional outcome was examined, and biopsies of repaired sites were subjected to histology and immunohistochemistry. Manufacturing compliant to regulatory standards for the clinical study were undertaken. All in-vivo experiments and first in man trial were approved by the relevant ethics committees.

RESULTS

Voiding post urethral reconstruction and increase in bladder capacity post augmentation was demonstrated. Spontaneous urothelial coverage and smooth muscle cell migration was seen. No immediate or delayed rejection was observed locally or systemically in all 5 patients. 2 patients have now completed 24 months and 3 patients are 16 months post-surgery.

CONCLUSIONS

The final engineered mesh still requires a large clinical trial to further confirm safety, performance, and patient benefit. Clinical translation takes time and requires a multidisciplinary collaboration.

16:57 - 17:02

S04-8 (VP)

★ ROBOTIC PEDICLED APPENDIX GRAFT FOR URETHRAL RECONSTRUCTION IN PENILE AGENESIS: A NOVEL SURGICAL APPROACH

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PURPOSE

Penile agenesis is an exceptionally rare congenital anomaly, posing significant challenges in urological reconstruction and functional outcomes. The appendix, with its consistent vascular anatomy and motility, provides a promising option for complex urethral reconstructions (Chen et al., 2012; Koshima et al., 1999). Early studies highlighted its feasibility in urethral substitution, demonstrating its potential for addressing reconstructive needs (Büyükcünal et al., 1995). Clinical applications have utilized pedicled or free appendix flaps for tailored reconstructions in cases of severe urethral and genital anomalies (Hiradfar et al., 2015; Aggarwal et al., 2002; Gupta et al., 2017). This case report describes the urethral reconstruction of a 10-year-old male with penile agenesis.

MATERIAL AND METHODS

The patient underwent early perineal urethrostomy and colostomy, followed by surgical interventions including neophalloplasty. Initial reconstruction involved scrotal flap-based neophalloplasty and Vantris injections to enhance neophallus volume.

RESULTS

A robotic-assisted harvest of a pedicled appendix graft was performed, meticulously preserving vascularity, and the graft was implanted in the neophallus position using advanced microsurgical techniques. The procedure was successful, and the patient awaits the next stage for an end-to-end anastomosis of the perineal urethrostomy with the proximal appendix ostium.

CONCLUSIONS

Penile agenesis remains a significant challenge in reconstructive urology. Considering patient's desire to urinate standing, we present a minimally invasive technique where a neourethra was created using a free appendix flap. This approach integrates functional and cosmetic goals, offering a novel solution to this complex condition.

17:02 - 17:10

Discussion

S05: CASE REPORTS 1

Moderators: Berk Burgu (TR), Amane Lachkar (FR)

Parallel Programme on Wednesday 3, September 2025, 15:30 - 16:10

15:30 - 15:34

S05-1 (CP)

NEOPHALOPLASTY IN CLOACAL EXSTROPHY: SHORT AND LONG-TERM OUTCOMES

Jovelino Quintino De Souza LEAO ¹, Fernanda Ghilardi LEAO ¹, Priscila Cardoso Braz ASCAR ¹, Giselle Machado Campos OLIVEIRA ¹, Luciano Silveira ONOFRE ¹ and Marc-David LECLAIR ²

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PURPOSE

Penile anatomy in cloacal exstrophy could be severely compromised. In hypoplastic penis, including intravesical phallus, some atypical surgical procedures become necessary. The aim of this study is to describe three cloacal exstrophy patients treated by penile surgical reconstruction using parascrotal flaps for neophalloplasty and Kelly's procedure. Long and short-term follow-up were compared.

MATERIAL AND METHODS

Case #1

Sixteen-year-old boy with severely compromised penis undergone neophalloplasty, using parascrotal flaps (Bianchi), at age of 7 years. By 14 years, he was submitted to Kelly's procedure to mobilize two hypoplastic hemiphallus, put them inside of cutaneous neophallus. Penis development and appearance are satisfactory; buccal mucosal graft was used to resurface the glans. He has regular erections, and is under psychological support.

Case #2

Ten-year-old boy with intravesical phallus undergone Kelly's procedure by two years, mobilizing ectopic phallus displaced on caudal bladder plate. Phallic repositioning on abdominal surface, penile coverage was done using parascrotal flaps (Bianchi). With hormonal stimulation, penile development and appearance are satisfactory, he is on psychological support.

Case #3

Two-year-old boy with intravesical phallus undergone Kelly's procedure by one and half years. Phallic repositioning achieved on abdominal surface, penile coverage using skin flaps from neophallus constructed on neonatal closure, with redundant abdominal skin. His family is satisfied with penile appearance.

RESULTS

Parascrotal flaps combined with radical soft tissue mobilization are unique to achieve reasonable cosmetic and functional penile results. All patients had phallic appearance improved. Outcomes on short-term and long-term are maintainable. Two adolescents are very satisfied with their penile appearance.

CONCLUSIONS

Neophalloplasty in cloacal exstrophy patients represents a significant surgical challenge. Short-term and long-term outcomes have successfully improved. A multidisciplinary approach with physical, psychological, and social aspects of care is essential for outcomes and the quality of life for these individuals.

15:34 - 15:38

S05-2 (CP)

SUCCESSFUL MICROSURGICAL PENILE REIMPLANTATION IN AN INFANT: SURGICAL TECHNIQUE, POSTOPERATIVE CARE, AND OUTCOME.

Edison Daniel SCHNEIDER-MONTEIRO, Marcio Dias GUILHERME FILHO, Lucas Henrique CAVALHEIRO SANCHES, João Vitor LUGUI CARVALHO, Andre Meirelles DOS SANTOS and Tiago Moura RODRIGUES
PUC CAMPINAS, UROLOGY, Campinas, BRAZIL

INTRODUCTION

Traumatic penile amputation is a rare surgical emergency and, therefore, poses a challenge for surgeons due to the limited number of cases, the delicate surgical technique required, and the lack of a standardized postoperative care protocol.

PATIENT

A 9-year-old patient was treated at our tertiary care center following a genital trauma caused by a sharp object. The accident occurred at home when the patient fell and came into direct contact with shattered toilet fragments. Initial care was provided at an external facility, where clinical stabilization and bleeding control were performed. A severe injury was identified, with an incomplete amputation at the base of the penis, maintaining only a small cutaneous tissue attachment. Microsurgical penile reimplantation was performed eight hours after the accident.

Postoperatively, the patient underwent daily hyperbaric oxygen therapy. Intravenous alprostadil, oral acetylsalicylic acid, tadalafil, and topical vitamin E were administered as part of the treatment.

RESULTS

Postoperative care was provided over 17 days of hospitalization. After 27 days, a postectomy was performed to remove edematous fibrotic tissue, ensuring an adequate esthetic outcome. The patient's clinical evolution has been satisfactory thus far, with proper urinary function and satisfactory nocturnal erections.

CONCLUSIONS

Several studies have suggested a six-hour window following amputation as the golden period for achieving a favorable surgical outcome. However, procedures performed beyond 24 hours post-injury have also demonstrated success. Therefore, all efforts should be directed toward the management of this condition, including the appropriate preservation of the amputated organ until reimplantation, the meticulous execution of the microsurgical procedure, and comprehensive postoperative care for the reimplanted organ.

REVOLUTIONARY TREATMENT OF PENILE KELOID AFTER CIRCUMCISION: A COMBINED APPROACH WITH BRACHYTHERAPY AND HYPERBARIC OXYGEN THERAPY WITH SURGERY

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PURPOSE

Keloid formation along the incision line is a very rare complication of circumcision. Various treatments, including surgery, radiation, topical corticosteroids, and intralesional triamcinolone injections, have been used, but no standardized protocol exists. Half of the cases may recur within 6-12 months. On the other hand, brachytherapy has gained popularity in recent years as an adjunctive treatment due to its high recurrence-free survival rates in keloid scars.

This case report discusses the novel use of brachytherapy+hyperbaric oxygen therapy in conjunction with surgery for a child with a recurrent circumcision line keloid.

MATERIAL AND METHODS

An 11-year-old male with no co-morbidities presented with recurrent keloid formation along his circumcision incision line. He had undergone circumcision at age 2 and developed a keloid two months later. Despite two surgical keloid excisions at ages 6 and 8, recurrence occurred within 3 months after both surgeries. His examination revealed a large circular keloid extending from the coronal sulcus to the penile shaft. No other urological abnormalities were found.

RESULTS

During excision, six brachytherapy tubes were placed—three on each side of the corpus cavernosum. Brachytherapy started within 24 hours, delivering 2.5 Gy over two days in four fractions. The patient also received 20 days of hyperbaric oxygen therapy of which each session lasted 120 minutes (with 5-minute breaks every 20 minutes) at a pressure of 2.4 ATA (1 ATA = 760 mmHg).

At the 8-month follow-up, there was no recurrence, and the incision line appeared natural.

CONCLUSIONS

Keloid formation along the circumcision incision line is rare and has a high recurrence rate despite various treatments. In this case, a combination of brachytherapy, hyperbaric oxygen and surgical excision led to complete regression, with no recurrence at 8 months.

CONGENITAL PREPUBIC SINUS IS NOT A DUPLICATION OF THE URETHRA

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PURPOSE

Congenital prepubic sinus (CPS) is a rare anomaly with a midline opening in the prepubic area or dorsum of the penis. The embryological origins are unclear, with some suggesting it may be a form of urethral duplication, while others proposing a localized aberration of midline fusion. We reviewed our experience and the literature to identify the more plausible origin theory.

MATERIAL AND METHODS

We conducted a retrospective case note review, including clinical, radiological, surgical and histological findings. Additionally, we performed an extensive literature review to identify all published cases.

RESULTS

Between 2012 and 2024, three cases (all males) were identified, aged 10-14 years, presenting with intermittent sinus discharge. Examination, radiology and cystoscopy found no communication with the urinary tract, including the urethra. In one patient, MRI revealed an intraabdominal component. Sinus excision was performed in all cases. In one patient the pelvic/intraabdominal element extending to the umbilicus was also excised. We observed that the sinus trajectory was very close and densely adherent to the pubis in all cases. Failure to excise the entire tract has resulted in a persistent, yet asymptomatic, cyst.

Histology demonstrated the presence of squamous and transitional epithelium confirming a relationship to the urinary tract.

Since the first CPS report in 1987, 81 cases (almost equal gender distribution) have been reported, with presentation age ranging from 2 days to 22 years. The majority presented with prepubic sinuses and intermittent discharge. Only 6% had a connection to the urinary tract and 4% had other genital anomalies.

CONCLUSIONS

The absence of communication between the CPS and the urinary tract in our cases, as well in 94% of cases reported in the literature, combined with extension to the umbilicus, suggests CPS is a distinct entity, more consistent with an aberration of midline fusion than urethral duplication. We concur that the intraabdominal component requires resection.

RESOLVING PERSISTENT INTRAVESICAL CLOTS WITH ALTEPLASE (TPA) IN A CHILD WITH LEUKEMIA

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INTRODUCTION

Acute Lymphoblastic Leukemia (B-ALL) is a common pediatric malignancy treated with intensive chemotherapy. Complications such as hemorrhagic cystitis and urinary retention due to clots can arise, particularly in patients with risk factors like BK-virus infection. Treatment options for clot removal include trans-urethral or suprapubic bladder irrigation and, if unsuccessful, endoscopic management under general anesthesia with a resectoscope. This report describes a non-operative approach to managing intravesical clots in a pediatric patient.

CASE

A 15-year-old boy with pancytopenia, undergoing chemotherapy for B-ALL was consulted for gross hematuria and urinary retention. Ultrasound revealed a large intravesical clot obstructing the urinary outlet. Initial management with catheter placement and saline irrigation failed the next day, due to clot blocking the catheter. Repeated catheter changes and irrigation attempts were also ineffective.

TECHNIQUE

As a final intervention, after platelet transfusion, 10mg of alteplase was instilled into the bladder through an 18Fr. 3-way Foley catheter and retained for 15 minutes with the catheter clamped. Subsequent saline irrigation disintegrated the clot and removal of the catheter enabled spontaneous voiding of debris.

Post-intervention ultrasound showed a mass reduction in clot burden, with only minimal residue. Despite ongoing hematuria for a few days, the patient gradually recovered without further urinary retention or massive bleeding. His urine sample tested positive for BK-virus, likely causing hemorrhage.

CONCLUSION

Intravesical alteplase, a fibrinolytic agent, was effective in dissolving persistent clots unresponsive to standard measures in a child with B-ALL. This strategy may decrease the need for cystoscopy and invasive clot removal, procedures that could exacerbate bleeding in thrombocytopenic patients.

BLADDER FISTULA REPAIR WITH VAC AND DEFLUX

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PURPOSE

Patients with bladder augmentation and bladder neck repair have a high risk of developing bladder stones. Treatment options are endoscopic lithotripsy or open lithotomy. Our 15-year-old patient with Lipo-Myelomeningocele had bladder augmentation, Mitrofanoff, and bladder neck repair in 2019. Five years later, cystoscopy due to haematuria and painful CIC revealed a 3 cm bladder stone.

MATERIAL AND METHODS

Open lithotomy at the bowel part of the bladder, with a double layer closure, was performed. The bladder was drained postoperatively. Unfortunately, the catheter obstructed on the third night after surgery which caused a bladder filling of 800 ml. A few days later urinary leakage through the surgical incision was noticed. Despite an attempt to close the bladder, a vesicocutaneous fistula developed.

RESULTS

Even with two open catheters, most urine drained through the 2 mm fistula, macerating the skin around the opening. Learning from bowel fistula experiences, we initiated Vacuum Assisted Closure (VAC) 10 days after the second operation. This kept the skin dry, improving healing conditions. After 3 months of VAC treatment (50 - 100mmHg), with change of dressings in the polyclinic twice a week, the fistula shrank, and leakage reduced to 30 ml/24 hours. It increased if VAC was removed. After injecting bulking agent via cystoscopy close to the fistula neck, the leakage completely stopped one week later.

CONCLUSIONS

VAC for vesicocutaneous fistula can be successful in difficult-to-treat cases. It also allows patients to be at home in between change of dressings. The combination with Deflux from inside the bladder proved to be a winning concept.

CERVICAL POLYPS IN GIRLS - REPORT OF THREE CASES

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PURPOSE

To present cases of 3 girls with cervical polyps treated in 2024.

MATERIAL AND METHODS

We retrospectively analyzed the medical records, histopathology results and the follow-up plan.

RESULTS

Case 1: 5-month old girl with OHVIRA syndrome. Cystoscopy and vaginoscopy was performed due to urogenital defect. Polyp of left uterine cervix was found accidentally and was removed. Histopathological examination revealed radical resection of Mullerian papilloma. Follow-up period - 3 months. Control vaginoscopy is planned.

Case 2: 11-year old menstruating girl was admitted to hospital due to prolapse of pathological mass from vagina orifice. Oncological evaluation with abdomen MRI was performed. Giant cervical polyp without metastases was found. Vaginoscopy with polyp removal was performed. Endocervical polyp was diagnosed in histopathology. Follow-up period - 2 months. Control vaginoscopy is planned.

Case 3: 9-year old girl with previous history of biopsy of cervical polyp (Mullerian papilloma) at the age of 15 months, subjected only to ultrasound observation in follow-up. Admitted to hospital due to vaginal bleeding and polyp prolapse. Giant cervical polyp was removed during vaginoscopy. Histopathological examination revealed adenocarcinoma, HPV-independent, clear cell type. No metastases were revealed on MRI and PET-CT. Amputation of uterine cervix and ilio-obturator lymph nodes biopsy was performed and no malignant changes were found. Follow-up period - 13 months. Vaginoscopy performed every 3 months doesn't reveal malignant changes.

CONCLUSIONS

Mullerian papilloma polyps should be removed radically due to risk of malignancy. Monitoring including vaginoscopy of girls after removing benign cervical polyps is mandatory.

S06: ONCOLOGY

Moderators: Thomas Blanc (FR), Haluk Emir (TR)

Parallel Programme on Wednesday 3, September 2025, 16:10 - 17:10

16:10 - 16:13

S06-1 (OP)

★ SEEING RED: GUIDING EARLY UROLOGIC CONSULTATION IN PEDIATRIC HEMORRHAGIC CYSTITIS

Catherine ROBEY ¹, Michelle HIGGINS ², Mohammad ELMOJTABA GUMMA ², Tanisha MARTHESWARAN ², David HEAP ², Jason YANG ², Ming-Hsien WANG ³ and Chad CRIGGER ²

1) John Hopkin University, Robert D. Jeffs Division of Pediatric Urology, Baltimore, USA - 2) Johns Hopkins University, Robert D. Jeffs Division of Pediatric Urology, Baltimore, USA - 3) John Hopkins University, Robert D. Jeffs Division of Pediatric Urology, Baltimore, USA

PURPOSE

Pediatric hemorrhagic cystitis (HC) is an understudied yet highly morbid condition. The lack of identified risk factors for severe cases has contributed to the absence of standardized protocols to assist hematology-oncology providers when to initiate timely consultation. This study identified risk factors for progression to operative intervention in pediatric HC and informed a simple decision-aid to guide early urologic consultation.

MATERIAL AND METHODS

This retrospective review included all inpatients at our institution from 2014-2024 diagnosed with HC grade II or higher. Demographics, primary diagnosis, age at HC onset, urine virology, chemotherapy/radiation exposure, bone marrow transplant (BMT) status, HC grade/duration, and urologic consultation/intervention were collected. Exclusion criteria included patients with concurrent urinary tract infection or upper tract bleeding, as well as those with incomplete data. Chi-square and Fisher's exact tests were used to identify risk factors necessitating operative management

RESULTS

In our cohort of 65 patients, the median time from HC onset to urologic consultation was 20 days (range 0-38), and from consultation to intervention was 3 days (range 0-36). Patients with prior BMT were more likely to require operative management if they had prior pelvic radiation ($p=0.014$) or exposure to both busulfan and methotrexate ($p=0.018$). For patients without BMT, risk factors included positive BK virus ($p=0.03$) or exposure to 3 or more bladder-toxic chemotherapies ($p=0.001$).

			History of BMT?			
		Yes		No		
		Pelvic XRT?		BK Virus?		
	No	Yes		Yes	No	
	Busulfan+MTX?	Early Uro Consult (p=0.014)		Early Uro Consult (p=0.03)	3+ Bladder Toxic Chemo?	
No	Yes				Yes	No
Provider Discretion	Early Uro Consult (p=0.018)				Early Uro Consult (p=0.001)	Provider Discretion

CONCLUSIONS

This is the first study to suggest a clinical decision-making tool for pediatric HC. Despite a small cohort, this simple framework may be implemented and refined with larger datasets to improve risk stratification.

16:13 - 16:18

S06-2 (VP)

★ ULTRASOUND-ASSISTED CLOT EVACUATION (U-ACE) - DEMONSTRATION OF FEASIBILITY

Aisha SIEBERT, Peter CAI and Michael KURTZ

Boston Children's Hospital, Pediatric Urology, Boston, USA

INTRODUCTION

Cystoscopic clot evacuation has a fundamental limitation – once the cystoscope and sheath are positioned, the optical component must be removed to free the sheath lumen. Aspiration is then iterative and blind, guided only by tactile feedback and inspection of the effluent. This risks mucosal injury if the bladder wall is drawn into the sheath by suction, and inefficacy if the clot has moved and aspirations fail to yield clot. We present the first report, in adults or children, of the use of transabdominal ultrasound to guide sheath positioning during clot evacuation.

METHODS

We performed this procedure for two adolescents. Videos from one are shown, featuring technical details around safety and efficiency. We used a curved 5-1 MHz probe to image the bladder continuously. We were able to assess bladder fullness, sheath position, and clot position distinctly.

RESULTS

In both cases the bladders were cleared of clot using this technique. We found that there are important considerations, such as the presence of air at the bladder dome. Bladder imaging of the floor remains distinct.

We observed that clots move when the telescope is removed and a small amount of fluid exits. This explains some of the inefficiency with the blind technique, but we could easily pursue these clots with a sheath under ultrasound guidance.

CONCLUSION

We show that use of ultrasound has features that could contribute to patient safety, confirming the presence of fluid and lack of contact with the bladder mucosa, and efficiency, allowing each aspiration to withdraw clot.

16:18 - 16:24

Discussion

16:24 - 16:27

S06-3 (OP)

★ ORGAN-SPARING SURGERY WITH BRACHYTHERAPY COMPARED TO TRADITIONAL LOCAL THERAPY STRATEGIES - SURGICAL RESECTION AND/OR RADIOTHERAPY - FOR BLADDER-PROSTATE RHABDOMYOSAROMA: A REPORT FROM THE EUROPEAN PAEDIATRIC SOFT TISSUE SARCOMA STUDY GROUP (EPSSG)'S RMS2005 TRIAL

Naima SMEULDERS¹, Florent GUERRIN², Tim ROGERS³, Federica DE CORTI⁴, Sheila TERWISSCHA VAN SCHELTINGA⁵, Gabriela GUILLEN BURRIEZA⁶, Mark GAZE⁷, Pei S LIM⁷, Ilaria ZANETTI⁸, Beatrice COPPADORA⁸, Olga SLATER⁹, Trung NGUYEN⁹, Veronique MINARD-COLIN¹⁰, Julia CHISHOLM¹¹, Hans MERKS⁵, Gianni BISOGNO¹² and Helene MARTELLI²

1) Great Ormond Street Hospital NHS Trust, Department of Paediatric Urology, London, UNITED KINGDOM - 2) Hopital Bicetre, Chirurgie Pediatrique, Paris, FRANCE - 3) Bristol Royal Hospital for Children, Department of Paediatric Surgery, Bristol, UNITED KINGDOM - 4) University Hospital of Padua, Paediatric Surgery Unit, Padua, ITALY - 5) Princess Maxima Centrum, Department of Paediatric Surgery, Utrecht, NETHERLANDS - 6) Hospital Infantil Universitari Vall d'Hebron, Department of Paediatric Surgery, Barcelona, SPAIN - 7) University College London Hospitals, Department Clinical Oncology, London, UNITED KINGDOM - 8) Universitat degli Studi di Padova, Department for Women and Children, Padova, ITALY - 9) Great Ormond Street Hospital for Children, Department of Paediatric Oncology, London, UNITED KINGDOM - 10) Institut Gustave Roussy, Department of Pediatric and Adolescent Oncology, Paris, FRANCE - 11) Royal Marsden Hospital, Department of Paediatric Oncology, Sutton, UNITED KINGDOM - 12) Universitat degli Studi di Padova, Department of Women and Children, Padova, ITALY

PURPOSE

During the EpSSG's RMS2005 trial, organ-sparing-surgery with brachytherapy became the local-therapy (LT) of choice for suitable patients with bladder-prostate rhabdomyosarcoma (BP-RMS), offering a first opportunity to compare this to traditional LT modalities for BP-RMS, namely surgical-resection and/or radiotherapy.

MATERIAL AND METHODS

With consent, all patients with BP-RMS without nodal/metastatic-spread prospectively enrolled on RMS2005 (October2005-December2016) were categorized by their LT, differentiating organ-sparing from organ-depleting

surgery (OSS vs ODS) and brachytherapy (BT) from external-photon/proton-beam-radiotherapy (EBRT). Statistics: survival-probability calculated by Kaplan-Meier; patient-demographics, tumour-characteristics, treatment, outcomes explored by univariate and multivariate analysis(SAS9.4). Tumour-progression(tumour-growth or <1/3 tumour-reduction to first-line chemotherapy), relapse or death were considered events for progression-free-survival(PFS) and all deaths for overall-survival(OS).

RESULTS

The 176 patients were aged 10days-21.8years, median 2.5years, 4 alveolar-histology. Follow-up extended to 12.5years(median 6.5years). 5yr-PFS was 80.3%(95%CI:73.6-85.5%; 34events) and 5yr-OS was 90.7%(95%CI:85.3-94.2%, 17deaths).

5yr-PFS was similar($p=0.56$) for patients offered BT+/-OSS [$n=54$, 2(3.7%) aged ≥ 10 years, 57.4%tumours ≤ 5 cm-diameter], surgery alone [$n=40$, all aged < 10 years, 67.5%tumours confined to bladder], EBRT alone [$n=22$, 4(18.2%) aged ≥ 10 years, 63.6%tumours > 5 cm-diameter, 31.8%prostate-location] and any other surgery+radiotherapy [$n=48$, 7(14.6%) aged ≥ 10 years, 87.5%tumours > 5 cm-diameter, 37.5%prostate-location].

5yr-OS was significantly affected by LT($p=0.019$), being highest in patients suitable for surgery alone (100%) or BT+/-OSS (98.1%;95%CI:87.4-99.7%). Those with local tumour progression/relapse after EBRT failed to re-achieve complete remission: 5yr-OS 81.8%(95%CI:58.5-92.8%) for EBRT alone, 85.3%(95%CI:71.6-92.7%) for surgery+radiotherapy.

On univariate analysis, survival was also significantly impacted by patient age ≥ 10 ys and a prostatic tumour-location. On multivariate Cox-modelling only a prostate-location remained significant (5yr-PFS: $p=0.020$;5yr-OS: $p=0.0018$). Delaying LT to after cycle 7 of chemotherapy did not significantly impact 5yr-PFS($p=0.59$) or 5yr-OS($p=0.29$).

CONCLUSIONS

Different LT modalities for BP-RMS without nodal/metastatic spread carry a similar risk of events, poor salvage of tumour progression/relapse after EBRT significantly impacting 5yr-OS. Organ-sparing techniques, such as BT+/-OSS, should be favoured and may be delayed for chemotherapy-responsive tumours.

16:27 - 16:30

S06-4 (OP)

THE IMPORTANCE OF SURGICAL NODAL STAGING IN RHABDOMYOSARCOMA OF THE BLADDER AND/OR PROSTATE WITH OR WITHOUT NODAL OR METASTATIC SPREAD. A REPORT FROM THE EUROPEAN PAEDIATRIC SOFT TISSUE SARCOMA STUDY GROUP (EPSSG).

Naima SMEULDERS ¹, Sheila TERWISSCHA VAN SCHELTINGA ², Florent GUERRIN ³, Tim ROGERS ⁴, Federica DE CORTI ⁵, Gabriela GUILLEN BURRIEZA ⁶, Ross CRAIGIE ⁷, Patrizia DALL'IGNA ⁸, Mark GAZE ⁹, Pei S LIM ⁹, Raquel DAVILA FAJARDO ¹⁰, Ilaria ZANETTI ¹¹, Beatrice COPPADORA ¹¹, Olga SLATER ¹², Trung NGUYEN ¹², Veronique MINARD-COLIN ¹³, Helen REES ¹⁴, Julia CHISHOLM ¹⁵, Hans MERKS ¹⁶, Gianni BISOGNO ¹¹ and Helene MARTELLI ¹⁷

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Surgery, Padua, ITALY - 6) Hospital Infantil Universitari Vall d'Hebron, Department of Paediatric Surgery, Barcelona, SPAIN - 7) Royal Manchester Children's Hospital, Department of Paediatric Surgery, Manchester, UNITED KINGDOM - 8) Universitat degli Studi di Padova, Department of Paediatric Surgery, Padua, ITALY - 9) University College London Hospitals, Department Clinical Oncology, London, UNITED KINGDOM - 10) Princess Maxima Centrum, Department Clinical Oncology, Utrecht, NETHERLANDS - 11) Universitat degli Studi di Padova, Department for Women and Children, Padova, ITALY - 12) Great Ormond Street Hospital for Children, Department of Paediatric Oncology, London, UNITED KINGDOM - 13) Institut Gustave Roussy, Department of Paediatric Oncology, Paris, FRANCE - 14) Bristol Royal Hospital for Children, Department of Paediatric Oncology, Bristol, UNITED KINGDOM - 15) Royal Marsden Hospital, Department for Women and Children, Sutton, UNITED KINGDOM - 16) Princess Maxima Centrum, Department of Paediatric Oncology, Utrecht, NETHERLANDS - 17) Hopital Bicetre, Department of Paediatric Surgery, Paris, FRANCE

PURPOSE

Risk stratification of patients to treatment algorithms for rhabdomyosarcoma (RMS) requires accurate staging, with histological nodal assessment of critical importance for specific tumour sites. This report explores the value of surgical nodal staging in bladder-prostate rhabdomyosarcoma (BP-RMS).

MATERIAL AND METHODS

With consent, all patients with BP-RMS prospectively enrolled in EpSSG's RMS2005 and MTS2008 trials (October 2005-December 2016) were reviewed for the staging methodology and outcome. Statistics: survival-probability calculated by Kaplan-Meier; Fisher's exact testing explored differences between independent variables.

RESULTS

Significant differences in 5-year overall (5yr-OS) and progression-free survival (5yr-PFS) were observed for the 224 patients with BP-RMS of different Tumour-Nodal-Metastatic (TNM) stages ($p < 0.0001$).

	N	Events	5-yr PFS (95%CI)	Deaths	5-yr OS (95%CI)
N0 M0	181	36	79.8 (73.1-85.0)	18	90.4 (85.0-93.9)
N0 M1	9	2	77.8 (36.5-93.9)	2	77.8 (36.5-93.9)
N1 M0	18	6	72.2 (45.6-87.4)	5	77.8 (51.1-91.0)
N1 M1	16	11	37.5 (15.4-59.8)	11	35.2 (13.3-58.2)
Total	224	55	$p < 0.0001$	36	$p < 0.0001$

Almost all nodal staging was by imaging, with only 7 patients undergoing surgical nodal assessment at presentation and 48 at delayed surgery (no sampling despite a laparotomy/other surgery in 120). Six patients considered N0 by imaging had RMS in nodes sampled after 5-6 cycles of chemotherapy (triggering post-operative EBRT for 5); eight patients deemed N1 had negative nodal pathology after 4-8 cycles of chemotherapy. Surgical nodal assessment did not impact the occurrence of loco-regional events (12/55, 21.8%) as compared to those staged by imaging alone (28/166 16.9%, Fisher's exact $p = 0.423$). Adding FDG-PET imaging to explore nodal and/or metastatic spread did not significantly reduce subsequent disease-related events: 12/66 (18.2%) compared to 42/156 (26.9%) not imaged by FDG-PET (Fisher's exact $p = 0.176$).

CONCLUSIONS

In contrast to other sites, surgical nodal sampling, undertaken in 24.6% overall and only 3.1% at presentation, does not significantly impact outcome of BP-RMS.

MANAGEMENT PATTERNS OF ADOLESCENT MALES WITH STAGE III NON-SEMINOMATOUS TESTICULAR GERM CELL TUMORS

Raymond YONG ¹, David HINOJOSA-GONZALEZ ¹, Troy LA ², Soham DATAR ², Allan ZHANG ², Nora BROADWELL ¹ and Niccolo PASSONI ¹

1) Texas Children's Hospital, Urology, Houston, USA - 2) Baylor College of Medicine, Urology, Houston, USA

PURPOSE

Following serum tumor marker normalization after chemotherapy for Stage III non-seminomatous germ cell tumors (NSGCT), resection of residual disease is recommended to rule out teratoma. Low pathology concordance between retroperitoneal (RP) and other metastatic sites supports this approach. Adolescents often present with more advanced disease and worse outcomes than adults, highlighting the need for refined management. This study compares residual mass resection rates and pathology findings between adolescents and adults with Stage III NSGCT.

MATERIAL AND METHODS

A retrospective review of 194 NSGCT patients treated from 2000 to 2024 was conducted. Patients aged ≥ 11 years were analyzed, stratified into adolescents (11–18 years) and adults (>18 years). Statistical significance was assessed using chi-square tests.

RESULTS

Of 194 patients, 62 (32%) were adolescents, and 109 (56%) were adults. Stage III disease was found in 23% of adolescents and 77% of adults. Recurrence occurred in 15% of adults but none in adolescents ($p=0.17$). Residual mass resection was performed in 40.9% of Stage III patients, more frequently in adolescents (63.6%) than adults (33.3%, $p=0.2$). RPLND pathology showed necrosis (44.4%), viable tumor (27.8%), and teratoma (27.8%). Necrosis was more common in adolescents (57.1%) than adults (36.4%, $p=0.5$). All extra-RP resections involved adolescents including three lung resections and one partial hepatectomy, primarily identifying teratoma.

CONCLUSIONS

Adolescents underwent more frequent residual mass resections and surgeries than adults, with a trend toward higher necrosis and teratoma rates. These findings suggest adolescents may present with more aggressive disease, warranting tailored surgical strategies and improved risk assessment.

CHANGES IN MALE GERM CELL TUMOR INCIDENCE RATES OVER TIME AND DIFFERENCES BETWEEN ETHNIC GROUPS

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1) Texas Children's Hospital, Urology, Houston, USA - 2) Baylor College of Medicine, Urology, Houston, USA

PURPOSE

Understanding demographic disparities in germ cell tumors (GCTs) is crucial for timely diagnosis and treatment. Recent SEER data suggests race and ethnicity may influence cancer-specific mortality in males with GCTs.

MATERIAL AND METHODS

This retrospective study analyzed GCT incidence and outcomes in U.S. males aged 0-26 from 1975-2021 using the SEER database. Data was stratified by race/ethnicity, urban/rural status, income, and pubertal stage. Incidence rates were calculated per million.

RESULTS

GCT incidence increased significantly across income levels but showed no statistical differences between income categories. Urban ($p<0.0001$) and rural ($p=0.04$) populations also had significant incidence increases. Pubertal (10-18 years) and post-pubertal (19-26 years) males experienced rising rates ($p<0.0001$), while infants (0-3 years) and pre-pubertal males (4-9 years) did not. Hispanic and NH Asian pubertal males saw the highest increases ($p<0.0001$, $p=0.002$), while NH Black and NH White males experienced decreases ($p=0.03$, $p=0.01$). Hispanic and NH Asian post-pubertal males also showed rising incidence ($p<0.0001$, $p=0.001$). NH Black males had significantly lower survival rates than all other groups.

CONCLUSIONS

Significant sociodemographic disparities exist in GCT incidence and survival outcomes. These findings underscore the need for targeted clinical strategies and further research into environmental and genetic factors contributing to rising incidence rates. Cancer registries play a vital role in advancing our understanding of GCT epidemiology and guiding better care for affected populations.

HOW FAR CAN WE EXTEND THE LIMITS OF ROBOTIC SURGERY FOR WILMS TUMOR, WITH RESPECT OF THE ONCOLOGICAL SURGICAL PRINCIPLES?

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PURPOSE

Despite the growing application of MIS in paediatric oncology, open radical nephrectomy (ORN) remains the gold standard for Wilms tumor (WT). Umbrella Protocol criteria for laparoscopic nephrectomy have been challenged by many studies. Based on our previous experience in paediatric oncology, we reported criteria for the robotic approach in WT.

We aimed to redefine more precise criteria for robotic assisted radical nephrectomy (RARN) for presumptive WT in the light of our single-center experience.

MATERIAL AND METHODS

A prospective institutional analysis was performed including children operated on radical nephrectomy (RN) with presumptive diagnosis of WT from 2016 to 2023. To describe the proportion between the preoperative tumor volume and the patient's age, we calculated a ratio between a 3D-slicer volumetry of (tumor + normal kidney) over estimated patient blood volume.

RESULTS

60 RN were performed, including 23 RARN (38%) and 37 ORN. Tumor volume at surgery was smaller in the RARN group ($p < 0,0004$). There was no difference between groups regarding oncological outcomes. One child ($R=0,51$) with liver infiltration had positive margins and developed pleural metastasis. All the other robotic cases were performed with a volumetry ratio under 0,35 and without conversion unless thrombus or midline crossing. Among the ORN with a volumetry ratio $< 0,35$, open approach was preferred due to organizational issues in three children.

CONCLUSIONS

Large tumor with a volumetry ratio $> 0,35$, despite the absence of renal vein thrombus, midline crossing or liver infiltration are formal contraindications for a robotic approach. Almost 40% of presumptive WT can be safely operated with robotic approach.

NEPHRON- SPARING SURGERY FOR PEDIATRIC RENAL TUMORS AFTER CENTRALIZATION OF PEDIATRIC ONCOLOGY CARE IN THE NETHERLANDS: IMPROVED OUTCOMES WITH 3D MODELING

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PURPOSE

In this retrospective single center cohort study, we report the surgical outcomes of nephron-sparing surgery (NSS) for Wilms' tumor (WT) patients since centralization of pediatric oncology care in the Netherlands, and implementation of technological advancements. Therewith we describe the influence of experience and innovations for this type of surgery.

METHODS

We retrospectively assessed all NSS procedures from January 1st 2015 until January 1st 2024 for patients who underwent surgery for a renal tumor at the Princess Máxima Center for Pediatric Oncology. Data were gathered on patient characteristics, diagnostic information, radiological characteristics, surgical technique and use of innovations, postoperative outcome, administered treatment and surgical follow-up.

RESULTS

36 patients (58% female, 42% male) were included with a total of 43 NSS procedures. Mean (SD) age at diagnosis was 33.3 (23.1) months. 16 procedures were performed without 3D models, of which 3 (18.8%) resulted in an unexpected positive margin. 27 procedures were preoperatively planned with a 3D model with one (3.7%) unexpected anticipated positive margins ($p = 0.101$). Six (13.9%) procedures had post-operative complications including five urine leakages, one chyle leakage and two (reversible) acute kidney insufficiency. Four patients received a re-intervention (JJ-stent or drain).

CONCLUSIONS

In this retrospective single center cohort study, we show a good surgical outcome after NSS for children with renal tumors after the implementation of 3D models. This study can act as a baseline cohort to harmonize preoperative assessment, intraoperative technique and implementation of innovative surgical technology for further expansion of NSS for WT patients.

MINIMALLY INVASIVE APPROACH TO RETROPERITONEAL LYMPH NODE DISSECTION: A BI-INSTITUTIONAL CASE SERIES

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PURPOSE

Retroperitoneal lymph node dissection (RPLND) is a critical surgical procedure for staging and managing paratesticular rhabdomyosarcoma (PT-RMS) in pediatric patients. While minimally invasive surgical (MIS) approaches, including laparoscopic and robot-assisted techniques, are well-documented in adult cases, their utilization in pediatric populations remains limited. This study evaluates the outcomes of MIS RPLND in pediatric patients with PT-RMS across two tertiary care centers

MATERIAL AND METHODS

A retrospective analysis was conducted on patients who underwent MIS RPLND for PT-RMS between 2012 and 2024. Data collected included demographics, tumor characteristics, neoadjuvant chemotherapy, operative details, and postoperative outcomes. Descriptive statistics were used to summarize findings.

RESULTS

Eight patients (median age 12.6 years, IQR: 11.6, 13.8) underwent MIS RPLND, with equal distribution between laparoscopic and robot-assisted approaches. One patient (12.5%) received neoadjuvant chemotherapy. The median operative time was 436 minutes (IQR: 418, 450), with a median lymph node yield of 13 nodes (IQR: 11, 18). Three patients had positive lymph nodes. The median hospital stay was 2.5 days (IQR: 2, 3), with no postoperative complications reported. Over a median follow-up of 71.5 months (IQR: 41.3, 119), no recurrences were observed.

CONCLUSIONS

MIS RPLND is a safe and effective surgical option for managing PT-RMS in pediatric patients. Broader adoption and further research involving larger cohorts are warranted to validate these findings and refine surgical practices.

S07: BASIC RESEARCH 2

Moderators: Alexander Turner (UK), Evalynn Vasquez (USA)

Parallel Programme on Wednesday 3, September 2025, 17:30 - 18:30

17:30 - 17:34

S07-1 (OP)

GENETIC CONTRIBUTORS TO HYPOSPADIAS: IDENTIFYING VARIANTS IN LHFP, TTC37, OBSL1, AND EIF2B5 IN FAMILIAL CASES

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PURPOSE

To identify genetic variants associated with hypospadias in familial cases, a congenital condition with significant genetic underpinnings but largely unexplored specific causes. Understanding these genetic contributors could improve diagnosis, genetic counseling, and targeted interventions.

MATERIAL AND METHODS

We conducted a familial study using a biobank, collecting biospecimens from 27 subjects across seven families with a history of hypospadias. Whole genome sequencing (WGS) was performed to identify potential pathogenic variants. GEMINI bioinformatics tools were used to analyze and assess variant segregation within families.

RESULTS

Analysis revealed several pathogenic variants linked to hypospadias. A TTC37 variant was associated with coronal hypospadias in both the patient and his father. An OBSL1 variant was identified in the patient, father, and brother with scrotal hypospadias. A EIF2B5 variant was found in the father, despite no signs of Leukoencephalopathy. Additionally, an autosomal dominant INO80 variant appeared in multiple family members, and a homozygous COL6A3 variant was observed in the patient's brother with increased protein expression. Furthermore, splice site variants in LHFP and ACADVL were identified in affected family members, indicating a complex genetic landscape for hypospadias inheritance.

CONCLUSIONS

This study uncovers multiple genetic variants associated with hypospadias, highlighting the condition's genetic complexity. These findings could aid genetic counseling and the development of targeted interventions. Future studies should further investigate the functional role of these variants in hypospadias.

ZNF511 ACTS AS A RISK FACTOR FOR NEXT-GENERATION HYPOSPADIAS VIA DECREASING RIBOSOME BIOSYNTHESIS IN TROPHOBLAST CELLS WITHIN THE PLACENTA

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PURPOSE

The formation of hypospadias is affected by prenatal nutrition and hormone levels. The placenta is the sole source of nutrients for the fetus and secretes a variety of essential hormones and cytokines. However, the precise role of placental function in this process remain unknown.

MATERIAL AND METHODS

Integrated transcriptomic and metabolomic profiling of placental tissues from controls and hypospadias patients identified Zinc Finger Protein 511 (ZNF511) as a critical transcriptional regulator of ribosome-related gene clusters, disrupting transporter synthesis and placental function. Single-cell RNA sequencing delineated pivotal cellular subpopulations. Furthermore, proteomics, IP, ChIP-seq, and other techniques elucidated the mechanistic role of ZNF511 in ribosome biogenesis. A placenta-specific ZNF511 knockout murine model subsequently confirmed male fetal phenotypic anomalies.

RESULTS

We found that ZNF511 functions as a transcription factor that binds to ribosomal gene (RPS and RPL) promoters, recruits small nucleolar ribonucleoprotein (snoRNP) complexes to nucleolar regions, and enhances RNA polymerase I activity to coordinate rRNA transcription/processing, thereby augmenting ribosome biogenesis efficiency and affecting the synthesis of downstream transport proteins. This process predominantly occurs in placental syncytiotrophoblasts, where ZNF511 downregulation in hypospadias placentas disrupts ribosomal homeostasis, culminating in metabolic dysregulation. Furthermore, ZNF511 expression is transcriptionally regulated by the mTOR signaling pathway. Notably, placenta-specific ZNF511 knockout mice exhibited preterm delivery, low birth weight, and male offspring hypospadias phenotype.

CONCLUSIONS

ZNF511 in placental trophoblast cells plays a crucial role in ribosome biosynthesis and fetal nutrient hormone levels, providing significant insights into the underlying pathogenesis of hypospadias as well as genetic counseling.

★ EXOSOMES INDUCE REGENERATION OF CORPUS SPONGIOSUM IN URETHRAL RECONSTRUCTION OF RABBITS

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Shanghai Children's Hospital, Urology, Shanghai, CHINA

PURPOSE

Exosomes secreted from urine-derived stem cells (USC-exosomes) play a significant role in promoting vascular regeneration. We investigate the use of USC-exosomes to induce the regeneration of spongiosum beneath the neourethral in a rabbit model.

MATERIAL AND METHODS

A rabbit model with a 1.5×1.0 cm urethral defect was created and repaired using buccal mucosa. Three rabbits were assigned to experimental group and received USC-exosomes at a concentration of $1-3 \times 10^{10}/\text{ml}$, with a dosage of $0.5 \text{ ml}/\text{cm}^2$, applied to the outer surface of the neo-urethra. Three served as control group, receiving sodium hyaluronate in the same manner. Urethrography was performed three months later. Histopathological studies, including HE staining, Masson's trichrome staining, and immunostaining for α -SMA, were conducted to evaluate the restoration of the spongiosum. While the urethral tissues were sequenced and screened by qRT-PCR to find the differentially expressed genes (DEGs), then analyze DEGs by Gene Ontology and KEGG database to find the internal mechanism.

RESULTS

Urethrography revealed the diameter of the urethra in experimental group was significantly wider. In experimental group, the urethral outer wall displayed prominent sinusoidal vascular structures and smooth muscle fibers, whereas the control group's urethral wall consisted mainly of fibrous connective tissue. Histopathological studies showed that experimental group displayed significantly greater sinusoid formation, a higher density of smooth muscle fibers, and enhanced α -SMA expression compared to control group. Bioinformatics analysis found the DEGs mostly related to angiogenesis between the two groups focused on the ECM receptor interaction pathway and PI3K/Akt signaling pathway, especially on down-regulate of PTEN and up-regulate of Akt3, CREB5, BCL2, ITGA4 and COL1A2.

CONCLUSIONS

USC-exosomes induced the formation of spongiosum-like structures on the outer wall of the urethra. This study underscores the potential to reconstruct a more physiologically normal urethra with regenerated corpus spongiosum.

★ LIPUS PROMOTES CORPUS SPONGIOSUM SMOOTH MUSCLE CELLS PHENOTYPE TRANSFORMATION THROUGH PPAR-R PATHWAY

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PURPOSE

We previously found that the pathological changes of the corpus spongiosum (CS) in hypospadias mainly concentrated in smooth muscle tissue, presenting as phenotype transformation from contractile to synthetic, which might be related to frequent postoperative complications. The role of low-intensity pulsed ultrasound (LIPUS) in regulating vascular smooth muscle cells and angiogenesis has been confirmed.

This study is aimed to demonstrate the feasibility of regulating phenotype transformation of CS smooth muscle cells (SMCs) in hypospadias by LIPUS and explore the potential mechanisms.

MATERIAL AND METHODS

The SMCs were extracted from CS tissue in patients with proximal hypospadias. Appropriate LIPUS irradiation intensity and duration which could regulate phenotype transformation of CS SMCs were determined in vitro. Then 71 patients with severe hypospadias were randomly divided into control group and LIPUS group to verify the phenotype regulation of LIPUS on CS smooth muscle in vivo. At last, the potential mechanisms were explored in vitro.

RESULTS

In vitro experiments showed that LIPUS with an intensity of 0.1w/cm² and duration for 10 minutes could significantly increase the expression of contraction markers in CS SMCs and decrease the expression of synthesis markers. Moreover, LIPUS stimulation could alter the phenotype of SMCs in patients with proximal hypospadias. RNA sequencing results revealed that PPAR-r was significantly increased after LIPUS stimulation. After over-expression of PPAR-r, the contraction markers of CS smooth muscle cells significantly increased, and knockdown of PPAR-r blocked this effect.

CONCLUSIONS

LIPUS could regulate CS SMCs from synthetic type to contractile in hypospadias, showing promising in postoperative tissue remodeling. The PPAR-r signaling pathway might play an important role in this process.

SEROTONERGIC MODULATION IN CONSTIPATION-INDUCED DETRUSOR OVERACTIVITY AS A POTENTIAL TARGET FOR BBD IN CHILDREN

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PURPOSE

This study aimed to investigate the pathological mechanisms behind bladder and bowel dysfunction (BBD), a common yet often underdiagnosed pediatric condition marked by lower urinary tract symptoms (LUTS) and abnormal bowel habits like constipation and/or encopresis. BBD is known to cause long-term complications such as recurrent UTIs, vesicoureteral reflux, and renal scarring, but the mechanisms behind these links remain unclear. We hypothesize that bowel dysfunction induces bladder-bowel cross-organ sensitization via overlapping neural pathways and tissue changes, including inflammation, fibrosis, and alterations in cellular signaling and connectivity.

MATERIAL AND METHODS

With IACUC approval, functional constipation was induced in juvenile male mice by surgically narrowing the external anal sphincter. Sham-operated mice served as controls. Four days post-surgery, the effects of constipation were evaluated using in vivo urodynamic studies and in vitro physiological assessments of bladder strips. Additionally, quantitative RT-PCR was used to analyze gene expression patterns in the bladder and lumbosacral dorsal root ganglia (LsDRG).

RESULTS

Constipation caused detrusor overactivity, shown by increased urinary frequency and spontaneous contractions. Gene expression analysis revealed a 1.5-fold upregulation of excitatory serotonin receptors (Htr2a, Htr2c) in the bladder ($p < 0.05$). Serotonin enhanced spontaneous activity in bladder strips from constipated mice, increasing frequency and force by 1.6- and 2.4-fold, respectively ($p < 0.0001$). These effects were reversed by ketanserin, an Htr2 antagonist. Additionally, the LsDRG in constipated mice showed a 1.6- to 1.8-fold increase in genes modulating sensory activation, including serotonin receptors (Htr1a, Htr3) and Mrgprb2 ($p < 0.05$).

CONCLUSIONS

The findings highlight how constipation alters sensory pathways, contributing to detrusor overactivity and increased bladder activity. Upregulation of serotonin receptors and sensory modulators plays a key role in bladder dysfunction, suggesting these receptors as potential therapeutic targets for children with BBD.

DAILY INTRAVESICAL INSTILLATION OF TROSPIMUM CHLORIDE IMPROVES NEUROGENIC BLADDER FUNCTION IN A RAT SPINAL CORD INJURY MODEL.

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INTRODUCTION

The management of neurogenic lower urinary tract dysfunction (NLUTD) requires low bladder pressures to protect the upper urinary tract. Oral anticholinergics such as trospium chloride (TrCl) are a mainstay of therapy but face challenges with adherence and systemic side effects. Intravesical TrCl delivery achieves high local concentrations with minimal systemic absorption and is efficacious in idiopathic detrusor overactivity, though its effects on NLUTD remain unexplored. We examined the effect of daily intravesical TrCl instillation on bladder function in a rodent spinal cord injury (SCI) model.

METHODS

Ten-week-old female Sprague-Dawley rats underwent suprapubic catheter implantation, followed by T8–T10 spinal cord transection seven days later. After randomization into control (water; n=3) or TrCl (0.65 µg/mL; n=3) treatment groups, daily 500 µL intravesical instillations began the following day. After four weeks, bladder function was evaluated using conscious cystometry (60 µL/min saline infusion) for up to 2 hours. Statistical analysis was performed using the Dunn test.

RESULTS

Of the overall cystometry time, TrCl bladders demonstrated pressures less than 20 cm H₂O significantly more often (88.4% of the time vs. 39.2% in controls; $p < 0.05$), and greater than or equal to 20 cm H₂O significantly less often (11.6% vs. 60.7%; $p < 0.05$). This trend continued when assessing truly pathologic pressures greater than 40 cm H₂O (0.736% vs. 27.4%; $p = 0.121$). The AUC was significantly reduced by TrCl treatment (3.9×10^4 vs. 14.3×10^4 ; $p < 0.05$).

CONCLUSIONS

Daily intravesical TrCl instillation in SCI rats significantly reduced overall bladder pressures compared to untreated animals, pointing to a potential morbidity-reducing additional treatment avenue for an otherwise challenging patient population. Further validation of additional urodynamic parameters, systemic TrCl distribution, and mechanistic changes is required.

DIFFERENTIAL EXPRESSION OF MIRNAS OF MALE PEDIATRIC LICHEN SCLEROSUS PATIENTS

Marios MARCOU ¹, Valerie FLAMMANG ², Arndt HARTMANN ³, Helge TAUBERT ² and Sven WACH ²

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PURPOSE

Lichen sclerosus (LS) is a chronic, inflammatory skin condition that affects both children and adults, with the genital region being the primary site of manifestation. Despite its clinical relevance, molecular mechanisms underlying the disease in male pediatric patients remain poorly understood. This study aimed to identify and analyze the differential expression of microRNAs (miRNAs) in LS tissue compared to adjacent normal tissue and non-LS controls to uncover potential diagnostic and therapeutic biomarkers.

MATERIAL AND METHODS

Archival foreskin tissue samples were obtained from 98 pediatric circumcision cases, including 41 histologically confirmed LS cases. LS and adjacent normal tissues from LS patients, as well as normal tissue from non-LS patients, were analyzed. RNA was isolated from formalin-fixed paraffin-embedded (FFPE) tissue, and quantitative real-time PCR (qRT-PCR) was performed to evaluate the expression of nine miRNAs previously implicated in LS or related conditions.

RESULTS

Four miRNAs (hsa-miR-146a-5p, hsa-miR-146b-5p, hsa-miR-150-5p, and hsa-miR-155-5p) were significantly upregulated, and two (hsa-miR-199b-5p and hsa-miR-200b-3p) were significantly downregulated in LS tissues compared to adjacent normal tissues and non-LS controls (all $p < 0.001$). ROC analysis revealed hsa-miR-155-5p and hsa-miR-150-5p as the most robust diagnostic markers, with area under the curve (AUC) values of 0.892 and 0.864, respectively, when differentiating LS from normal tissue. Additionally, pediatric LS tissues exhibited fewer significant miRNA correlations compared to normal tissues, suggesting a disruption of regulatory networks. Age-specific analysis revealed higher expression of hsa-miR-150-5p and increased inflammation in prepubertal patients (≤ 9 years).

CONCLUSIONS

This study demonstrates distinct miRNA expression patterns in male pediatric LS patients, identifying hsa-miR-155-5p and hsa-miR-150-5p as promising diagnostic biomarkers. The findings highlight miRNAs as potential therapeutic targets and underline their role in the molecular pathogenesis of pediatric LS, warranting further investigation into their regulatory pathways and interactions with hormonal and inflammatory mechanisms.

THE EXTRACELLULAR MATRIX IN WILMS TUMOR: A DRIVER OF CANCER PROGRESSION

David KOOS ¹, Matthew THORNTON ², Paola AGUIARI ¹, Valentina VILLANI ¹, Hripsime CHOMOYAN ¹, Brendan GRUBBS ², Roger DE FILIPPO ³, Stefano DA SACCO ³, Laura PERIN ³ and Astgik PETROSYAN ⁴

1) Children's Hospital Los Angeles, Los Angeles, USA - 2) University of Southern California, Los Angeles, USA - 3) Children's Hospital Los Angeles / Keck School of Medicine USC, Los Angeles, USA - 4) Children's Hospital Los Angeles / Keck School of Medicine USC, Urology, Los Angeles, USA

PURPOSE

The extracellular matrix (ECM), a vital tumor microenvironment (TME) component, significantly influences cancer progression and therapeutic resistance. Wilms tumor (WT), a pediatric renal cancer arising from abnormal kidney development, exhibits altered ECM architecture, which may drive tumor progression. This study aims to characterize ECM changes in WT compared to normal kidney tissue and investigate their impact on cancer cell behavior and tumorigenic potential.

MATERIAL AND METHODS

WT and normal kidney tissue samples were decellularized, and ECM architecture was visualized using second-harmonic generation (SHG) microscopy and immunofluorescence staining. Cancer BioMarker Antibody Array measured cancer-related protein expression in the ECM. Cancer and normal cells were seeded on decellularized WT and normal ECM scaffolds for 21 days, with migration and proliferation monitored using STELLARIS DIVE multiphoton microscopy. Bulk RNA sequencing and single-cell ATAC-seq analyzed transcriptomic changes and chromatin accessibility.

RESULTS

WT ECM showed fragmented, disorganized collagen and increased inflammatory markers (e.g., alpha-1 antichymotrypsin), cytoskeletal remodeling proteins (e.g., tubulin alpha), and EMT regulators (e.g., TGFB1). Cancer cells seeded on WT ECM upregulated EMT genes (FOXC2, TGFB2) and ECM remodeling genes (ADAMTS5), while downregulating cell cycle regulators (PPM1L) and integrin interaction genes (COL8A2). Normal cells on WT ECM displayed increased cancer-associated gene expression (e.g., AKT3, BCL2) and decreased integrin-related genes (COL6A3, ICAM1). Single-cell ATAC-seq revealed WT-specific cancer stem cell populations expressing EMT transcription factors and unique ECM signatures.

CONCLUSIONS

WT ECM alterations, including collagen disruption and EMT promotion, foster a tumor-supportive environment. Targeting ECM-driven mechanisms may offer novel therapeutic strategies to disrupt tumor progression.

HISTORY SESSION

Moderators: Cenk Büyükkünel (TR), Rien Nijman (NL)

Main Programme on Wednesday 3, September 2025, 17:30 - 18:50

17:30 - 17:40

Opening remarks

Prof. Serdar Tekgül (President of ESPU, Türkiye), Prof. S.N.Cenk Büyükkünel (Türkiye)

17:40 - 18:00

History of Pediatric Urology in Vienna and Austria

by Medical Historian Prof. Czech, Austria

18:00 - 18:10

History of Burow Triangles

by Prof. Ali Avanoglu, Türkiye

18:10 - 18:30

History of SPU Meetings

by Prof. Paul Austin, USA

18:30 - 18:50

History of ESPU Meetings

by Prof. Serdar Tekgül, Türkiye

S08: LOWER URINARY TRACT 1

Moderators: Bilge Turedi (TR), Radim Kočvara (CZE)

Parallel Programme on Wednesday 3, September 2025, 18:30 - 18:50

18:30 - 18:33

S08-1 (OP)

★ ADVERSE CHILDHOOD EXPERIENCES AND LOWER URINARY TRACT SYMPTOMS IN ADOLESCENCE: A PROSPECTIVE STUDY IN A UK BIRTH COHORT

Kimberley BURROWS ¹, Jon HERON ¹ and Carol JOINSON ²

1) University of Bristol, Population Health Sciences, Bristol, UNITED KINGDOM - 2) University of Bristol, Centre for Academic Child Health, Population Health Sciences, Bristol, UNITED KINGDOM

PURPOSE

Adverse childhood experiences (ACEs e.g. abuse, neglect, parental psychopathology) have been linked to an increased risk of lower urinary tract symptoms (LUTS). Previous research is, however, limited by reliance on retrospective recall of ACEs, small sample sizes, and is mostly conducted on women. Our study is the first to examine prospective associations between ACEs and LUTS in adolescents.

MATERIAL AND METHODS

We used data from 4745 children from the Avon Longitudinal Study of Parents and Children. Children's ACE exposure from birth-8-years was reported by mothers, partners and children via 343 questions over 28 timepoints. At age 14, young people completed a self-report questionnaire on LUTS (any urinary incontinence [UI], daytime UI, bedwetting, urgency, nocturia, frequent urination, voiding postponement, low voided volume). We used multivariable logistic regression to examine relationships between the ACE score and LUTS, adjusted for socioeconomic status, maternal antenatal smoking, maternal age at birth of child, parity, ethnicity, birthweight, gestational age, and child developmental delay.

RESULTS

A one unit increase in ACE score was associated with increased odds of UI: Odds ratio (95% confidence interval) 1.16 (1.03-1.30). Odds ratios for the association of ACE score with other LUTS ranged from 1.29 (1.12, 1.48) for urinary frequency to 1.10 (1.02, 1.19) for voiding postponement.

CONCLUSIONS

Children exposed to an increased burden of ACEs are more likely to experience LUTS in adolescence. The findings indicate the importance of assessing ACEs in children presenting with LUTS. ACEs could be targeted in interventions to reduce the risk of LUTS persisting into adolescence.

AUTISM AND AUTISTIC TRAITS IN CHILDREN AND YOUNG PEOPLE WITH INCONTINENCE AND CONSTIPATION: PHENOTYPIC AND GENETIC ASSOCIATIONS IN A UK BIRTH COHORT

Prince GYAMENAH ¹, Kimberley BURROWS ¹, Oliver BASTIANI ¹, Dheeraj RAI ¹ and Carol JOINSON ²

1) University of Bristol, Population Health Sciences, Bristol, UNITED KINGDOM - 2) University of Bristol, Centre for Academic Child Health, Population Health Sciences, Bristol, UNITED KINGDOM

PURPOSE

Children with autism/autistic traits have higher risks of incontinence and constipation. We examine if autistic traits, autism, and genetic liability for autism are associated with incontinence and constipation in children and adolescents in a large birth cohort.

MATERIAL AND METHODS

We used data from the Avon Longitudinal Study of Parents and Children (ALSPAC) at ages 9 (n=4233-5539) and 14 (n=3403-4950). We used multivariable logistic regression to examine associations of parent-reported autistic traits (3-9 years) and diagnosed autism with incontinence (enuresis, daytime-wetting, soiling) and constipation (parent-reported at age 9, self-reported at age 14). We used logistic regression analysis to test the association between the autism PRS and incontinence/constipation, adjusted for sex and the first 10 principal components in ALSPAC.

RESULTS

Social-communication and speech coherence difficulties showed the strongest associations with incontinence, e.g. OR and 95% confidence interval for the association between social-communication difficulties and daytime-wetting at age 9 was 2.21 (1.47-3.32) and for coherence was 2.34 (1.60-3.43). Diagnosed autism was only associated with increased odds of daytime-wetting (3.18 [1.44-7.02]). At age 14, there was evidence of associations between autistic traits and constipation: e.g. social-communication (1.68 [1.13-2.49]). The PRS for autism was associated with daytime-wetting at age 14 (1.19 [1.02-1.41]); weakly associated with constipation at age 14 (1.11 [0.99-1.23]), and associated with monosymptomatic, but not non-monosymptomatic, enuresis at age 9 (1.15 [1.03-1.28]).

CONCLUSIONS

We found evidence for phenotypic and genetic associations between autistic traits/autism and incontinence/constipation in a community-based cohort.

ASSISTED INFANT TOILET TRAINING AND THE PREVALENCE OF FUNCTIONAL GASTROINTESTINAL DISORDERS UP TO THE AGE OF 9 MONTHS: A RANDOMISED, CONTROLLED TRIAL

Terese NILSSON ¹, Anna LEIJON ¹, Riccardo LOMARTIRE ², Ulla SILLÉN ³, Anna-Lena HELLSTRÖM ⁴ and Barbro HEDIN SKOGMAN ¹

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PURPOSE

Late initiation of toilet training is suggested to contribute to functional gastrointestinal disorders in children. This study aims to evaluate if assisted infant toilet training can reduce the prevalence of functional gastrointestinal disorders during the first 9 months of life.

MATERIAL AND METHODS

The Bowel And Bladder function in Infant Toilet Training (BABITT) study is a randomised, controlled trial with healthy infants aged 0-2 months in Sweden. Infants were randomly assigned to either start parent-assisted infant toilet training at the age of 0-2 months (intervention) or after 9 months of age (controls). The intervention group were encouraged to practice at least once a day, 5-7 days per week. All parents answered validated web-questionnaires at ages 2, 3, 6 and 9 months.

The primary outcome was the total period prevalence of parent-reported functional gastrointestinal disorders (infant colic, infant dyschezia and/or functional constipation, defined by Rome IV criteria) up to the age of 9 months.

RESULTS

271 infants (145 males, 54%) were randomly assigned at median age of 34 days (136 intervention; 135 controls). Logistic regression according to intention-to-treat with complete cases (127 intervention; 132 controls) showed no difference in the total period prevalence of functional gastrointestinal disorders between the intervention and the controls (58.3% vs 55.3%, difference 3.0%, [95% CI -9.1 to 15.1]; p=0.6265). Intervention adherence ranged between 53-63%.

CONCLUSIONS

This intervention study does not support that assisted infant toilet training reduces the prevalence of gastrointestinal disorders during infancy. Long-term effects are being evaluated in the ongoing BABITT study up to the age of 4 years.

S09: VUR

Moderators: Erik Van Laecke (BEL), Francisca Yankovic (CL)

Main Programme on Thursday 4, September 2025, 08:00 - 08:50

08:00 - 08:03

S09-1 (OP)

CAN POSTNATAL ULTRASOUND ALONE EXCLUDE VESICoureTERAL REFLUX IN PATIENTS DIAGNOSED WITH ANTENATAL UNILATERAL HYDROURETERONEPHROSIS AND FOLLOWED POSTNATALLY?

Efe Semetey OGUZ¹, Mustafa Alkan OKTAR², Mehmet Fatih OZKAYA³, Berk BURGU⁴, Omer Suat FITOZ⁵ and Yakup Tarkan SOYGUR⁴

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PURPOSE

Routine voiding cystourethrography (VCUG) is commonly performed to exclude vesico-ureteral reflux (VUR) in patients with antenatally diagnosed unilateral hydroureteronephrosis (HUN). This study evaluates whether differences in kidney lengths, as determined by postnatal ultrasound (US), can reduce the need for routine VCUG in this group.

MATERIAL AND METHODS

We retrospectively analyzed the VCUG and urinary ultrasonography (US) data of patients diagnosed with unilateral antenatal hydronephrosis (HN) between 2009 and 2023, within the 0-1 age range. Patients whose postnatal ultrasound detected hydroureteronephrosis at our center were included in the study. Those with complex urinary system anomalies were excluded. Kidney dimensions, parenchymal thickness, renal pelvis diameters, Society for Fetal Urology (SFU) grades, and distal ureter diameters were analyzed. The longitudinal length difference between affected and healthy kidneys was calculated as a percentage: $[(\text{Affected kidney} - \text{Healthy kidney}) / \text{Healthy kidney} \times 100]$.

RESULTS

Among all reviewed cases, 119 patients met the inclusion criteria, and reflux grades 3-5 were observed in 41 cases (34.5%). Using a cut-off of "-8.2%" for the affected kidney length ratio, the sensitivity, specificity, positive predictive value (PPV), and negative predictive value (NPV) were 70.73%, 91.03%, 80.56%, and 85.54%, respectively. Patients with ratios below "-8.2%" had higher reflux risk (OR 17.23, CI 5.84-50.83, $p < 0.001$). Reduced parenchymal thickness further increased reflux risk (OR 5.07, CI 1.31-19.64, $p = 0.019$).

CONCLUSIONS

Smaller kidney size and parenchymal thinning on US strongly correlate with VUR risk. Additionally, when the percentage difference in kidney sizes was above the determined threshold, the likelihood of high-grade reflux was significantly reduced. This study highlights the potential to develop new diagnostic algorithms based on non-

invasive, low-cost, and contrast-free US examinations. Such approaches could minimize the need for the invasive VCUG procedure, which carries associated risks and complications.

08:03 - 08:06

S09-2 (OP)

CIRCUMCISION AND CONTINUOUS ANTIBIOTIC PROPHYLAXIS: A SYNERGISTIC APPROACH TO PREVENT RECURRENT FEBRILE URINARY TRACT INFECTIONS IN BOYS WITH HIGH-GRADE VESICOURETERAL REFLUX

Yichen HUANG, Yiqing LYU, Fang CHEN, Yu DING, Zhiwei PENG and Ming WU
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PURPOSE

This study evaluated the effectiveness of circumcision and continuous antibiotic prophylaxis (CAP) in preventing febrile urinary tract infection (fUTI) in boys with high-grade primary vesicoureteral reflux (VUR).

MATERIAL AND METHODS

This retrospective review was conducted using clinical data from 114 boys diagnosed with grades III–V primary VUR at Shanghai Children's Hospital from June 2019 to 2022. The mean age of the enrolled children was 28.03 months. Participants were assigned to one of the following groups: observation ($n = 14$), CAP ($n = 23$), circumcision ($n = 38$), and CAP + circumcision ($n = 39$). The follow-up duration was 2 years. The incidence of febrile UTIs in each group was documented, and the efficacy of conservative management strategies was evaluated.

RESULTS

Among the 114 children, 15 (13.2%) experienced recurrent febrile UTIs. Recurrences were observed in 6 (42.9%), 7 (30.4%), 2 (5.3%), and 0 (0%) in the children in the observation, CAP, circumcision, and CAP + circumcision groups, respectively ($P < 0.001$). Significantly lower recurrence rates were observed in the circumcision and CAP + circumcision groups than in the CAP and observation groups. Further analysis determined circumcision as a significant factor in reducing febrile UTI recurrence ($P < 0.001$).

CONCLUSIONS

Circumcision plays a crucial role in reducing fUTI recurrence in boys with primary high-grade VUR. Interestingly, combining circumcision with CAP provides the highest level of protection against fUTI recurrence.

BEING BORN SMALL FOR GESTATIONAL AGE IS AN INDEPENDENT RISK FACTOR OF FAILURE FOR ENDOSCOPIC TREATMENT OF VESICoureTERAL REFLUX

Ömer Barış YÜCEL, Sumeyye SÖZDUYAR, Yusuf Atakan BALTRAK, Sibel TİRYAKİ, Ali TEKİN and İbrahim ULMAN

Ege University, Department of Pediatric Surgery, Division of Pediatric Urology, İzmir, TÜRKİYE

PURPOSE

Endoscopic treatment (ET) for vesicoureteral reflux (VUR) is a widely accepted procedure with a success rate between 70% to 90%. Despite various studies, a reliable predictive model for ET outcomes is still lacking. Being born small for gestational age (SGA), defined as a birth weight falling below the 10th percentile, has been linked to congenital urological disorders and potential developmental disparities. We noticed that a significant portion of the failed cases consisted of patients who born SGA. Based on this observation, we sought to evaluate correlation between SGA and ET failure.

MATERIAL AND METHODS

Clinical data from children who underwent ET for VUR between 2013 and 2023 were analyzed. Factors considered included gestational age (GA), birth weight, associated anomalies, VUR grades, renal function, scarring, and operative variables, as well as post-treatment VCUGs. Secondary and complex VUR cases were excluded. Children were categorized into SGA and non-SGA groups for comparative analysis.

RESULTS

Sixty-five children (40 girls, 25 boys) representing 104 renal units were included. The average age at ET was 4.2 years. No significant differences were found between the SGA (n=10) and non-SGA (n=55) groups in terms of GA, VUR grade, renal scarring, and age at operation. However, the SGA group had a significantly lower success rate in VUR resolution compared to the non-SGA group (20% and 82%, respectively; $p<0.001$). Multivariate logistic regression indicated SGA as an independent risk factor for ET failure with an odds ratio of 13.3.

CONCLUSIONS

This study is pioneering in examining the relationship between SGA and ET failure. The results suggest that SGA is a significant independent risk factor and have the potential to lead to changes in surgical strategies and patient counseling after further validation studies.

PROPENSITY SCORE MATCHED ANALYSIS OF TRANSVESICAL URETERAL REIMPLANTATION VERSUS OPEN URETEROCYSTONEOSTOMY FOR VUR: A MULTICENTER SURVEY IN JAPAN

Kazuyoshi JOHNNIN¹, Jun MATSUBAYASHI², Kenichi KOBAYASHI¹, Tetsuya YOSHIDA¹, Susumu KAGEYAMA¹ and Akihiro KAWAUCHI³

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PURPOSE

The gold standard for treating primary vesicoureteral reflux (VUR) is open ureterocystoneostomy (UCN). Transvesical ureteral reimplantation (TVUR) is one of the laparoscopic surgeries covered by national insurance in Japan. We investigated the feasibility and outcomes of TVUR for patients on VUR

MATERIAL AND METHODS

From April 2012 to March 2022, we conducted a retrospective multicenter survey of patients on VUR who underwent TVUR and UCN in Japan. We collected 1,360 patients (514 in the group of TVUR and 846 in the UCN) from 25 institutions by the Japanese Society of Endourology and Robotics and 7 institutions by the Japanese Society of Pediatric Urology. To compare TVUR and UCN, in terms of perioperative outcomes, hospital stay, and reoperation rate.

RESULTS

After 1:1 propensity score matching, were 450 patients in each group (the TVUR group and the UCN group). Surgery time was significantly longer in the TVUR group [263 (220, 322), 184 (151, 229) minutes] (P<0.001). Urinary catheter removal was earlier in the TVUR group [3 (2, 5), 5 (3, 7) days] (<0.001). Postoperative hospital stay was significantly shorter in the TVUR group [5 (4, 7) vs. 7 (5, 8) days]. In the comparison of reoperation rate rates, the TVUR group demonstrated higher than the UCN group (HR 4.16 [1.18, 14.59] (P=0.026). Among patients under 10 years old, the risk of reoperation was higher in the TVUR group.

CONCLUSIONS

After propensity score-matched analysis the TVUR group demonstrated longer surgery time and higher reoperation rates with shorter hospital stays.

THE COMPARISON OF POSTOPERATIVE QUALITY OF LIFE OF CHILDREN AND ADOLESCENTS WHO UNDERWENT MINIMALLY INVASIVE AND MAJOR SURGERY FOR VESICoureTERAL REFLUX DISEASE: A RETROSPECTIVE COHORT STUDY.

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PURPOSE

In pediatric urology, the interest taken in major surgeries is often much less than that of minor surgeries, since their physical and psychological impacts are considered severe. However, studies that investigate long-term QoL, including homogeneously distributed patients according to diagnosis, still need to be conducted. We aimed to compare endoscopic subureteric injection with conventional open ureteral reimplantation in vesicoureteral reflux disease (VUR) in terms of long-term postoperative QoL to find potential factors that would predict the outcome.

MATERIAL AND METHODS

This retrospective cohort was based on data from February 2016-December 2019 on 115 children and adolescents (4 - 18 years old) who underwent elective surgery due to VUR disease and were hospitalized thereafter. Patients were divided into two groups according to surgery they underwent: "Endoscopic subureteral Hyaluronic Acid/Dextranomer copolymer injection" (n = 65) and "Open Ureteroneocystostomy" (n = 50). With their mothers, the patients filled out the Pediatric Quality of Life Questionnaire (PedsQL) remotely 2 to 6 years post-surgery (median 49 months) and were compared between each other with the regards of postoperative quality of life. Those with congenital or concomitant diseases were excluded.

RESULTS

Patients undergoing different surgery types had similar scores in all domains in PedsQL. Linear regression analysis also showed that surgery type, length of hospital stays, previous surgery experience, and patients' age at the time of the survey was not associated with postoperative long-term QoL. However, the only predictor for higher postoperative QoL was the maternal higher education level (Est: 10.89; 95% CI: 1.54 - 20.23; p= 0.023).

CONCLUSIONS

Our study showed that minimally invasive nature of endoscopic treatment did not provide a significant advantage over open reimplantation in terms of long term postoperative QoL.

OPTIMIZING LONG-TERM FOLLOW-UP AFTER SURGICAL CORRECTION OF VESICoureTERAL REFLUX: A TIME-TO-EVENT ANALYSIS

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PURPOSE

Follow-up protocols after vesicoureteral reflux (VUR) surgery vary widely, with no consensus on duration or type of surveillance (Herndon et al., J Urol 2001; 165: 559-563). This study aims to define the postoperative period capturing at least 99% of complications requiring reoperation and to identify predictors for extended follow-up needs.

MATERIAL AND METHODS

This retrospective, population-based cohort study included pediatric patients who underwent open or endoscopic VUR surgery between 2002 and 2018. Patients were identified using procedural/billing codes and followed for 5-years. The primary outcome was reoperation related to VUR surgery. A composite outcome representing early complications was also captured. Time from VUR surgery to reoperation was explored and multivariable regression was performed to assess patient- and procedure-related predictors of reoperation more than 2-years after the initial surgery.

RESULTS

The study included 787 patients (open: 332; endoscopic: 455), with a mean age of 3.92 years (SD \pm 2.95). Early complications occurred in 25.4%, including unplanned emergency visits (14.1%) and hospital readmissions (3.4%), whereas 15.2% of patients underwent a reoperation. The median time to reoperation was 313 days (IQR: 140–661) and 3.2% underwent a reoperation after >2 years of follow-up. Early complications and younger patient age significantly predicted later interventions beyond two years (Table 1).

Table 1. Results from regression analysis predicting reoperation after >2 years			
Covariate	OR	95% CI	p-value
Patient age	0.826	0.689 - 0.99	0.0387
Surgical approach (open vs endoscopic)	0.989	0.392 - 2.499	0.9818
System complexity (complex vs normal)	1.053	0.339 - 3.269	0.9292
Early complication (yes vs no)	3.849	1.662 - 8.913	0.0017

CONCLUSIONS

Most postoperative complications and secondary interventions occur within the first 2 years, though a subset remains at risk beyond this period. Individualized follow-up protocols based on patient- and procedure-specific risk factors could improve care while reducing unnecessary healthcare costs.

ENDOSCOPIC BALLOON DILATATION TO MANAGE POSTOPERATIVE URETEROVESICAL JUNCTION OBSTRUCTION FOLLOWING ENDOSCOPIC TREATMENT FOR VESICoureTERAL REFLUX. A PRELIMINARY SINGLE-CENTER EXPERIENCE.

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PURPOSE

Postoperative ureterovesical junction obstructions (UVJOs) may occur following endoscopic treatment for vesicoureteral reflux (VUR). Aim of the present study were to analyze whether there is a role for endoscopic balloon dilatation to manage these secondary UVJOs.

MATERIAL AND METHODS

A single-center retrospective study was performed in those patients endoscopically treated for VUR in a defined time-period (from 2014 to 2024). Children with UVJOs caused by endoscopic injections were then selected and those cases managed with endoscopic balloon dilatation were finally included in the present study. Primary endpoint was the incidence of resolution of the obstruction. Data are expressed as median (range) and were analyzed with t test. A p value < 0.5 was considered significant.

RESULTS

In a 11-year period, 121 patients (175 renal unit) were endoscopically treated for VUR. At follow up, 8 UVJOs (7 patients) occurred after 21.5 months (2 - 63 months) since the last endoscopic injection. Four/8 obstructed ureter (3 patients) were managed by endoscopic balloon followed by double-J ureteral stenting. At presentation, pre-vesical ureteral dilation at ultrasound study (US) was 11 mm (7 - 16 mm), antero-posterior diameter (APD) of renal pelvis was 35 mm (30 - 75 mm). All postoperative periods were uneventful. Ureteral stents were removed after 57.5 days (40 - 65 days). At a follow of 8.3 months (3 - 18.5 months), pre-vesical ureteral dilation at US was 9 mm (6 - 16 mm), APD of renal pelvis was 32.5 mm (25 - 60 mm), with no significant improvement from the data at presentation (p = ns). Two patients were subsequently treated by ureteral reimplantation.

CONCLUSIONS

Hence a preliminary, single-center experience in a small number of patients, endoscopic ballooning seems not to be effective in managing UVJOs caused by endoscopic treatment of VUR. However, further studies would be required to corroborate these outcomes.

S10: VALVES 1

Moderators: Seppo Taskinen (FIN), Sofia Sjöström (SWE)

Main Programme on Thursday 4, September 2025, 08:50 - 09:50

08:50 - 08:53

S10-1 (OP)

AN EIGHT CENTER COMPARISON OF POSTERIOR URETHRAL VALVE RISK OF CHRONIC KIDNEY DISEASE (PURK) SCORE AND FIRST YEAR SERUM CREATININE NADIR (SCN1): WHICH IS THE BETTER PREDICTOR OF PROGRESSION TO RENAL REPLACEMENT THERAPY?

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PURPOSE

There are limited means to predict clinically significant renal outcomes in children with posterior urethral valve (PUV). The PURK score uses variables available at initial presentation and was shown to predict progression to renal replacement therapy (RRT). It has been shown that progression to RRT is also associated with serum creatinine nadir in the first year of life (SCN1). Herein, we aim to externally validate the PURK score and to compare it to SCN1 for RRT progression.

MATERIAL AND METHODS

A multi-center review of PUV patients (treated before 90 days of life without progressing to RRT in first 14 days of life) across eight North American centers was performed. PURK scores were calculated (failure-to-thrive, baseline Cr, renal dysplasia, high grade VUR) and prognostic value in predicting progression to RRT was compared to SCN1 using the area under receiver operating characteristics curve (AUROC) and Kaplan-Meier survival curves (KMSC).

RESULTS

Of 402 boys diagnosed with PUV at a median of 12 days (median follow up: 9.5 years, IQR 9.5-13.0), 45 (12.2%) progressed to RRT. RRT risk was 12.5% at 5 years and 24.8% at 10 years. PURK/SCN1 risk groups were: low (PURK 0-1/SCN1 ≤ 0.4), intermediate (PURK 2-3/SCN1 0.4-0.8), high (PURK ≥ 4 /SCN1 ≥ 0.8). PURK and SCN1 had similar performance with AUROC of 0.837 (95%CI 0.785-0.890) vs. 0.878 (95%CI 0.809-0.947; $p=0.349$) at 5-years and of 0.828 (95%CI 0.776-0.880) vs. 0.892 (95%CI 0.837-0.947; $p=0.090$) at 10-years. KMSC demonstrated better discrimination of risk groups for earlier outcomes 5 years for SCN1.

CONCLUSIONS

Both PURK and SCN1 has prognostic value for RRT progression. PURK score can be calculated at the time of initial presentation and provides an earlier prognostic utility comparable to SCN1; however, SCN1 may provide better discrimination of long-term high-risk patients.

08:53 - 08:56

S10-2 (OP)

ROBUST AND READY FOR USE - AN INTERNATIONAL VALIDATION OF POSTERIOR URETHRAL VALVE RISK OF CHRONIC KIDNEY (PURK) SCORE ACROSS ELEVEN ACADEMIC CENTERS

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PURPOSE

The Posterior Urethral Valve Risk of Chronic Kidney Disease (PURK) score, introduced in 2023, is the first prognostic system to identify children with posterior urethral valve (PUV) at high risk for chronic kidney disease (CKD) stage ≥ 3 at 1- or 5-years of age. The score is calculated based on initial presentation clinical variables (Table), and it showed promise in early external validation studies. We aimed to validate the score's robustness across 11 international academic centers.

Clinical variable at presentation	Points per variable
Baseline Cr $>150\mu\text{mol/L}$ (1.7 mg/dL)	Yes (+2 Points)
Failure to thrive	Yes (+2 Points)
High grade VUR (≥ 3) on VCUG	Yes (+1 Points)
Renal dysplasia on US	Yes (+1 Points)
Total score	/6

MATERIAL AND METHODS

We collected data from 11 pediatric centers across Canada (n=3), the United States (n=6), India (n=1), and Australia (n=1). Clinical variables were used to calculate PURK scores, and its prognostic value was assessed using the area under the receiver operating characteristic curve (AUROC).

RESULTS

The prospective internal validation cohort consisted of 51 new patients, while the external validation cohort included 341 patients. In the internal validation cohort, AUROC for predicting CKD ≥ 3 was 0.897 (95% CI 0.795–0.998) at 1 year (38 patients) and 0.824 (95% CI 0.646–1.002) at 5 years (20 patients). In the external validation cohort, AUROC was 0.844 (95% CI 0.790–0.898) at 1 year (228 patients) and 0.838 (95% CI 0.773–0.903) at 5 years (182 patients). Geographic subgroup analyses (Canada, USA, Australia, India) also confirmed significant prognostic value, with AUROC ranging from 0.827–0.960.

CONCLUSIONS

The PURK score's excellent prognostic value across diverse international cohorts supports its use in clinical settings for counseling and risk stratification. PURK score reporting in publications should also be strongly encouraged to ensure fair outcome comparisons across the spectrum of PUV.

08:56 - 08:59

S10-3 (OP)

CREATININE VELOCITY WITHIN THE FIRST WEEK OF LIFE CORRELATES WITH RENAL OUTCOME AT FIVE YEARS IN POSTERIOR URETHRAL VALVES: A MULTICENTER ANALYSIS

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PURPOSE

Nadir creatinine is the best-established predictor of chronic kidney disease (CKD) in PUV. However, it can take months to determine the nadir Cr. Therefore, earlier predictors of CKD are needed for guiding early management. We evaluated the utility of creatinine velocity (Cvel) over the first 5 days after presentation for predicting CKD in PUV.

MATERIAL AND METHODS

PUV patients from 10 institutions were retrospectively reviewed and those presenting under 72 hours of life with minimum 1 year follow-up were included. Cvel was calculated as the slope of Cr values over 5 days after initial bladder drainage. The outcome was CKD stage 2+ (eGFR

RESULTS

Of 427 PUV patients identified, 118 were eligible (Table 1). At 1 year, 55% (56/102) had CKD 2+, as did 67% (48/72) at 5 years. Cvel correlated with CKD 2+ at 1 year with AUC of 0.72, compared to nadir Cr AUC of 0.88, with significant difference on test of equality ($p=0.002$). At 5 years, the Cvel AUC was 0.82, similar to nadir Cr AUC of 0.83 ($p=0.85$). 63% of those with eGFR>90 at 5 years had a Cvel with a decreasing slope. 90% of patients with eGFR

Table 1: PUV Patient Characteristics (n = 118)	
Median gestational age (weeks)	37 (IQR 35-38)
Oligohydramnios	47 (40%)
Anhydramnios	12 (10%)
Dysplasia on ultrasound	41 (35%)
None	5 (4%)
Unilateral	72 (61%)
Bilateral	
High-grade VUR	45 (39%)
None	41 (35%)
Unilateral	31 (26%)
Bilateral	
Median age at initial surgery (days)	8 (IQR 5-16)

CONCLUSIONS

In a multicenter study of PUV patients with prompt care after birth, Cvel was predictive of 1- and 5-year CKD2+ and was indistinguishable from nadir Cr for 5-year outcomes. Cvel may provide critical early risk stratification for PUV management within the first days of life.

08:59 - 09:11

Discussion

IS VOIDING CYSTOURETHROGRAPHY (VCU) MANDATORY IN THE MANAGEMENT OF NEWBORNS SUSPECTED OF HAVING POSTERIOR URETHRAL VALVE?

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INTRODUCTION

Voiding cystourethrography (VCU) is an invasive diagnostic tool for posterior urethral valve (PUV) cases, associated with risks such as radiation exposure, urethral injury, and urinary tract infections (UTIs). This study evaluates the necessity of VCU in PUV management.

PATIENTS AND METHODS

A retrospective review was conducted on 43 newborns and infants diagnosed with PUV confirmed by cystoscopy (2013-2024). Thirty-six had prenatal ultrasound suspicion, while others presented with clinical symptoms (UTI). Patients were divided into two groups: Group1 (n=22) underwent VCU before cystoscopy, while Group2 (n=21) proceeded directly to cystoscopy. Clinical, ultrasound, and follow-up data were compared.

RESULTS

The mean age at cystoscopy was 55.2days (Group1) and 41days (Group2). All patients had increased bladder wall thickness, in both groups together with bilateral hydronephrosis/hydroureteronephrosis (HN/HUN) (18 in Group1, 19 in Group2) or unilateral HUN and patient with bilateral urinoma. VCU confirmed PUV in 12 (54%) of Group1.

However, cystoscopy identified PUV in all cases, including those with negative VCU. PUV types: TypeI (n=33; 14 in Group2), TypeIII (n=8; 7 in Group2), and TypeI+III (n=2, Group1). Valve ablation was performed using a cold knife.

During follow-up (mean 5years), seven Group2 patients required delayed VCU (mean 5months), with one needing surgery for persistent HN.

HN/HUN regressed in 30 patients (15 in Group2), remained stable in 11 (4 in Group2), progressed in 2 (one per group).

CONCLUSIONS

Diagnosing and treatment of PUV are multifactorial processes. Our clinical results support; cystoscopic evaluation and treatment of suspected PUV without preoperative VCU is a safe method, especially in newborn and infants.

RISK FACTORS AND OUTCOMES OF POST-OBSTRUCTIVE DIURESIS AFTER ADEQUATE URINARY TRACT DECOMPRESSION IN CHILDREN WITH PUV

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PURPOSE

Post-obstructive diuresis(POD) may develop following relief of obstruction in children with PUV. Herein, we aim to identify risk factors associated with the development of POD and associated outcomes.

MATERIAL AND METHODS

Retrospective review of database from 2018-2024, including children <2 years with complete urine output recordings. We collected data on age at presentation, duration of initial catheterization, surgery, length of stay(LOS), urine outputs, ultrasounds, serum creatinine(sCr) and progression to CKD and KRT. POD was defined as urine output of >5cc/kg/hr for more than 2 consecutive hours.

RESULTS

A total of 67 patients were included, 30 with POD. Age at presentation, and oligohydramnios were similar, but POD patients had longer LOS and catheter duration. POD cases had higher sCr at baseline(135 [86] vs. 66 [48]; $p<0.01$) and SFU 3-4 hydronephrosis(54% vs. 46%; $p=0.02$); however, post interventional sCr and US parameters were similar as was CKD and KRT rates(Table). Maximum urine output post-catheterization/post-diversion was significantly higher in the POD group(10.4cc/kg vs. 2.1cc/kg/hr; $p<0.01$). POD occurred at 8 days of age and was post diversion in 53%, in contrast to 40% with bladder decompression and 7% after anticholinergics($p=0.03$).

CONCLUSIONS

POD is more frequent with higher sCr, severe hydronephrosis and primary diversions, aligning as an indicator of urinary obstruction severity. POD is not associated with worse long-term kidney function. POD is an important consideration in the early management of PUV, potentially guiding surgical decisions.

	POD (n=30)	No POD (n=37)	p
Age at presentation (days) (IQR)	2 (7)	4 (30)	0.25
Oligo/anhydramnios	11 (37%)	11 (30)	0.43
LOS	16 (20)	9 (8)	<0.01
SFU 3-4 initial	26 (54)	22 (46)	0.02
Initial creatinine	135 (86)	66 (48)	<0.01
Diversion	22 (73)	12 (33)	<0.01
Creatinine 1 year	26 (15)	25 (7)	0.17
CKD >3	4 (13)	6 (13)	1.00
KRT	0 (0)	4 (11)	0.12
Follow up time	1079 (1496)	1260 (956)	0.09

ROLE OF ROUTINE CHECK-CYSTOSCOPY IN POSTERIOR URETHRAL VALVES OUTCOMES

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PURPOSE

The value of follow-up cystoscopy after posterior urethral valve (PUV) ablation has not been demonstrated. In 2017, routine check-cystoscopy (CC) 2-3 months after initial valve ablation was included as part of the posterior urethral valves (PUV) protocol to check and treat valve remnants. We aim to evaluate the impact of CC medium-term outcomes.

MATERIAL AND METHODS

Retrospective cohort study analyzing medical records of PUV patients from 1995 to 2023. The cohort was divided into two groups: Group 1, patients with CC as part of their management, and Group 2, without CC. We excluded patients with urinary diversion due to its potential influence on bladder function. We compared renal function, bladder function, and urinary tract infections (UTIs) between groups.

RESULTS

A total of 127 patients were included (type I n=126 and type 3 n=1). In Group 1, 63 patients (52.8%) were included. At initial cystoscopy, incomplete valve ablation was suspected in only 11 patients (17.5%). However, at CC, 33 patients (52.4%) had a repeat transurethral resection. Baseline demographic and clinical variables were comparable between groups. With a mean follow-up of 5 years (1-22), Group 1 showed lower rates of voiding dysfunction requiring clean intermittent catheterization (CIC) (8.1% vs 22.5%, $p<0.005$) and postoperative UTIs (28.6% vs 47.5%, $p<0.005$) compared to Group 2.

CONCLUSIONS

Check-cystoscopy in patients with PUV demonstrates a higher-than-expected rate of valve remnants. Routine CC in the management of children with PUV may lead to better functional and clinical outcomes, as they experience less voiding dysfunction requiring CIC and UTIs.

ARE PERINEPHRIC URINOMAS AND URINARY ASCITES IN PUV PATIENTS ASSOCIATED WITH VESICoureTERAL REFLUX?

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PURPOSE

Urinary extravasation in PUV patients (urinomas/ascites), are thought to be related to high detrusor pressures secondary to infra-vesical obstruction. If so, it is reasonable to expect VUR on the side of the leak. We explored characteristics and outcomes in urinomas and ascites with and without VUR to test this hypothesis.

MATERIAL AND METHODS

Retrospective review of a prospectively maintained database (2001–2024) focusing on patients <24 months. We included patients with postnatal urinomas/ascites and collected data on demographics, VUR, serum creatinine (SCr) parameters, CKD and kidney replacement therapy (KRT). PUV patients without urinomas/ascites served as a comparison group.

RESULTS

A total of 27 patients had a postnatal urinoma (n=22) or ascites (n=5), and 4 had both. Only 30% of urinomas had ipsilateral VUR and most had severe hydroureteronephrosis, suggesting a functional obstruction at the UVJ. The urinoma/ascites group had higher baseline SCr, likely related to urine reabsorption. However, this was similar at follow-up (Table). There were no differences in CKD >3 or KRT between urinoma/ascites vs. not.

CONCLUSIONS

While there does not appear to be any long-term impact on kidney function in PUV patients with urinoma/ascites, the low incidence of VUR in this population suggests that urinomas/ascites are related to the severity of obstruction and not high-pressure voiding/VUR. These findings should be considered when selecting the best initial surgical intervention in children with PUV.

	Urinoma/Ascites(n=27)	None(n=162)	p
Age at presentation (days)	5(13)	5(25)	0.64
PURK >3	15(56%)	67(42%)	0.21
Length of stay (days) (IQR)	20(16)	10(15)	<0.01
VUR	15 (56%) 8 (30%) to urinoma	93 (57%)	1.00
Baseline Scr (IQR)	141 (87)	83 (115)	<0.01
SCr at time of surgery (IQR)	79.5 (97.5)	63 (121)	0.52
eGFR last follow up (IQR)	87.39 (40.49)	91.60 (62.13)	0.83
CKD >3	7 (26%)	44 (27%)	1.00
KRT	2 (7%)	26 (16%)	0.38
Primary Ablation	18 (68%)	124 (77)	0.33
Follow up (years) (IQR)	12.6 (12)	8.2 (20.4)	0.15

DOES UNILATERAL REFLUX HAVE A PROTECTIVE EFFECT IN POSTERIOR URETHRAL VALVE PATIENTS?

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PURPOSE

To evaluate the protective role of unilateral reflux on renal function in PUV patients. Various protective mechanisms have been proposed in patients with posterior urethral valves (PUV). The role of unilateral reflux as a protective factor is debated.

MATERIAL AND METHODS

A retrospective analysis was conducted on 128 PUV patients treated between January 1986 and July 2023. Unilateral VUR patients and ipsilateral renal function <15% were classified as having valve unilateral reflux dysplasia (VURD) syndrome. Data from 92 patients with documented renal scintigraphy were analyzed. Renal function was considered abnormal if serum creatinine levels exceeded age-specific reference values. Univariate and multivariate analyses assessed various parameters.

RESULTS

The median age at primary surgery was 5 months, with a median follow-up of 26 months. Bilateral VUR patients (44.4%, 16/36) had worse renal outcomes than those with no VUR (19.2%, 10/52) or unilateral VUR (17.5%, 7/40; $p = 0.011$). Thirteen of 31 patients with unilateral VUR had VURD. Abnormal renal function distribution was similar between unilateral VUR patients, regardless of VURD status. Nadir creatinine and 1-yr creatinine values were independent risk factors for abnormal renal function.

CONCLUSIONS

Although some studies suggest unilateral reflux protects the contralateral kidney, others indicate worse outcomes due to dysplasia. Our findings show that renal outcomes in unilateral VUR patients are comparable with those without VUR, implying a protective effect regardless of severity of ipsilateral dysplasia. Patients with unilateral VUR exhibit similar outcomes to those without VUR. Nephrectomy should be cautiously considered due to potential protective effects.

S11: UPPER URINARY TRACT 1

Moderators: Craig Peters (USA), Kalpana Patil (UK)

Main Programme on Thursday 4, September 2025, 11:10 - 12:10

11:10 - 11:14

S11-1 (OP)

PROTEOMIC PROFILING IN CHILDREN WITH URETEROPELVIC JUNCTION OBSTRUCTION (UPJO): INSIGHTS FROM URINARY BIOMARKER CLUSTERING AND MASS SPECTROMETRY ANALYSIS

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PURPOSE

Indication for surgery in Ureteropelvic junction obstruction (UPJO) could be difficult. Proteomic analysis could provide risk stratification, potentially refining clinical decision-making.

MATERIAL AND METHODS

We conducted a prospective study in 50 children undergoing pyeloplasty versus 25 sex-and age-matched healthy controls. Urine was collected preoperatively from the bladder and affected kidney, as well as contralateral and postoperatively from the affected kidney (days 1 and 7) and bladder (at follow-up). Mass spectrometry assessed the expression of biomarker clusters: albumin, retinol-binding protein (RBP), uromodulin, and creatinine. Data were normalized to urinary creatinine and analyzed for predictive patterns.

RESULTS

Preoperatively, albumin UPJO [4.6 mg/mmol (2.3 - 9.1)] was elevated in comparison with controls [1.4 (0.9 - 5.0) mg/mmol; p-value: <0.0001], and in the affected kidney [69.1 (15.1 - 226.7) mg/mmol] vs the contralateral [32.8 (12.6 - 59.6) mg/mmol; p-value: 0.0589]. Levels peaked on postoperative day 1 [945.7 (589.6 - 1,969.0) mg/mmol] before decreasing by day 7 [373.5 (131.5 - 948.3) mg/mmol] and in the follow-up [3.6 (1.3 - 11.1) mg/mmol], suggesting an acute response followed by stabilization. RBP had a similar trend: (0 (0 - 23.7) µg/mmol preoperatively, 1,286.8 (491.5 - 2,278.7) µg/mmol on day 1, 790.6 (165.2 - 1,319.3) µg/mmol by day 7 and 0.0 (0.0 - 67.0) µg/mmol at follow-up. Uromodulin remained stable. Creatinine was lower in the preoperative bladder urine (UPJO) compared to controls [2.5 (1.4 - 4.9) vs. 3.4 (2.4 - 5.5) mmol/L, p = 0.2286] and in affected kidneys vs contralateral [1.7 (1.0 - 3.6) vs. 5.9 (3.5 - 7.4) mmol/L, p < 0.0001].

CONCLUSIONS

Proteomic analysis can potentially differentiate UPJO from healthy kidneys and support clinical decision-making.

URINARY BIOMARKERS: NON-INVASIVE TESTING TO DIFFERENTIATE URETEROPELVIC JUNCTION OBSTRUCTION FROM NON-OBSTRUCTIVE DILATION

Cayde RITCHIE, Shao TAO, Tianjia GE, Rachelle BALILI, Kritika SHARMA, Aliyah DAVIS, James BROOKS and Kunj SHETH

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PURPOSE

Hydronephrosis is common in pediatric patients. Decision for surgery relies on differentiating true ureteropelvic junction obstruction (UPJO) from non-obstructive dilation (NOD). Current strategies are suboptimal, relying on subjective interpretation of invasive diagnostics. In this study, we aim to explore the role of urinary biomarkers in non-invasive determination of UPJO.

MATERIAL AND METHODS

Pediatric patients with unilateral hydronephrosis were enrolled. Patients progressing to pyeloplasty were categorized as UPJO, while NOD encompassed those stable on observation. Urine specimens were analyzed for NGAL, MCP-1, CA19-9, IP-10, and RBP4, using enzyme-linked immunosorbent assay (ELISA). Baseline and longitudinal data were collected. Data was analyzed using descriptive statistics, t-test, analysis of variance (ANOVA), and logistic regression modeling.

RESULTS

132 patients were prospectively analyzed. In hydronephrotic patients, baseline levels of NGAL, CA19-9, IP-10, and RBP4 were significantly elevated in patients with UPJO, compared to NOD. Levels of NGAL and IP-10 were significantly higher in patients with differential renal function <40%. On logistic regression analysis, the combination of IP-10 and RBP4 was the best predictor of surgery (sensitivity 76%, specificity 91%, AUC 0.94). In UPJO patients four months post-pyeloplasty, there was a 51% decrease in IP-10 levels and 49% decrease in RBP4. In NOD patients, levels remained stable.

CONCLUSIONS

While NGAL, CA19-9, IP-10, and RBP4 were able to differentiate UPJO from NOD, the combination of IP-10 and RBP4 emerged as the strongest predictor of surgery, with levels decreasing postoperatively. Early longitudinal data demonstrated stable levels in patients with NOD, indicating a potential role for a predictive algorithm at the time of initial presentation.

ACCURACY OF NON-CONTRAST-ENHANCED MAGNETIC RESONANCE UROGRAPHY FOR MEASURING SPLIT RENAL FUNCTION IN CHILDREN WITH URETEROPELVIC JUNCTION-TYPE HYDRONEPHROSIS

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PURPOSE

Split renal function (SRF) is one of the major factors for decision-making in children with ureteropelvic junction obstruction (UPJO)-type hydronephrosis and is commonly measured using renal dynamic scan (RDS). This study aims to investigate the accuracy of using non-contrast-enhanced magnetic resonance urography (NCE-MRU) as an alternative to RDS to estimate SRF in children with UPJO-type hydronephrosis.

MATERIAL AND METHODS

Twenty consecutive children (M:F= 13:7) with UPJO-type hydronephrosis were included in this feasibility study. All patients underwent NCE-MRU and RDS. Renal parenchyma volume were obtained on NCE-MRU by drawing the volume of interest to cover all the kidney parenchyma layer by layer. The values of split renal volume (SRV) for left renal units, right renal units and total renal units on NCE-MRU were compared with the values of SRF determined on RDS using Pearson's correlation coefficient.

RESULTS

Out of forty renal units from twenty patients, twenty-one (Left-13, Right-6, Bilateral-1) exhibited obstruction. In our overall assessment, the values of SRV showed a significant positive correlation with SRF for all forty renal units ($R=0.9483$, $R^2=0.8993$, $P<0.00001$). In an independent analysis for the twenty-one obstructed renal units, the values of SRV also demonstrated a significant positive correlation with SRF ($R=0.8912$, $R^2=0.7942$, $P<0.00001$).

CONCLUSIONS

NCE-MRU is an accurate non-invasive alternative to RDS for estimating SRF in children with UPJO-type hydronephrosis. However, the findings need to be tested in a larger cohort of patients and further validation will also require comparison of postoperative NCE-MRUs and RDS before any definite conclusions are drawn.

★ ASSESSMENT OF THE RISK OF SURGERY IN PATIENTS WITH HYDRONEPHROSIS USING MAG3 CORTICAL TRANSIT TIME VALUES

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PURPOSE

Surveillance is the standard approach for most patients presenting with hydronephrosis (HN). Predictive markers of HN non-progression may lighten the medical follow-up. For MAG3 renograms, the Cortical Transit Time (CTT) shows promising results in predicting HN progression.

We aim to assess the risk of progression to surgery based on CTT in patients with ureteropelvic junction obstruction (UPJO).

MATERIAL AND METHODS

Retrospective study including patients born between 2008 and 2020 who presented with HN and obstruction on MAG3 renogram. A senior physician reviewed all renograms. The primary outcome was the occurrence of surgery. We compared CTT values, differential renal function, and pelvic dilation between operated and non-operated renal units.

RESULTS

92 renal units were included: 60 operated and 32 non-operated. The initial CTT was 209 seconds in the Operated group, significantly higher than in the Non-Operated group, 147 seconds ($p=0.023$). The optimal CTT threshold was 180 seconds, with 50% of sensitivity and 81% of specificity. The proportion of initially obstructive CTT values was significantly higher in the Operated group ($p<0.01$). In a multivariate analysis, the model combining CTT, differential renal function, and pelvic dilation at one month was significantly predictive of the risk of surgery ($p<0.001$).

CONCLUSIONS

Measuring CTT on MAG3 renogram is a useful tool for predicting the progression of HN to surgery. A CTT below 180 seconds may be a favourable predictor of a non-progressive course in HN. Combining CTT with renal function and pelvic dilation at 1 month could reduce surveillance.

ROLE OF CONCURRENT SERIAL ULTRASONOGRAPHY AND DYNAMIC RENAL SCINTIGRAPHY IN DIAGNOSING URINARY OBSTRUCTION IN CHILDREN

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INTRODUCTION

This study evaluates the diagnostic accuracy of serial ultrasonography (dynamic ultrasonography, DUSG) when performed concurrently with dynamic renal scintigraphy (DRS) in detecting obstructive hydronephrosis (HN) in children undergoing DRS for suspected urinary obstruction.

PATIENTS AND METHODS

Thirty-five patients with unilateral HN requiring DRS between June 2022 and August 2024 were included. Standardized DUSG measurements were obtained at predefined time points: 30 minutes before DRS (USG1), at DRS initiation (USG2), at DRS completion (USG3), and one hour after furosemide administration (USG4). Prospective data from both modalities were analyzed and compared.

RESULTS

DRS showed radiotracer clearance half-life ($t_{1/2}$) <10 minutes in 19 patients, 10-20 minutes in 6 patients, and >20 minutes with no response in 10 patients.

DUSG revealed persistent HN in 17 patients at USG4, while APD returned to baseline or decreased further in 18 patients. Although DRS and DUSG demonstrated consistent graphical patterns, their timing varied. The regression of $t_{1/2}$ and APD occurred at different time points.

When comparing APD values between USG3 and USG4, the average reduction rate (emptying percentage) was found to be 20%. In the non-responsive group, the emptying percentage was 4.63%, indicating a significant difference compared to the remaining patients.

CONCLUSIONS

Integrating DRS and DUSG improves diagnostic accuracy for ureteropelvic junction obstruction. While nuclear clearance and anatomical regression are correlated, they occur at different time points. The APD emptying percentage on DUSG serves as a predictor of obstruction on DRS. Further large-scale, multicenter studies are needed to validate these findings.

THE ROLE OF VOIDING CYSTOURETHROGRAM IN THE ASSESSMENT OF BILATERAL ANTENATALLY-DETECTED ISOLATED HYDRONEPHROSIS

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PURPOSE

Isolated hydronephrosis (IH) is the most common cause of congenital hydronephrosis. Although voiding cystourethrogram (VCUG) is one of the main tools in hydronephrosis workup, there is debate about performing it routinely in all cases. In this study, we evaluated the role of VCUG in the assessment of bilateral IH in terms of its utility and potential complications.

MATERIAL AND METHODS

A retrospectively review of patients' charts who presented with postnatal hydronephrosis from 2012 to 2023 was conducted. We collected patients' demographics, grade of hydronephrosis and anteroposterior renal diameter (APD). VCUG results were reviewed and grade of vesicoureteric reflux (VUR) was documented. Additionally, any encountered VCUG-related complications were collected. The fate of hydronephrosis was assessed at the last follow up including ultrasound scans and need for surgical intervention.

RESULTS

A total of 104 patients, 83 males and 21 females, with bilateral IH were included. Patients presented at a median age of 0.13 month (0.1-10.2). Only 5 patients (4.8%) had VUR; all of them were unilateral and low-grade (1 as grade 1, 2 as grade 2 and 2 as grade 3 VUR). Of these refluxing patients, only one had UTI during follow up. All refluxing units were managed conservatively. During follow up, 11 patients (10.6%) had UTI, 5 patients (4.8%) had VCUG related UTI; all were on Abx prophylaxis. Of these 5 patients, 4 had no further UTI. No other procedure-related complications were reported. Notably, 8.7% of units (28 units) had surgical intervention as pyeloplasty whereas none had any anti-reflux procedures.

CONCLUSIONS

Less than 5% of patients were diagnosed with VUR that question the importance of routine VCUG studies in bilateral HN, particularly as only one of them developed UTI. We recommend performing VUG in patients, with bilateral IH, who develop UTI only to rule out VUR.

MODERNIZING ANTENATAL HYDRONEPHROSIS CARE: IMPACT OF REDUCING INVASIVE TESTS AND EXPOSURE TO ANTIBIOTICS

Mandy RICKARD ¹, Joana DOS SANTOS ¹, Samer MAHER ¹, Jin Kyu KIM ¹, Adree KHONDKER ¹, Beverly MIRANDA ¹, Mirriam MIKHAIL ¹, Nithiakishna SELVATHESAN ², Rodrigo ROMAO ¹, Joao PIPPI SALLE ¹, Michael CHUA ¹ and Armando J. LORENZO ¹

1) SickKids, Urology, Toronto, CANADA - 2) SickKids, Nephrology, Toronto, CANADA

PURPOSE

Published guidelines suggest that all infants with SFU 3-4 hydronephrosis (HN) be placed on continuous antibiotic prophylaxis (CAP) and investigated with a VCUG and diuretic renal scintigraphy (DRS). Over the last decade, we have reduced routine VCUGs, DRS and CAP for all isolated HN, regardless of severity and selected hydroureteronephrosis (HUN) patients. We aimed to determine the impact on UTIs and time to surgery with this modified approach.

MATERIAL AND METHODS

Patients <24 months with HN/HUN after 2015 were included. Known VUR or other anomalies were excluded. Variables included VCUG and DRS rates, CAP use, UTIs, and surgeries. Patients were divided into groups by year of presentation: Group 1(2015–2018), Group 2(2019–2021), and Group 3(2022–2025). UTIs were defined as pyuria and positive culture from a catheter specimen in a febrile child.

RESULTS

985 patients were included. Baseline characteristics were comparable (Table). There was a reduction in VCUG (52%, 31%, 29%, $p < 0.01$), DRS rates (57%, 43%, 30%, $p < 0.01$) and CAP duration (12 ± 9 vs. 7 ± 6 vs. 5 ± 4 months, $p < 0.01$) for groups 1, 2 and 3, respectively. UTI rates remained stable (4%, 3%, 3%; $p = 0.74$), and surgical age was younger (11 ± 13 vs. 7 ± 7 vs. 6 ± 5 months; $p < 0.01$).

CONCLUSIONS

Selective monitoring resulted in reduced radiation exposure, CAP duration and earlier age at surgery, without increased UTIs. These findings support revisiting current HN guidelines and may aid in identifying patients who would benefit from earlier surgical intervention.

	2015-18(n=303)	2019-21(n=381)	2022-25(n=301)	p
Age(months)	4+/-4	4+/-5	3+/-3	0.05
Isolated HN	227(75)	313(82)	230(77)	0.05
Uncircumcised	130(43)	209(55)	149(50)	0.03
Circumcised	114(38)	106(28)	96(32)	
Female	59(19)	65(17)	56(18)	
High-grade HN	206(68)	210(55)	181(60)	0.03
VCUG	157(52)	119(31)	86(29)	<0.01
DRS	173(57)	164(43)	91(30)	<0.01
CAP duration(months)	12+/-9	7+/-6	5+/-4	<0.01
Age at surgery(months)	11+/-3	7+/-7	6+/-5	<0.01

11:44 - 11:53

Discussion

11:53 - 11:56

S11-8 (OP)

GIANT HYDRONEPHROSIS: SURGICAL MANAGEMENT AND OUTCOME COMPARISON WITH "NON-GIANT HYDRONEPHROSIS". A EUROPEAN BICENTRIC STUDY.

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PURPOSE

According to Crooks et al., giant hydronephrosis (GH), often caused by ureteropelvic junction obstruction, is defined as a kidney occupying the hemiabdomen, crossing the midline, and spanning five vertebral bodies. This study compares antenatal/postnatal findings, surgical management, and long-term renal outcomes in children with GH versus non-GH hydronephrosis.

MATERIAL AND METHODS

A retrospective analysis was conducted on children with hydronephrosis treated by pyeloplasty at two European centers (2013-2024). Patients were stratified into GH and no-GH groups. Data collected included prenatal detection, imaging results, renal function, surgical approaches, and postoperative outcomes.

RESULTS

Among 428 children, 38 had GH and 390 no-GH. Prenatal detection was more frequent in GH (76.3% vs. 68.7%, $p=0.15$). Median age at surgery was younger in GH [8(2-61) vs. 19(7-103) months, $p=0.004$]. Open, laparoscopic, and robot-assisted pyeloplasty were performed in 148 [15.8%(GH) vs. 36.4%(no-GH)], 142 [63.2% vs. 30.3%], and 134 [18.4% vs. 32.6%] cases, respectively ($p<0.001$). Complication rates were 7% intraoperatively and 34.1% postoperatively, with laparoscopic pyeloplasty in GH associated with higher intraoperative (18.4%) and postoperative (73.0%) complications. Redo surgery was more frequent in GH (10.5% vs. 2.8%, $p<0.05$). Median renal function improvement was 4% (-10.5 to 14.0) in GH and 1.5% (-2.0 to 8.0) in no-GH ($p=0.86$). Logistic regression showed no significant difference in long-term [36(18-60) months] renal function ($p=0.34$).

CONCLUSIONS

Despite a significant reduction in pelvic dilation, GH is associated with higher complication rates regardless of surgical approach. However, long term renal function is not affected by this severe presentation/malformation

★ PEDIATRIC ROBOTIC SALVAGE REDO PYELOPLASTY WITH BUCCAL MUCOSA FOR LONG URETERAL STRICTURES: CASE PRESENTATION AND REVIEW OF THE LITERATURE

Rebecca FRANKS ¹, Nora BROADWELL ¹, Raymond YONG ², Sara KOH ¹, Scott KOH ², Danielle SWEENEY ², Andrea BALTHAZAR ², Albert LEE ¹, Jacob SMITH ² and Chester KOH ²

1) TCH-BCM, Pediatric Urology, Houston, USA - 2) TCH - BCM, Pediatric urology, Houston, USA

PURPOSE

Previous studies in adult patients demonstrated that buccal mucosa graft (BMG) ureteroplasty is an effective surgical option for patients with recurrent ureteropelvic junction obstructions (UPJOs) who failed prior pyeloplasty, and especially among those with long ureteral strictures. However, there has been limited reported experiences with robot-assisted redo pyeloplasty with BMG in the pediatric population.

MATERIAL AND METHODS

In this video, we describe a redo robotic-assisted left pyeloplasty with BMG in a 13-year-old male with a history of bilateral congenital hydronephrosis and recurrent UPJO with persistent narrowing of the left proximal ureter following two previous robotic-assisted pyeloplasties that resulted in persistent flank pain.

RESULTS

Retrograde pyelography showed a long strictured segment of the left proximal ureter (4 cm). A 4cm x 1 cm segment of BMG was harvested from the left inner cheek. After spatulating the ureter on its anterior aspect, the BMG was placed as an onlay graft. A well vascularized omental flap was placed over the graft. At 4 months post-op, the patient was asymptomatic with decreased hydronephrosis and calyceal dilation.

CONCLUSIONS

Similar to adults, BMG ureteroplasty is a viable alternative to more invasive re-operative strategies such as auto-transplantation and nephrectomy for pediatric patients with recurrent ureteral strictures.

S12: HYPOSPADIAS 1

Moderators: Ludy Lopes (IT), Rianne Lammers (NL)

Main Programme on Thursday 4, September 2025, 14:00 - 14:50

14:00 - 14:03

S12-1 (OP)

SHORT AND LONG TERM EFFECTS OF TESTOSTERONE ON BMI, GROWTH PERCENTILE (Z-SCORE) AND GLANS WIDTH IN PATIENTS UNDERGOING DISTAL HYPOSPADIAS REPAIR.

Ashray KAPURIA¹, Karl GODLEWSKI¹, Amelia WILDERMUTH¹, Nathan HYACINTHE¹, Sameer MITTAL¹, Katherine FISCHER¹, Meghan DAVIS², Thomas KOLON¹, Mark ZAONTZ¹ and Christopher LONG¹

1) Children's Hospital of Philadelphia, Pediatric Urology, Philadelphia, USA - 2) Children's Hospital of Philadelphia, Pediatric Urology, Philadelphia, USA

PURPOSE

Testosterone (T) has commonly been used by pediatric surgeons as an adjunct in hypospadias repair because of its effects on penile size. Its ability to increase glans width (GW) has been well documented. We hypothesize that testosterone administration significantly increases BMI and growth percentile in infants undergoing hypospadias repair at time of surgery, but the effects are transient in the short to medium term.

MATERIAL AND METHODS

We queried our prospective hypospadias database for patients undergoing primary distal hypospadias repair between 2015 - 2022. Patients were stratified by whether or not they received T prior to surgery. Height, weight, age, BMI, GW, and Z-score were recorded at initial visit, surgery, 0-6 months, 6-12 months and 12-24 months post operatively. Paired T-tests were used to determine significance with a threshold of 0.05.

RESULTS

In total 341 patients were included; 200 no T, 141 T. There was no difference in age, height, weight, BMI or Z-score at initial visit. At surgery height/weight was significantly increased in the T group vs no T ($p = 0.02$). At 0-6 months post surgery, height, weight and Z-score were significantly increased ($p = 0.001, 0.003, 0.01$ respectively). At 12-24 months post operatively there were no differences in age, BMI, height, weight or Z-score between groups. GW was significantly smaller in the T group at initial visit mean 12.5mm (IQR = 2.5) vs 14.3mm (IQR = 4), significantly larger at surgery 16.8mm (IQR = 3) vs 14.3mm (IQR = 3), and there was no difference in glans width at 2 years post operatively between group means 16.5mm (IQR = 2) vs 16.6mm (IQR = 2).

CONCLUSIONS

Preoperative T has significant transient effect on height, weight, BMI and Z score at the time of surgery, however these differences quickly normalize by 12-24 months after surgery. Testosterone appears to have a durable effect on GW in the long-term.

TOPOGRAPHIC GUIDED REPAIR IN DPH, IS IT RELIABLE?

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PURPOSE

Hypospadias as a prevalent congenital anomaly, has received a lot of interest from surgeons. Different techniques have been adopted to repair it through the years with continuous modifications to reach an optimum outcome. The aim of our study is to compare the well-known TIP repair to the newly adopted Topographic Guided Repair (TGR) (2021).

MATERIAL AND METHODS

A prospective randomized study was conducted in our hospital (between 2022-2024) including patients presenting with fresh DPH. They were assigned randomly to group A (TGR) , group B (TIP). Outcome variables were assessed in both groups during follow up period.

RESULTS

104 patients were assigned groups A (N=52), Group B (N=52). Age range in both groups (3.68 ± 2.29), (3.80 ± 2.65) respectively. Median (IQR) Urethral plate (UP) width in group A and B were 7.0 (6.0-8.2), 8.2 (6.9-9.3) mm respectively. Median glanular width in both groups 11.2 (10.9 - 13.5), 11.1 (10.6-13.9) respectively. Median (IQR) operative time (min) in both groups was 49.5 (44.2- 51.5) vs. 63.2 (57.0-70.0) mins. Median Follow up duration 15.3 (12.2 - 22.6) months. Complications rate in both groups was comparable (8.4% vs. 6.9%) respectively. Hose score was used to assess outcome on both groups. Average score in group A was 13 compared to 14 in group B.

CONCLUSIONS

TGR is a reliable technique and achieving good cosmetic outcome in DPH repair comparable to the validated TIP repair. More future studies with longer follow up are warranted to validate this technique.

PLATELET RICH PLASMA VERSUS DARTOS FLAP AS A PROTECTIVE LAYER IN SURGICAL MANAGEMENT OF DISTAL PENILE HYPOSPADIAS: A COMPARATIVE STUDY

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PURPOSE

Medical Literature describes the use of various tissues such as de-epithelised overlap skin flap, dartos fascia, corpus spongiosum, tunica vaginalis flap and tunica vaginalis graft to provide cover to neo-urethra in hypospadias surgeries

Platelet-rich plasma (PRP) is an autologous plasma fraction with a high platelet concentration, leading to hemostasis, fibrous connective tissue formation and revascularization.

The aim of our study was to evaluate the use of platelet rich plasma (PRP) versus dartos flap as an intermediate layer in the Snodgrass repair of distal hypospadias.

MATERIAL AND METHODS

A prospective randomized study was conducted from June 2022 to June 2024. Patients were divided in to two groups in which dartos flap was inserted as an intermediate layer in the first group while the PRP gel was applied over the neo-urethra as an additional protective layer without the use of dartos flap.

The 2 groups were compared regarding the incidence of fistula occurrence, meatal stenosis, post operative infection, and incidence of total disruption.

RESULTS

The study included 46 patients in each group with a follow-up period ranged from 6-30 months.

There was no significant difference regarding both early and long-term post-operative complications including urethrocutaneous fistula, meatal stenosis, disruption and post-operative infection rates.

CONCLUSIONS

PRP has a potential to prevent early and long-term post-operative complications occurring after hypospadias repair. Moreover, PRP could be a good substitute for dartos flap specially in complicated cases with deficient dartos flap.

THE EFFECT OF AUTOLOGOUS PLATELET-RICH PLASMA (PRP) ON POSTOPERATIVE OUTCOMES IN DISTAL PENILE HYPOSPADIAS REPAIR APPLYING THE TOPOGRAPHY-GUIDED ANATOMICAL REASSEMBLY (STAR) TECHNIQUE

Galal ELSHORBAGY, Abas MOHAMUD, Hani MORSI and Hesham IBRAHIM

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PURPOSE

To evaluate the benefit of using platelet rich plasma covering layer in decreasing the occurrence of urethral fistula post STAR technique repair in Distal Penile Hypospadias

MATERIAL AND METHODS

Forty-four children with distal penile hypospadias at Cairo University Specialized Pediatric Hospital were randomized into two groups children underwent distal penile hypospadias repair by Seleim's Topography-Guided Anatomical Reassembly (STAR) with PRP as covering layer (Group A, n=22) and children without PRP covering layer (Group B, n=22). About 5-10 cc of the whole patients' blood were obtained, centrifuged, and a PRP layer was sutured over urethroplasty as a second layer.

RESULTS

There was no significant difference between group A "with PRP" and group B "without PRP" regarding edema (4.5% vs. 0%, p=1.00), meatal stenosis (4.5% vs. 0%, p=1.00), or mean operative time (70.2±16.5 min vs. 61.1±15.7 min, p=0.068), however, they showed significantly lower incidence of Urethrocuteaneous fistula (4.5% vs. 27.3%, p=0.039).

CONCLUSIONS

The use of platelet-rich plasma as covering layer with STAR technique had revealed reliable outcome to decrease occurrence urethrocuteaneous fistula.

SUCCESS OF PENILE CURVATURE CORRECTION IN THE PREPUBERTAL AND POSTPUBERTAL PERIODS: IS AGE IMPORTANT?

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PURPOSE

This study evaluates the relationship between surgical success and puberty in children with congenital penile curvature (CPC).

MATERIAL AND METHODS

Records of 64 CPC patients without hypospadias treated with simple plication near the 12 o'clock position from 2012 to 2024 were analyzed. Patients were classified as prepubertal (<13 years) or postpubertal (≥ 13 years) based on age and pubertal growth. Curvature $>30^\circ$ confirmed by goniometry during surgery was the indication for intervention. Surgical success was defined as a residual curvature of $<10^\circ$ during follow-up.

RESULTS

Of the 64 patients, 23 (35.9%) were prepubertal and 41 (64.1%) were postpubertal. Mean ages were 97.4 months (prepubertal) and 168 months (postpubertal). There was no significant difference in preoperative curvature degree between groups ($p>0.05$). Follow-up was 65.8 months (prepubertal) and 91.6 months (postpubertal). Residual curvature $\geq 10^\circ$ occurred in 2 (8.6%) of prepubertal and 4 (9.7%) of postpubertal patients. No patients reported sensory loss or erectile dysfunction. Overall success rates were 91.4 % in the prepubertal group and 90.3% in the postpubertal group, with no significant difference ($p>0.05$).

CONCLUSIONS

Penile plication demonstrates comparable success rates in both prepubertal and postpubertal CPC patients. However, further studies with larger sample sizes are needed to clarify the impact of age on outcomes.

14:28 - 14:31

S12-6 (OP)

LONG- TERM OUTCOMES OF SURGICAL INTERVENTION FOR VENTRAL PENILE CURVATURE IN CHILDREN: LONG-TERM OUTCOMES FROM BOTH SURGICAL AND PATIENT-REPORTED ASPECTS

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PURPOSE

Long-term outcomes of early surgical correction for isolated ventral penile curvature, particularly patient-reported outcomes and complication rates, are scarce. We aim to fill this gap.

MATERIAL AND METHODS

Twenty-four pediatric patients treated for isolated ventral penile curvature (born 1991-2003). Median age at surgery was 1.6 years (IQR 1.2-2.6), median preoperative curvature was 60° (IQR 30-75), and median follow-up was 14 years. Surgery included degloving alone (12 patients) or degloving with Nesbit-like dorsal tunical plications (12 patients). Post-pubertal outcomes were assessed using the Danish Prostatic Symptom Score (DAN-PSS), Erection Hardness Score (EHS), and Penile Perception Score (PPS), with a 75% response rate.

Complications were graded using the Clavien-Madadi classification. Results were compared to published controls and a matched DAN-PSS control group.

RESULTS

Short-term outcomes were favorable, with no grade III or higher complications within three months. Long-term reoperations were required in 16.7%: one patient for residual curvature (grade IIIb) and three for cosmetic revisions (grade IIIa). Two underwent cystoscopy for uroflowmetry issues (grade II). Functional outcomes showed 87.5% achieved EHS4, and 93.8% reported successful ejaculation, with PPS scores comparable to published data. Compared to the DAN-PSS control group, urinary symptom scores were similar. No participants expressed decisional regret, and 88.9% endorsed appropriate timing of surgery. Dissatisfaction was minimal, related to penile skin appearance or residual curvature.

CONCLUSIONS

Early surgical correction of isolated ventral penile curvature achieves favorable long-term outcomes with a low rate of grade III complications. Functional and patient-reported outcomes were comparable to controls, supporting early intervention to address technical and patient-centered goals.

14:31 - 14:34

S12-7 (OP)

DATA- DRIVEN DORSAL MIDLINE PLICATION FOR PENILE CURVATURE CORRECTION IN TANNER STAGE I HYPOSPADIAS: EFFICACY AND IMPACT ON PENILE LENGTH

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PURPOSE

Dorsal midline plication (DMP) corrects residual penile curvature after degloving and urethral plate transection (UPT) in hypospadias repair. This study introduces a data-driven DMP technique for Tanner Stage I hypospadias, achieving effective curvature correction with minimal shortening.

MATERIAL AND METHODS

Tanner I hypospadias patients treated from October 2020 to April 2024 were retrospectively analyzed. All underwent penile degloving and DMP, with UPT performed for urethra-related curvature. Sutures were placed along the dorsal midline at the curvature apex, with proximal and distal distances of 2-4 mm and a middle distance of (curvature angle/10) mm. Curvature angles and stretched penile lengths were measured preoperatively, post-degloving, post-UPT (if applicable), and post-DMP.

RESULTS

Among 381 patients (270 with UPT, 111 without), preoperative curvature ($29.59 \pm 32.53^\circ$) was corrected to 0° . In UPT cases, post-DMP length was shorter than post-UPT (48.47 ± 5.94 vs. 49.29 ± 6.02 mm, $p < 0.001$), but the postoperative length was longer than preoperative one (47.49 ± 5.70 mm vs. 46.66 ± 5.74 mm, $p < 0.001$). In non-UPT cases, post-DMP length was shorter than post-degloving (53.03 ± 5.93 vs. 53.64 ± 5.83 mm, $p < 0.001$),

but postoperative length was not changed significantly from preoperative length (52.34 ± 5.80 mm vs. 52.14 ± 5.82 mm, $p = 0.244$).

CONCLUSIONS

The data-driven DMP technique effectively corrects curvature in Tanner I hypospadias with minimal shortening. Penile degloving and UPT contribute to lengthening, ensuring that postoperative penile length is preserved or even increased.

14:34 - 14:50

Discussion

S13: DSD 1

Moderators: Liam Mc Carthy (UK), Gillian Barker (SWE)

Main Programme on Thursday 4, September 2025, 14:50 - 15:30

14:50 - 14:53

S13-1 (OP)

RNA SEQUENCING PROFILES IN GONADS OF PAEDIATRIC PATIENTS WITH 46 XX SRY-NEGATIVE OVOTESTICULAR DSD: A SINGLE CENTRE STUDY

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PURPOSE

We studied the genetic makeup of OT-DSD patients from a well-defined area within eastern South Africa with high incidences of DSD. Next generation RNA sequencing was undertaken on 14 gonadal biopsies of patients with OT-DSD managed from the aforementioned area to evaluate gene profile expressions.

MATERIAL AND METHODS

Gonadal biopsies in patients with confirmed ovotesticular DSD were evaluated morphologically and by Illumina RNA-Seq analysis. Relative gene expression for pro-ovarian and protesticular markers were assessed

RESULTS

Results revealed global over expression of pro-ovarian and under expression of pro-testis genes respectively. Morphology could not reliably identify which gonads were pure ovary, pure testis, or intermixed ovotestis, and gonads often differed in the same patient. Furthermore, a single genetic cause was not responsible but it appears that groups of genes seem to work in concert to mediate pro-testis gene expression

CONCLUSIONS

Intermixed ovotestis often harbour sites of hidden ovarian or testicular tissue, which is easy to miss on morphology. Furthermore, in this case series the expression of ovarian and absence of testicular genes seem to be driving the development of ovotestes. No single gene or gene product seems to be the cause, but rather groups of genes and their effects

WHOLE GENOME SEQUENCING FOR PATIENTS WITH SUSPECTED DIFFERENCES OF SEX DEVELOPMENT: A PILOT AND FEASIBILITY STUDY

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PURPOSE

Patients with suspected differences of sex development (DSD) frequently face a stressful diagnostic testing odyssey; yet less than half currently receive a genetic diagnosis. Whole genome sequencing (WGS) broadly evaluates for pathogenic genetic changes, with results in about one month. This pilot study aimed to explore the potential role of whole genome sequencing (WGS) to improve diagnostic yield and speed among patients with suspected DSD.

MATERIAL AND METHODS

Patients with suspected DSD and no genetic diagnosis were recruited. Demographic/clinical characteristics, prior genetic testing, and WGS results were summarized.

RESULTS

Of 27 patients approached, 13 enrolled (median age 4.3 years, 85% assigned male). Clinical characteristics: 92% 46,XY, 69% at least 1 comorbidity, 31% family history of DSD, 23% premature. Endocrine testing results: 38% gonadal dysfunction, 0% adrenal dysfunction. Before enrollment, eight patients (62%) had 14 genetic tests beyond karyotype, 10 of which could have been replaced by WGS. After enrollment, two patients had diagnostic WGS (one DHX37-, one SF1-associated 46,XY DSD), and two had possible diagnoses (SAMD9 variant of unknown significance (VUS): mild MIRAGE syndrome; KDM1A VUS). Two of these four patients had prior negative genetic testing. Three patients had non-DSD variants discovered that changed medical management. Seven had non-diagnostic WGS.

CONCLUSIONS

WGS is a feasible comprehensive genetic testing option for patients with suspected DSD. Nearly half of patients had clinically actionable diagnoses uncovered, including 31% with a known/possible DSD. WGS demonstrated potential for reduced number of diagnostic tests among patients with and without a diagnosis uncovered.

RELIABILITY OF PRENATAL DIAGNOSIS OF DSD (PD-DSD) AND PREDICTIVE FACTORS FOR SEVERE PHENOTYPES

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PURPOSE

Technological advancements make PD-DSD more common. Its reliability is sparsely reported and it remains difficult to rationalize prenatal counselling and fetal management. We aimed to analyze the 1-correlation between prenatal and postnatal findings, 2-prognostic factors for severe DSD, 3-rate of associated malformations.

MATERIAL AND METHODS

Multicenter retrospective study including fetuses with atypical genitalia during pregnancy (8 centers, 2003-2022). Pregnancy history, ultrasound findings and neonatal phenotype were collected using a form validated by a national multidisciplinary working group.

RESULTS

443 patients were included. Mean gestational age at diagnosis was 27+3 weeks, diagnosis was possible at any time (12-41w). The main circumstance of diagnosis was direct visualization of atypical genitalia (69%), including aspect of hypospadias (n=274), abnormal genital tubercle (n=113), genital swelling (n=107) or undetermined sex (n=24). Other circumstances included a discrepancy between chromosomal and ultrasound sex (3.9%) and the presence of other congenital defects leading to PD-DSD (25%). Overall, the positive predictive value of PN-DSD was 84%. Clinical spectrum at birth was wide, ranging from isolated anterior hypospadias to complex DSD. Risk factors for severe XY-DSD (posterior hypospadias and/or micropenis, n=230) were diagnosis at 1st trimester (p<0.001), aspect of posterior hypospadias on US (p<0.001) and presence of IUGR (p=0.01). Associated congenital defects were particularly frequent (n=182, 41.4%, identified syndrome 19%).

CONCLUSIONS

PD-DSD is reliable in 84% of cases. Minor or severe genitalia defects may be diagnosed. Early diagnosis, associated IUGR and aspect of posterior hypospadias are predictive of severe XY-DSD. Associated malformations are frequent. Next step is to determine which fetuses require prenatal molecular testing.

14:59 - 15:08

Discussion

15:08 - 15:11

S13-4 (OP)

SHORT-TERM IMPACT OF NEWLY IMPOSED LEGAL RESTRICTION ON DSD SURGERY IN CHILDREN IN GERMANY

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PURPOSE

In recent years, changing cultural and scientific paradigms have fundamentally altered the approach to the treatment of children with Disorders of Sexual Development (DSD) prior to reaching the age of legal consent. In Germany, the situation changed with the introduction of legislation that includes a partial ban on DSD surgery in children in 2021. This study aims to analyze the impact of this legislation on clinical practice.

MATERIAL AND METHODS

From 2014 to 2024, all patients with DSD in our institution were included. The study group comprised all patients operated on after the legislation. All patients operated on before the legislation served as the control group. Karyotype, phenotype, resulting type of DSD, age at presentation and age at operation were recorded.

RESULTS

35 patients were included in this study, 15 in the study group and 20 in the control group. The operation was authorized by the family court for all patients in the study group. 46,XY patients with severe hypospadias were the largest proportion (25 patients, 71.4%). Nine patients (25.7%) were 46,XX girls with classical congenital adrenal hyperplasia (CAH) type. One patient (2.9%) showed a mixed gonadal dysgenesis. The mean age of the patients at first presentation was 10.7 months in the control group and 11.0 months in the study group. The mean age at operation was significantly higher in the study group (20.1 months) compared to the control group (15.1 months; $p = 0.032$, unpaired t-test).

CONCLUSIONS

The introduction of the legislation with a partial ban of genital surgery in DSD children in Germany has led to a significant delay in surgery. Since most patients have severe hypospadias and 46,XX CAH patients, exclusion of

these diagnoses was proposed during mandatory evaluation of the law based on the results of this study. Further amendments or changes of the legislation based on this evaluation are pending.

15:11 - 15:14

S13-5 (OP)

IMPACT OF THE ANTICIPATION OF THE NEW FRENCH LEGISLATION ON THE SURGICAL MANAGEMENT OF CHILDREN WITH DISORDERS OF SEX DEVELOPMENT

Thomas BLANC¹, Claire BOUVATTIER², Lise DURANTEAU³, Yves HÉLOURY¹, Dinane SAMARA BOUSTANI⁴, Benjamin MORON PUECH⁵, Jérôme BERTHERAT⁶, Nicolas KALFA⁷ and Anne Sophie JANNOT⁸

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PURPOSE

The French Rare Diseases Registry collects a set of data for each person attending a rare disease expert centre in France, among them expert centres on Disorders of Sex Development (DSD). In this study, we analyse the surgical care pathway of children having severe DSD born in France, in the context of evolving regulations for genital surgical management.

MATERIAL AND METHODS

We included all children having severe DSD born between 2015 and 2020 from the French Rare Diseases Registry. Based on a linkage with the health national care claims data, we extracted information regarding genital surgical procedures during their first three years of life.

RESULTS

769 children were included, which leads to an estimated incidence of 1.7 cases per 10,000 births. 91% of them had one of the three following pathologies: posterior hypospadias of unknown aetiology (53%), congenital adrenal hyperplasia (21%), and gonadal dysgenesis (18%). The surgery rate at 3 years old for girls with congenital adrenal hyperplasia has significantly decreased from 50% for between 2015 and 2017 to 19% between 2018 and 2020, while the one for boys born with a posterior hypospadias has slightly decreased, from 89% to 83%.

CONCLUSIONS

A significant decrease in surgeries for children with marked DSD before the age of 3 is observed, especially for 46 XX DSD. This should be viewed in relation to the fact that the period covered by this study precedes the evolution of the French legislation, showing that pediatric surgeons and endocrinologists have changed their practices prior to the legislation.

15:14 - 15:19

S13-6

15:19 - 15:30

Discussion

S14: DELPHI PROCESS

Moderators: Alexander Springer (AU), Gundela Holmdahl (SWE)

Main Programme on Thursday 4, September 2025, 15:30 - 16:00

15:30 - 15:40

Talk

15:40 - 15:43

S14-1 (OP)

DEVELOPMENT OF MULTIDISCIPLINARY FOLLOW-UP GUIDELINES FOR HYPOSPADIAS PATIENTS USING THE MODIFIED DELPHI METHOD

Vinaya BHATIA¹, Walid A FARHAT¹, Shannon CANNON¹, Kristin EBERT¹, Emilie JOHNSON², Renea STURM³, Christopher LONG⁴, Pankaj DANGLE⁵, Lauren CORONA⁶, Sebastian HASKE⁷ and Jane MAHONEY⁸

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PURPOSE

Long-term studies of patients treated for hypospadias demonstrated that up to 53% of patients have long-term functional and psychosexual concerns. We hypothesized that multidisciplinary consensus-based screening questionnaire with follow-up guidance could be developed with Modified Delphi methodology.

MATERIAL AND METHODS

We conducted an IRB-approved Modified Delphi including physicians and advance practice providers in pediatrics, urology, psychology, endocrinology, adolescent and adult patients, and parents of patients with hypospadias. A threshold of 75% of participants stating "Agree/Strongly Agree" was considered sufficient for inclusion of the statement in the final questionnaire over 3 iterative rounds of consensus. In the 4th round, respondents were asked to recommend referral services and timeframe based on each concern.

RESULTS

A total of 31 members (24 health care practitioners, 7 families including patients and parents) participated, involving 65 proposed statements. Of the 49 final items in the questionnaire (Table), 25 (50%) mapped to guidance to see a Urologist, while the remaining 25 (50%) mapped to Psychological or Sexual Counselor Referral.

Table

Thematic Domain (No. Items)	Referrals	Time Frame Range (months)
Penile Function (4)	Urologist, Endocrinologist	3-12
Voiding Function (11)	Urologist, Primary Care	3
Sexual Health (8)	Psychologist, Sexual Counselor	3-12
Social Health (10)	Psychologist, Urologist, Primary Care	3-12
Psychological Health (7)		
Doctor-Patient Communication (9)		

CONCLUSIONS

The Delphi method enabled multidisciplinary consensus on a questionnaire that aligns specific concerns with referral guidance for long-term functional and psychosexual monitoring after hypospadias repair. Future research will assess the feasibility and effectiveness of this tool to improve health-related quality of life for patients.

15:43 - 15:46
S14-2 (OP)

PRIORITIZING HYPOSPADIAS RESEARCH: A DELPHI-AI APPROACH TO
DEFINING CRITICAL QUESTIONS

Tariq Osman ABBAS ¹, Renea STURM ², Putu Angga RAHARJA ³, Ibrahim ULMAN ⁴, Grahame SMITH ⁵, Asma JAMIL ⁶ and Fatima CHOKOR ⁷
1) Sidra Medicine, Urology, Doha, QATAR - 2) David Geffen School of Medicine at UCLA, Department of Urology,, Los Angeles, USA - 3) Universitas Indonesia, Department of Urology, Faculty of Medicine, Jakarta, INDONESIA - 4) Ege University, Faculty of Medicine, Department of Urology, Division of Pediatric Urology, Izmir, TÜRKIYE - 5) The Sydney Childrens Hospital Network,, Department of Urology,, Sydney, AUSTRALIA - 6) Sidra Medicine, Department of Urology, Division of Pediatric Urology, Doha, QATAR - 7) College of Health Sciences, Qatar University, Department of Public Health,, Doha, QATAR

PURPOSE

To identify and prioritize critical research questions in hypospadias, a common congenital anomaly in male genitalia, to improve assessment, treatment, and outcome prediction. By combining expert consensus with AI insights, this study aims to establish a roadmap for advancing hypospadias research.

MATERIAL AND METHODS

We employed a Delphi consensus method to prioritize key research questions in hypospadias. Out of 1,867 potential experts identified and invited, 121 experts completed the scoping survey and submitted 156 hypospadias priority research questions. Round 1 involved 11 experts rating 63 of these questions. Additionally, insights from the AI platform ChatGPT were integrated into the process. Feedback from clinicians, researchers, and patient advocates worldwide was collected over multiple rounds. Round 2 expanded the process by incorporating 31 questions proposed by ChatGPT and 9 additional questions from the steering committee.

RESULTS

In round 1, 28 of 63 questions met consensus criteria as critically important, grouped under four main themes: Etiology, Phenotyping, Surgical Techniques, and Post-operative Outcomes. The remaining 35 questions were reviewed, with 11 removed and 24 forwarded to round 2. In round 2, panelists re-rated 85 questions, including 31 proposed by ChatGPT and 9 added by the steering committee. By the end of round 2, 18 additional questions met consensus criteria, bringing the total to 46 critically important research questions. The Delphi process also identified key themes in hypospadias research, including etiology, tissue engineering, pre-clinical models, device/technology evaluation, phenotyping, surgical techniques, surgical training, and postoperative outcomes.

CONCLUSIONS

This Delphi-AI study establishes a prioritized set of research questions in hypospadias. By combining expert consensus with AI insights, these findings will inform future research directions, clinical practice, and innovative approaches to improving outcomes for hypospadias patients globally.

15:46 - 15:49

S14-3 (OP)

ERN EUROGEN- CLINICAL CONSENSUS STATEMENTS ON POSTERIOR URETHRAL VALVES

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PURPOSE

Posterior Urethral Valves (PUV) is a rare congenital condition characterized by urethral obstruction, significantly impacting long-term bladder and renal function. Evidence-based guidance on PUV management is sparse, leading to variability in clinical practice across Europe. This study aimed to establish clinical consensus statements through a multidisciplinary expert panel within ERN eUROGEN, and a clinical decision support tool, to standardize care and improve outcomes for PUV patients.

MATERIAL AND METHODS

A panel of 15 pediatric urology experts from 10 European countries was convened. A systematic literature review of the last twenty years identified 2,744 relevant studies, which were screened and summarized according to predefined inclusion criteria. Using a modified Delphi method, 80 statements across six key topics—antenatal diagnosis, perinatal management, surgical intervention, bladder management, follow-up, and quality of life—were iteratively reviewed, refined, and voted on over three rounds. Consensus was defined using a 9-point Likert scale with predetermined thresholds.

RESULTS

A total of 47 consensus statements were finalized, covering major aspects of PUV management. Key recommendations include: consultation with pediatric urologists for antenatal suspicion of PUV, proactive lifelong bladder monitoring using non-invasive and invasive methods, and pre-transplant bladder optimization for renal transplantation candidates. Additional statements emphasized the importance of multidisciplinary care, tailored psychosocial support, and addressing quality-of-life issues throughout the patients' life. Evidence levels for the statements ranged from level of evidence 2 to expert opinion.

CONCLUSIONS

These consensus statements provide a framework for standardized, evidence-informed PUV management across Europe. They highlight the importance of proactive, multidisciplinary approaches to improve patient outcomes and quality of life. The process also underscores the value of a collaborative transnational approach, in the furtherance of rare disease management based on best available evidence and the utility of consensus.

15:49 - 16:00

Discussion

S15: HYPOSPADIAS 2

Moderators: Peter Furness (USA), Valeska Bidault-Jourdain (FR)

Main Programme on Thursday 4, September 2025, 16:30 - 17:30

16:30 - 16:34

S15-1 (OP)

HISTOPATHOLOGICAL INSIGHTS INTO VENTRAL DARTOS FASCIA: IMPLICATIONS FOR CHORDEE CORRECTION AND HYPOSPADIAS REPAIR

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PURPOSE

The cause of penile curvature (PC) in hypospadias remains unclear. Surgical correction through dartos fascia resection can straighten the penis, suggesting its role in superficial PC. This study aimed to compare collagen density and gene expression of COL1A1, COL3A1, and ELN in proximal and distal dartos fascia of hypospadias patients and age-matched controls.

METHODS

In this prospective case-control study, 50 hypospadias patients (25 distal, 25 proximal) and 50 age-matched controls were included. Dartos samples were collected from proximal and distal ventral penile regions in hypospadias cases, and from the coronal area in controls. Collagen density was assessed histologically using Masson's trichrome staining, and gene expression was quantified using real-time polymerase chain reaction (RT-PCR). Subgroup analyses were performed based on hypospadias type and PC severity.

RESULTS

Significant differences of collagen density, COL1A1, COL3A1, and ELN were observed among distal dartos, proximal dartos, and controls ($p < 0.01$). The proximal dartos exhibited the most consistent reduction across all markers ($p < 0.01$). In distal hypospadias and mild PC, the distal dartos remained comparable to controls ($p > 0.05$), while the proximal dartos showed significantly reduced values ($p < 0.001$). In proximal hypospadias and severe PC, both dartos regions were affected, with the distal dartos showing more pronounced reductions in COL3A1 and ELN ($p < 0.05$). The COL3A1:COL1A1 ratio was also significantly reduced in hypospadias patients, particularly in the proximal dartos and in those with moderate to severe penile curvature.

CONCLUSION

The extracellular matrix composition of dartos fascia in hypospadias varies according to anatomical location and severity. The distal dartos may be preserved for neourethral coverage in distal hypospadias and mild PC, while excision may be more appropriate in proximal hypospadias (Level of Evidence: III).

16:34 - 16:38

S15-2 (OP)

MECHANICS OF MULTILAYER FLEXIBLE PIPES: BIOMECHANICAL INSIGHTS ON PENIS FLEXIBILITY THAT CAN GUIDE PENIS SURGERY

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PURPOSE

This study uses the analogy of multi-layered flexible pipes to provide a biomechanical explanation for why the penis is flexible when flaccid and rigid when erect, aiming to guide penile surgery.

MATERIAL AND METHODS

The hypothesis uses an energy-based hyperelastic multi-layered model to explain how the layers of the penile shaft respond to internal pressure and friction forces, enabling flexibility and rigidity. Structural differences in layers such as the tunica albuginea, Buck's fascia, dartos fascia and skin, along with energy losses, particularly those involving internal pressure transmission, were considered. For this purpose, a non-linear model was developed based on the Mooney-Rivlin model, hyperelasticity theory, and Coulomb's law of friction.

RESULTS

The results show that the inner layers are subjected to higher pressure, and as pressure increases, they become stiffer and more resistant to expansion, contributing to rigidity during erection. Increased internal pressure also raises friction forces between the layers, limiting longitudinal expansion and supporting rigidity. This model explains that in addition to the veno-occlusive mechanism, higher internal pressure increases friction between the layers of the penis, making it more difficult to glide, reducing flexibility, and raising temperature due to energy loss.

CONCLUSIONS

This study provides new insights into the biomechanics of penile flexibility. Impaired penile flexibility and ventral curvature in hypospadias and other penile malformations can be considered as an indication of impaired multi-layered mechanics of the penis.

UROLOGICAL, SEXUAL AND MOOD WELL-BEING FOLLOWING SURGICAL TREATMENT FOR HYPOSPADIAS AT A TERTIARY REFERRAL CENTER: A RETROSPECTIVE STUDY

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PURPOSE

Pediatric urology surgeries often address anatomic pathologies that may cause dysfunction in adulthood, with hypospadias being one of the most common. This study evaluates postoperative outcomes, focusing on urological and sexual function, and their impact on mood disturbances.

MATERIAL AND METHODS

Data from men with hypospadias managed between 1972 and 2007 at tertiary referral center were collected. At follow-up, patients completed the International Prostate Symptoms Score (IPPS) and IPPS-Quality of Life (QoL), the Beck's Depression Inventory (BDI), and the International Index of Erectile Function [IIEF, divided into 5 domains: erectile function (EF), orgasmic function (OF), intercourse satisfaction (IS), sexual desire (SD), overall satisfaction (OS)]. Patients were classified into two groups: distal (Group 1) and proximal (Group 2) hypospadias. Descriptive statistics and logistic regression tested association between surgical characteristics and IPSS-QoL.

RESULTS

Of 354 patients, 41 (12.7 %) had complete data at a median (IQR) follow-up of 25 (21-29) yrs. Median age (IQR) at surgery was 22 (12-54) months in Groups 1 and 16.5 (11-33) months in Group 2. Complications were significantly higher in Group 2 (67.9% vs. 24.1%; $P<0.001$), with fistula being the most common (69.4% vs. 47.4%). Erectile dysfunction was reported by 13 (38.2%) men in Group 1 and 3 (42.9%) in Group 2, with the other IIEF domains similar between groups. Median (IQR) IPSS-QoL were significantly worse in Groups 2 [3 (2-4) vs. 1 (0-1), $P=0.004$]. Multivariable logistic regression analyses showed the presence of complications as the only independent predictor of IPSS-QoL (OR 0.11; 95%CI 0.005-0.85; $P=0.06$), after adjusting for possible confounders. No significant differences were found in IPPS and BDI scores between groups.

CONCLUSIONS

The presence of complications was the strongest predictor of poor IPPS-QoL, highlighting the need of tailored long-term follow-up in this sub-cohort of patients to ensure unmet need.

IMPACT OF CATHETER DIAMETER ON COMPLICATIONS AND REOPERATIONS IN HYPOSPADIAS SURGERY

Suzanne OOSTLAND ¹, Floor ROZEMEIJER ¹, Fred VAN DER TOORN ² and Rogier SCHROEDER ³

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PURPOSE

In pediatric distal hypospadias repair, varying catheter diameters are employed for neourethral reconstruction. The longterm impact of the intra-operative catheter diameter on postoperative outcomes are not well studied. This study aims to investigate the correlation between intraoperative catheter diameter and the incidence of complications and reoperations at the age of five.

MATERIAL AND METHODS

This study is part of the prospective multi-centered observational cohort study, the Dutch Hypospadias Study. 728 pediatric patients were included. Inclusion criteria were restricted to patients requiring neo-urethral construction during the hypospadias surgery. Subjects were stratified by urethral catheter diameter used in urethroplasty into two cohorts: smaller-caliber catheters (Ch 6, Ch 8) and larger-caliber catheters (Ch 10, Ch 12). Outcome measures were assessed at six months and five years postoperatively (mean follow up 3.8 years). The primary outcome measures included the incidence of postoperative complications; wound dehiscence, meatal stenosis and fistula formation. The need for surgical revision was evaluated as the secondary outcome.

RESULTS

No significant differences were observed in the incidence of intracutaneous fistula formation or meatal stenosis between the two groups. Significantly more patients had a wound dehiscence in the larger-caliber cohort (15.2% vs. 7.0% in the smaller-caliber cohort). Also the larger-caliber cohort showed significantly more reoperations (21.0% vs. 8.7% in the smaller-caliber cohort).

CONCLUSIONS

The intraoperative catheter size in hypospadias surgery significantly affects the postoperative outcomes wound dehiscence and leads to a higher reoperation rate. Careful preoperative planning and consideration of catheter size appears of the essence. However, additional studies are required to evaluate its correlation with long-term functional outcomes.

EFFECTS OF TANNER STAGE ON POSTOPERATIVE UROFLOW RESULTS IN HYPOSPADIAS PATIENTS WITH >10 YEARS FOLLOW-UP

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PURPOSE

Uroflowmetry is a commonly used tool in postoperative evaluation of hypospadias patients, however, interpretation of uroflow is difficult. Factors including time since surgery, initial meatus location, age, voided volume and complication type have been shown to influence uroflowmetry results. We hypothesized that Tanner stage is associated with improved postoperative uroflowmetry results after hypospadias repair and aimed to determine at which Tanner stage improvements in max flow rate (Qmax) could be expected.

MATERIAL AND METHODS

Distal (DH) and proximal (PH) hypospadias patients >13 years old, with >10 years of follow-up and at least one uroflow were included. First, we evaluated patients with no complications and recorded Qmax values. The data were stratified by time since surgery 0-5 years, 5-10 years, 10+ years and Tanner stage (I-V). We also analyzed Qmax in patients who underwent surgical repair of urethral stricture. Flows <50mL were excluded.

RESULTS

177 patients were included (91 DH and 86 PH). 63/177 of these patients (49 DH/14 PH) had no complication and mean Qmax (cc/s) increased with time since surgery (Mean Qmax cc/sec DH: 0-5 yr = 8.7, 5-10 yr = 12.2, 10+ yr = 19.8. PH: 0-5 yr = 11.8, 5-10 yr = 11, 10+ yr = 19.7). Improvement in Qmax for DH patients without complication began at Tanner III versus Tanner IV for PH patients. Patients with a urethral stricture had a mean Qmax of 4ml/sec which was similar regardless of Tanner stage or meatus location. Mean Qmax for patients with uroflow >10yrs from surgery were; DH 17.9cc/sec, PH 15.2cc/sec.

CONCLUSIONS

Uroflow Qmax gradually increases with time from surgery for both DH and PH patients who did not have a surgical complication. Tanner stage may be a better predictor of expected uroflow improvement than time from surgery. PH patients may have delayed Qmax improvement compared to DH patients.

THE IMPACT OF STRUCTURED VS. STANDARD VERBAL POSTOPERATIVE INFORMATION ON PARENTAL ANXIETY IN HYPOSPADIAS SURGERY

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PURPOSE

In this study, we aimed to compare preoperative and postoperative structured information forms.

MATERIAL AND METHODS

Between 01/12/2023 and 01/12/2024, the parents of patients scheduled for hypospadias surgery were divided into two groups. Preoperatively, both Group 1 and Group 2 received structured audiovisual information about the surgery, and the State-Trait Anxiety Inventory Form - State Anxiety (STAI-I) was completed. In the postoperative period, Group 1 received a structured written information document, including intraoperative images related to the surgery, whereas Group 2 was provided with standard verbal information. On the 10th postoperative day, participants were asked to complete the STAI-I again.

RESULTS

A total of 210 parents were included in the study, with Group 1 (n=105) and Group 2 (n=105). The preoperative STAI-I scores were 46.7 ± 4.5 for Group 1 and 45.4 ± 4.9 for Group 2, with no statistically significant difference between the groups ($p=0.8$). Postoperative STAI-I scores were recorded as 51.3 ± 3.9 in Group 1 and 58.4 ± 4.5 in Group 2. The postoperative anxiety levels were significantly lower in Group 1 compared to Group 2, and this difference was found to be statistically significant ($p=0.001$).

CONCLUSIONS

This study indicates that structured written postoperative information, including intraoperative images, is associated with lower parental anxiety compared to standard verbal information.

Postoperative information is just as important as preoperative information in reducing parental anxiety and enhancing understanding of the surgical process

PATIENT-REPORTED OUTCOMES IN HYPOSPADIAS: RESULTS OF A MULTICENTRIC LONG-TERM STUDY

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PURPOSE

Surgical correction of hypospadias is often performed during childhood. This study aims to assess the degree of adolescent and adult patient satisfaction using patient-reported outcome measures.

MATERIAL AND METHODS

Male patients aged at least sixteen, operated during childhood for hypospadias in two reference centres and without prior treatments at other hospitals, were contacted for this study. Those who agreed to participate received a questionnaire via email containing single questions and the H.O.S.E., P.P.S., and S.I.G.H.T. tests. A descriptive analysis of the responses was followed by statistical analysis using Pearson's Chi-square test and Fisher's exact test, with significance set at $p < 0.05$, to determine if there was a correlation between patient satisfaction and the type of hypospadias or the need for reintervention due to complications.

RESULTS

184 patients answered the questionnaire. 82.9% of these had distal and 17.1% proximal hypospadias. Global sexual satisfaction outcomes range from 70% to 80.4%, urinary satisfaction 66.2% and cosmetic satisfaction from 62.3% to 83.9%. Median HOSE score was 14 (IQR), median PPS 8 (IQR) and median SIGHT 33 (IQR). Stratification for distal VS non-distal hypospadias produced a statistically significant difference in three items: satisfaction with the appearance of penis, shape of the external urethral meatus, sexual activity. Only HOSE score showed a significant difference between distal and non-distal hypospadias (14 vs 13), while SIGHT score was significantly lower in patients who underwent reintervention (33 vs 28).

CONCLUSIONS

Adolescent and young adults who underwent surgical correction of hypospadias in childhood report acceptable long-term outcomes. Very long-term follow-up and standardized outcomes reporting, possibly in large and multicentre studies, will help confirm these results.

SEXUAL FUNCTION IN ADOLESCENCE AFTER HYPOSPADIAS REPAIR IN CHILDHOOD

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PURPOSE

This study evaluated sexual outcomes in post-pubertal patients after hypospadias repair in early childhood.

MATERIAL AND METHODS

The hypospadias patients born between 1991 and 2003 completed a sexual function questionnaire including the Erection Hardness Score (EHS) during the last control visit. We included all 171 patients who answered the premailed questionnaire. Curvature, when present, was corrected with dorsal Nesbit plication in 64 patients. Results were compared to previously published controls.

RESULTS

All patients were operated on before the age five (98 distal, 20 midshaft and 53 proximal hypospadias) and the median age at last visit was 16.2 years (15-21.2). Self-reported penile straightness was noted in 159 (93.0%) cases (in 92/96 (97%) of distal, in 19/20 (95%) of midshaft and in 48/51 (94%) of proximal cases ($p=0.90$) and in 103/106 (97%) cases without and in 56/60 (93%) cases with Nesbit plication ($p=0.24$)). EHS grade 4 was achieved in 119/161 (73.9%) patients (in 64/93 (69%) of distal, in 17/20 (85%) of midshaft and in 38/48 (79%) of proximal cases ($p=0.20$) and in 77/103 (75%) patients without and in 42/57 (74%) with Nesbit plication, ($p>0.99$)). EHS grade 4 was even more common than in the controls from the literature ($p<0.01$). Ejaculation was reported in 95% of patients. No patient reported pain during erection, but one patient had pain during ejaculation.

CONCLUSIONS

This study demonstrates favorable sexual outcomes, comparable to controls, in most adolescents following hypospadias repair. The severity of hypospadias or the history of Nesbit plication had no significant influence on the outcome.

S16: CASE REPORTS 2

Moderators: Marcel Drlík (CZE), Michele Gnech (IT)

Parallel Programme on Thursday 4, September 2025, 08:00 - 08:50

08:00 - 08:04

S16-1 (CP)

PAINFUL BLADDER DISORDER (SEVERE INTERSTITIAL CYSTITIS) IN TODDLER, ASSOCIATED WITH A TP63 MUTATION

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PURPOSE

To present a case of a young girl with severe painful bladder disorder and a TP63 mutation.

MATERIAL AND METHODS

Girl born in November 2020 with polydactyly/syndactyly and cleft lip. From 2 months of age increasing stomach pain, disturbed sleep. At 1 year, more clearly related to micturition. Due to painful bladder filling, cystometry was performed in anaesthesia in April 2022 which showed reduced BC and normal raise in pressure, but signs of pain already at 60 mL. Cystoscopy showed severe interstitial cystitis and a vesicostomy button was placed. Between 2-3 years of age: daily bladder irrigations due to recurrent cystitis, Oxybutynin instillations twice daily for 6 weeks with no actual improvement, regularly bladder instillation with chondroitin sulphate (Gepan®) (1-2x/week) with temporary pain relief, Coeliac diagnosis. Due to hereditary (aunt and grandmother with chronic cystitis) a genetic analysis was performed which showed a mutation in TP63 (Ectrodactyly, ectodermal dysplasia, and cleft lip/palate syndrome-3 - EEC3 syndrome), associated with split hand/foot, cleft lip/palate and micturition difficulties. Father has the same mutation. An attempt with Botox injection was also performed with a temporary pain relief, but still a desperate, unsustainable situation with daily severe pain. Therefore, in April 2024 we disconnected the bladder from the urinary system by performing bilateral cutaneous ureterostomies.

RESULTS

After surgery the patient is completely painfree. She is growing and thriving. We have performed cystoscopy with bladder irrigation every 2nd months and dilated one ureterostomy that became stenotic.

CONCLUSIONS

EEC3 syndrome has a variable clinical manifestation and micturition difficulties have been described in the literature. Although our patient was presenting with severe symptoms at an earlier age than previously acknowledged. We have shown that bypassing the bladder can achieve complete pain relief in these rare cases with severe pain and interstitial cystitis.

APPENDICEAL INTERPOSITION URETEROPLASTY FOR IATROGENIC URETERO-ILIAC ARTERY FISTULA IN A YOUNG GIRL: A CASE REPORT

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University of California Irvine, Department of Urology, Orange, USA

PURPOSE

To report a rare case of iatrogenic uretero-iliac artery fistula post vascular surgery that was repaired by appendiceal interposition ureteroplasty and iliac artery bypass graft.

MATERIAL AND METHODS

A 9-year-old girl, presented with hematuria and clot retention with right flank pain. She had history of repair of right common iliac artery aneurysm using a synthetic graft, which was complicated by right ureteral injury and right resection-ureteral reanastomosis was then performed. Few months later, she underwent balloon dilatation at the site of the arterial graft. Following the arterial dilation, she developed hematuria and clot retention. On examination, her vital signs were within the normal limits. Her hemoglobin level was 9 g/dL. Renal and bladder ultrasound (RBUS) showed right grade III hydronephrosis, with a hematoma occupying the right pelvicalyceal system as well as the urinary bladder. CT angiogram demonstrated right external iliac artery aneurysm measuring 1.7 x 2.6 cm, inseparable from the right iliac ureter, suggesting the presence of right uretero-iliac artery fistula with right pelvicalyceal and bladder hematomas. So, surgical exploration was then performed.

RESULTS

Surgical exploration showed large fistula associated with severe inflammatory reaction. The decision was made to bypass the fistula at both the ureteral and vascular levels. A stented ureteral replacement was conducted using the appendix as a conduit. A right common iliac to external iliac artery bypass graft was also performed using the right superficial femoral vein. Postoperatively, the patient showed resolution of hematuria and viable right lower limb by clinical examination. RBUS and duplex ultrasound also showed resolution of hydronephrosis and intact vascularity of right lower limb, respectively.

CONCLUSIONS

Uretero-iliac artery fistula is an uncommon complication that needs high index of suspicion to diagnose and innovative surgical techniques to treat.

SUCCESSFUL LAPAROSCOPIC MANAGEMENT OF IDIOPATHIC CHYLURIA IN A 12-YEAR-OLD MALE

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PURPOSE

Chyluria is a rare condition characterized by the presence of chyle in the urine, resulting in a milky or turbid appearance. While parasitic infections are the most common cause of chyluria in endemic areas, non-parasitic or idiopathic cases can also occur. This case report presents an unusual case of long-standing idiopathic chyluria in a young patient, successfully managed with laparoscopic intervention.

MATERIAL AND METHODS

A 12-year-old male patient presented to our clinic with a chief complaint of passing milky urine for more than 10 years. Physical examination revealed no significant abnormalities, and there was no evidence of lymphadenopathy or edema. Laboratory investigations, including parasite examination for *Wuchereria bancrofti* was negative, ruling out filarial etiology. A cystoscopy was performed, which revealed chyle coming out from the left ureteral orifice, confirming the diagnosis of left-sided chyluria. Laparoscopic left renal pedicle lymphatic ligation was performed.

RESULTS

During the short postoperative period, there were no signs of milky urine. The patient was followed up regularly after the procedure. At the 6-month follow-up, he remained symptom-free with no recurrence of milky urine. There were no postoperative complications, and the patient reported a significant improvement in his quality of life.

CONCLUSIONS

Idiopathic chyluria, though rare, should be considered in the differential diagnosis of milky urine in pediatric patients, even in non-endemic areas. This case demonstrates that a laparoscopic approach for the renal pedicle lymphatic ligation can be a safe and effective treatment option for managing idiopathic chyluria in young patients, offering good outcomes and improved quality of life.

HIGH INTRA-ABDOMINAL TESTICULAR TRANSPOSITION: A NOVEL APPROACH TO GONADAL PRESERVATION IN PEDIATRIC GENITOURINARY RHABDOMYOSARCOMA

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INTRODUCTION

Rhabdomyosarcoma (RMS) treatment often combines chemotherapy, surgery, and/or radiation. In genitourinary RMS, surgical resection may be unfeasible, requiring radiation that risks gonadal exposure. Testicular transposition is typically performed to preserve gonadal function, but standard techniques may not always be feasible due to extensive radiation fields. We report a five-year-old male with unresectable prostatic RMS who required an alternative approach to testicular preservation.

CASE PRESENTATION

A multidisciplinary team evaluated options for testicular preservation in this patient, as traditional inguinal repositioning was unviable due to the extensive radiation field. The safest site was identified as high on the lateral abdominal wall, beneath the liver and lateral to the spleen. Concerns arose regarding vas deferens mobility, but a fertility specialist advised that the vas deferens could be transected, with potential vasovasostomy if the patient later desired reproduction. After discussing risks and benefits, the parents consented to the procedure.

SURGICAL TECHNIQUE

Bilateral inguinal incisions released the testicles from gubernacular attachments, improving mobility. Laparoscopy enabled precise positioning in the abdominal cavity at the inferior liver and lateral to the spleen. Transection of the vas deferens was not necessary, as there was sufficient length to position the testicles without tension. To maintain blood supply, the peritoneum was released from the spermatic cord at the internal inguinal ring. The testicles were secured laterally with Prolene sutures and marked with metal clips. Postoperative imaging confirmed successful mobilization 18 cm cephalically from the pubic symphysis.

CONCLUSIONS

When traditional testicular transposition is unfeasible, high intra-abdominal placement offers a viable alternative. Laparoscopy allows precise positioning while preserving testicular blood supply. While transection of the vas deferens remains an option for greater mobility, this case demonstrates it may not always be necessary. Protecting gonadal function should remain a priority in such cases.

BILATERAL RENAL AGENESIS AND BLADDER AGENESIS: HOW DID HE SURVIVE?

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PURPOSE

Bilateral renal agenesis is a rare fetal anomaly, which is historically described as almost universally fatal in the neonatal period due to severe pulmonary hypoplasia. Over the last decades, survival rates have increased due to the innovation of fetal amnio-infusions and development of dialysis in premature infants. But morbidity remains high, and the management remains challenging with slender chances of long-term survival.

MATERIAL AND METHODS

We present the case of a male neonate with bilateral renal agenesis and bladder agenesis. Initially, he was a dizygotic twin pregnancy with intrauterine death of the twin between the 8th-9th weeks of gestation. Between the 20th-24th weeks of pregnancy anhydramnios was recognised and no kidneys could be identified. The parents declined fetal amnio-infusions.

RESULTS

He was born prematurely (GA 36 2/7 weeks) and peritoneal dialysis was initiated on the 3rd day of life. A neobladder from ileum and sigmoid with a Mitrofanoff stoma was reconstructed at nearly 3 years of age. Five months later, renal transplantation was carried out successfully. In a short follow up of six months after transplantation, the renal function remains stable with a good outcome of the reconstructed neobladder. High-frequency oscillation was necessary during the first week of life, but now he needs only intermittent high-flow support during the night.

CONCLUSIONS

In the last few years, there have been an increasing number of reports about survivors with bilateral renal agenesis due to serial amnioinfusions, but morbidity and mortality remain very high. In our case, it remains mysterious how the patient survived without fetal intervention.

PERINATAL HAEMORRHAGIC RUPTURE OF CONGENITAL MESOBLASTIC NEPHROMA: MULTIDISCIPLINARY APPROACH TO MANAGEMENT

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PURPOSE

Rupture of congenital mesoblastic nephroma (CMN) during caesarean section has not been previously reported in literature. This case report describes the crucial role of a multidisciplinary approach in achieving an optimal clinical outcome.

MATERIAL AND METHODS

A male neonate was born at 36 weeks by caesarean for reduced foetal movements. His birthweight was 2.7 kg and Apgar scores were 8 and 9. Subsequently, he was noted to be tachycardic, hypotensive with abdominal distention and haemoglobin dropped from 93 to 34g/L. He required significant resuscitation before transfer. Imaging showed a large, right-sided, intra-abdominal mass with solid and cystic areas, and haemoperitoneum. A multidisciplinary team (Neonatology, Interventional Radiology, Urology, Vascular Surgery) was assembled to formulate a management plan.

Under general anaesthesia, a 5X2 mm Saber balloon was placed in the supraceliac aorta via the umbilical artery. Balloon-inflation was planned if there was major haemorrhage during laparotomy. A transperitoneal right radical nephrectomy was completed for a large, ruptured right renal tumour.

Post-operatively, he was managed on the neonatal intensive-care for shock, sepsis, acute kidney injury, low sensorium and congenital hypothyroidism, with multidisciplinary input.

RESULTS

Histopathology revealed cellular CMN with weak Cyclin D1 staining, INI-1 expression and ETV6-NTRK3 fusion. He made a full recovery and MRI at two months showed no recurrence. He was planned for close surveillance without adjuvant chemotherapy.

CONCLUSIONS

This case highlights the successful, multidisciplinary management of a rare presentation of CMN, and the innovative use of transumbilical aortic balloon for potential haemorrhage control.

BILATERAL BOTRYOID WILMS' TUMOUR (WT): AN UNUSUAL PRESENTATION

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PURPOSE

Botryoid WT is a rare entity and bilateral is extremely rare. We present the case of bilateral botryoid WT presented with oligo-anuria and acute renal failure.

MATERIAL AND METHODS

Two and a half-year-old boy presented with vomiting, oligo anuria and generalized edema.

RESULTS

Investigations showed Hb=5.4gm% and renal failure, Creatinine=5.25mg%). An ultrasound showed bilaterally enlarged kidneys with moderate hydronephrosis and echogenic material filling the pelvicalyceal system (PCS). Non-contrast CT scan confirmed these findings of hyperdense material inside the PCS with streak of left perinephric collection. After two sessions of hemodialysis bilateral percutaneous nephrostomies were placed to relieve the obstruction. No urine output and no renal function improvement seen therefore decided for unilateral exploration. On exploration, polypoidal growth protruded on incising the pelvis of Right kidney, and extending down to mid-ureter without obvious ureteric wall attachment. Complete enucleation of the growth is performed and tissue was sent for histopathology which showed the features of "Classic Wilms' tumour". After the right debulking surgery, urine output and renal function slightly improved. Postoperative CT scan showed no mass or hyperdense material on the right side however, left remained the same and there was no chest metastasis. Hence, the diagnosis of bilateral localized botryoid WT is established and he was started on chemotherapy. After four cycles of chemotherapy, planned for left debulking surgery.

CONCLUSIONS

This is an extremely rare case of bilateral botryoid WT presented with acute renal failure. Botryoid WT should be included in the differential diagnosis of a young child presented with oliguria and renal failure with echogenic/hyperdense material on ultrasound and CT scan.

TRANS-PERINEAL APPROACH WITH PERI-RECTAL DISSECTION FACILITATES POSTERIOR BLADDER NECK PLACEMENT OF WRAPPED SLING: A CASE REPORT

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PURPOSE

In neurogenic bladder patients, bladder neck sling procedures treat incontinence with low leak point pressures. Traditional transabdominal approaches require blind posterior dissection, risking bladder neck or rectal injury and suboptimal sling placement. In males, a trans-perineal approach with peri-rectal dissection allows direct visualization of the posterior bladder neck, reducing injury risk and improving sling placement.

MATERIAL AND METHODS

A 9-year-old male with spina bifida and neurogenic bladder presented with persistent incontinence after ileocystoplasty, prompting plans for a Mitrofanoff and bladder neck sling. A trans-perineal peri-rectal dissection was performed simultaneously with a trans-abdominal approach. In high lithotomy, a midline perineal incision was made, perineal body divided, corpus spongiosum mobilized, Denonvilliers' fascia incised, and the prostate/bladder neck elevated off the rectum to enter the retroperitoneum. A Penrose drain was placed posteriorly and advanced anteriorly around both sides of the bladder neck. Upon abdominal entry, the drain was easily identified. A 10x2cm rectus fascia sling was placed circumferentially around the bladder neck, using the Penrose drain as a guide to ensure precise placement. Cystoscopy confirmed urethral coaptation. The Mitrofanoff procedure was completed, and an 8 French Foley was placed.

RESULTS

At two months, retrograde and antegrade cystoscopy confirmed appropriate urethral coaptation. At one year, urodynamics showed no incontinence, and no leak at a maximal Valsalva pressure of 72mm H₂O. At two years, he remains dry between Mitrofanoff catheterizations with rare urethral incontinence.

CONCLUSIONS

A trans-perineal approach with peri-rectal dissection avoids blind posterior bladder neck dissection and enables precise sling placement, which potentially may improve continence outcomes.

PEDIATRIC SUPINE SIMULTANEOUS BILATERAL ENDOSCOPIC SURGERY UNDER SPINAL ANESTHESIA FOR BILATERAL NEPHROLITHIASIS: ALL OPTIONS ON THE TABLE

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PURPOSE

We aimed to present a case of bilateral nephrolithiasis treated with simultaneous bilateral endoscopic surgery (SBES). This pediatric case is unique for the use of flexible and navigable suction ureteral access sheath (FANS-UAS), Thulium-fiber laser (TFL), and the procedure being performed under spinal anesthesia (SA) in the supine position.

MATERIAL AND METHODS

A 16-year-old girl with restrictive lung disease requiring continuous oxygen support (ASA-4) was referred with bilateral nephrolithiasis causing acute kidney injury. Bilateral DJ-stents were inserted, normalizing creatinine levels. Anesthesia recommended SA for elective surgery, and SBES was planned: Flexible-ureterorenoscopy for the right (lower stone burden side) and endoscopic combined retrograde intrarenal surgery (ECIRS) for the left multiple calyceal stones.

RESULTS

In the left flank-free supine position, a 5Fr ureteral catheter was placed on the left and FANS-UAS on the right. A 12Fr nephroscope was introduced into the left kidney through a 15Fr percutaneous sheath, while a 7.5Fr flexible-ureterorenoscope was used on the right. Stone disintegration was achieved simultaneously using a 30W Holmium laser and 60W TFL. After aspirating the stone fragments on the right side and achieving complete stone clearance, the flexible ureteroscope was retrogradely placed on the left side over a guidewire. The procedure, initially performed using a percutaneous approach on the left side, was subsequently continued with ECIRS, resulting in a stone-free status bilaterally. A left 8Fr nephrostomy and a right 4.7Fr DJ-stent with string were placed. The procedure lasted 90 minutes without complications, and ultrasound at three months showed no residual stones.

CONCLUSIONS

Supine SBES using FANS-UAS and TFL may help reduce operation time and the need for additional sessions. Spinal anesthesia can be considered in older children with significant comorbidities who are high-risk candidates for general anesthesia.

URACHAL REMNANT PRESENTING AS AN INGUINAL MASS

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PURPOSE

Urachal cysts have a reported incidence of 1/5000 children. Although most are identified incidentally on imaging studies, symptoms may include infraumbilical pain, dysuria and constipation. We report a rare presentation of a prepubertal boy who was referred to our clinic with an expanding fluid collection in the inguinal canal. The steps leading up to his referral, eventual diagnosis and cure are described.

MATERIAL AND METHODS

An 11-year-old male presented to his local emergency unit with a chief complaint of an expanding mass in the inguinal region. Ultrasound revealed this to be subcutaneous and fluid filled. Treatment at the outside hospital consisted of draining 300 ml of straw-colored fluid. Three months later the patient returned with a similar presentation and was referred to our hospital. Abdominal CT demonstrated the subcutaneous fluid collection. A small supravescical fluid collection with marked inflammation was also appreciated.

RESULTS

Surgical exploration revealed a ruptured urachal remnant with fluid exiting through an open internal ring and tracking out the inguinal canal into the subcutaneous space. Excision of the urachus, neighboring bladder wall and drainage tract was undertaken. The patient recovered with no complications. Pathology returned as inflamed urachal cyst with no evidence of malignancy.

CONCLUSIONS

A ruptured urachal cyst can drain through the inguinal canal and into the subcutaneous tissue. A high index of suspicion is required to make the diagnosis and abdominal imaging assists in clarifying the etiology.

S17: MISCELLANEOUS

Moderators: Elizabeth Yerkes (USA), Niccolo Passoni (USA)

Parallel Programme on Thursday 4, September 2025, 08:50 - 09:50

08:50 - 08:53

S17-1 (OP)

DEVELOPMENT OF A PREDICTIVE MODEL FOR SAME DAY SURGERY CANCELATIONS IN PEDIATRIC UROLOGY

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PURPOSE

Same-day surgery cancelation has financial and health consequences, compromises operating room efficiency, and may worsen healthcare disparities.

We hypothesize that identifying patient-related factors linked to same-day cancelations can help develop models for targeted preventive interventions.

MATERIAL AND METHODS

We reviewed all non-emergent urology surgeries scheduled between 1/2023 and 6/2024 at a tertiary pediatric center, excluding patients residing outside of USA, lacking valid address, and weather-related cancelations. Data on demographics, surgery type (elective, non-elective but not time sensitive, non-elective time-sensitive), prior cancelations, distance to hospital or surgical center, and child opportunity index (COI)- a measure of resources and economic stability- were reviewed. Multivariate regression models were utilized to identify factors associated with higher risk of same-day cancelation, and to develop a predictive model.

RESULTS

Of 2835 cases, 195 (7%) were canceled on the day of surgery. Multivariate analysis revealed that non-English speaking, non-white patients, and those with COI < 30 were at significantly higher risk for same day cancelation. A predictive model using 80% of the dataset for training and 20% for testing achieved an accuracy of 0.76, sensitivity of 0.78, and specificity of 0.47 in prediction of cases with 10% chance of cancelation. The model correctly predicted 40% of cancelations and 80% of non-cancelations.

Multivariate logistic regression predicting risk of same day cancelation based on patient's race, preferred language, and Child Opportunity Index (COI)				
Independent Variable		Odds Ratio	Standard Error	p-value
Race	Non-White /White	1.6	0.19	0.01
Language	Non-English speaking /English-speaking	2.0	0.25	0.004
COI	COI	1.97	0.19	<0.001

CONCLUSIONS

Models based on race, language, and COI can be utilized to mitigate risk of cancelation by identifying at risk patients prior to surgery. Using this data, a quality improvement intervention can be developed to focus on these patients.

08:53 - 08:56

S17-2 (OP)

FACTORS AFFECTING NO SHOW VISITS IN PEDIATRIC UROLOGY CLINIC

Evelyn JAMES, Bruce NDEBANJE, Ethan GRIFFIN and Lily WANG

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PURPOSE

Outpatient no show visits affect patient access to healthcare as well as clinic efficiency. Some studies have shown that there is a higher rate of no show visits in pediatric urology patients. We sought to evaluate factors affecting no show rates in our urology outpatient clinic.

MATERIAL AND METHODS

An IRB-approved retrospective chart review of patient appointments from March to September of 2024 was performed.

RESULTS

We identified 9872 visits with a 6.7% no show rate in the pediatric group (2043 visits) and a 3.5% in the adult group (7829 visits). Pediatric patients tended to live farther from the hospital - 59.1 miles versus 40.2 miles in the adult group. While 47.5% of pediatric visits were new patient visits, only 17.7% of adult visits were new visits. Pediatric families were more likely to prefer non-English languages (7.5%) and be non-white (15.8%) than adult patients (2.3% and 5.6%, respectively). 48.2% of pediatric patients had Medicaid or were uninsured compared with 7% in adults. The only factors significant on multivariate regression for pediatric no show visits was non-commercial insurance with an odds ratio of 3.21 (p-value <0.001) and new patient visits with odds ratio of 0.69 (p-value=0.042).

CONCLUSIONS

Our data confirm that pediatric urology patients have a higher no show rate than adult urology patients. Pediatric patients were more likely to live farther from clinic, have new patient visits, prefer non-English language, be non-white, and have non-commercial insurance. Our data indicate that factors leading to higher no show rate in pediatric patients are driven by socioeconomic status.

08:56 - 09:06

Discussion

PEDIATRIC UROLOGY IN LOW-INCOME SETTINGS: ADDRESSING CHALLENGES IN EQUIPMENT AND HUMAN RESOURCES

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INTRODUCTION

Pediatric urology in low-income settings faces significant challenges. In Senegal, children represent 48% of the population, resulting in an increasing demand for specialized pediatric care, including pediatric urology. This study aims to assess the current state of pediatric urology by evaluating equipment availability and human resource capabilities.

MATERIAL AND METHODS

Information was gathered from the directories of the Senegalese Society of Pediatric Surgery and the Senegalese Society of Urology. Online surveys were distributed to 120 practitioners across the country, focusing on training, experience, challenges in pediatric urology, and equipment availability. Data were collected from October 2024 to January 2025. Descriptive analysis was performed using Excel.

RESULTS

Two surgeons have completed degree-level pediatric urology training (1.7%), and 13 have undertaken internships abroad in pediatric urology departments (10.8%).

Ninety percent of surgeons practice pediatric urology. Both the exstrophy-epispadias complex and hypospadias were reported as challenging to manage by 25% of practitioners. Access to pediatric urology equipment was identified as the primary obstacle by 84.4% of practitioners.

Half of the regions in Senegal have access to pediatric urology equipment. Functional cystoscopes were available in 29.6% of facilities. Lasers and extracorporeal lithotripsy were present in 11.1% of facilities.

Nephroscopes and flow meters were found in 7.4% of facilities. All recorded cystomanometers were out of service.

CONCLUSIONS

This study highlights the deficit in pediatric urology equipment and lack of specialized training. International partnerships could help address equipment shortages, support knowledge exchange, and improve access to quality care for pediatric patients across the country.

COMPLICATION SEVERITY GRADING IN PEDIATRIC UROLOGY: EVALUATION OF THE COMPREHENSIVE COMPLICATION INDEX (CCI)

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PURPOSE

The Clavien Dindo Classification (CDC) is the most widely used tool for standardized analysis of surgical morbidity; however, it has significant limitations in pediatric urology. The Comprehensive Complication Index (CCI) is base do nathorough analysis of unexpected events according to CDC. The study aims to compare CDC and CCI tools for grading morbidity in patients undergoing urological surgery at our institution.

MATERIAL AND METHODS

A retrospective study analyzed patients who underwent urological surgery from March 2022 to September 2024. Demographic variables and morbidity occurring within the first 30 postoperative days were collected from medical records.

Morbidity events were analyzed with CDC and CCI. Cohen's Kappa coefficient was used to assess concordance between both tools. Events were categorized as mild, moderate or severe, and the McNemar test was applied in a bivariate analysis.

RESULTS

A total of 971 children who underwent urological surgery were included. Morbid events were identified in 129 patients (13,3%). Kappa analysis showed substantial concordance between CDC and CCI (k=0,715, p<0,001). Events were categorized using CDC (Mild: 99; Moderate: 27; severe: 3) and CCI (Mild: 92; Moderate: 26; Severe: 11). The McNemar test demonstrated that CCI identified more severe events, which were categorized as moderate by the CDC tool (p<0,01) (Table 1).

	CD	CCI	p (McNemar)
Mild morbidity	76,7% (99)	71,3% (92)	<0.001
Moderate morbidity	20,9% (27)	20,2% (26)	
Severe morbidity	2,3% (3)	8,5% (11)	

CONCLUSIONS

Although both the CDC and CCI showed substantial concordance overall, CCI demonstrated superiority in grading severe complications in paediatric urology.

COMBINED SPINAL AND INDWELLING CAUDAL (CSC) ANESTHESIA FOR LONG DURATION INFRAUMBILICAL SURGERY IN INFANTS

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PURPOSE

Spinal anesthesia (SA) is an alternative to general anesthesia (GA) for infraumbilical surgery in infants. Benefits include avoidance of airway instrumentation and opioid administration. SA with intrathecal bupivacaine allows analgesia for 60 minutes and adding clonidine can extend the analgesia to 80-90 minutes. We hypothesized that an indwelling caudal catheter (CC) might allow longer procedures to be performed with regional anesthesia.

MATERIAL AND METHODS

In a retrospective analysis of a prospective database, healthy infants less than 10 months and less than 10 kg who were scheduled for an infraumbilical urologic procedure that was anticipated to last longer than 80 minutes underwent SA with 0.5% bupivacaine 1 mg/kg and clonidine 1 ug/kg. No preoperative sedation was administered. After intravenous access was obtained, a CC was inserted through a 20-gauge angiocath. During the surgical procedure, when the infant appeared to arouse, the CC was activated with an infusion of 1 mL/kg 2% chloroprocaine with 1:200,000 epinephrine over 15 minutes followed by 1 mL/kg/hr infusion.

RESULTS

A total of 28 patients (corrected age 27 +/- 9 months) underwent CSC and one patient had unsuccessful SA. 25/28 infants had complex hypospadias repairs. Average time from entering the OR to surgery start was 27 +/- 6 minutes. The average time to CC activation was 77 +/- 18 minutes with a 68 +/- 35 minutes average extension in surgical anesthesia duration. Total average surgical duration was 109 +/- 20 minutes. Longest surgical duration was 148 minutes. Four patients (14.2%) completed the surgical procedure without CC activation. 25% received sedation and none received opioid. None showed signs of systemic local anesthetic toxicity and no adverse events were observed.

CONCLUSIONS

CSC provides effective regional anesthesia for selected infants less than 10 kg and less than 10 months undergoing an infraumbilical urologic operation with long expected surgical duration.

09:15 - 09:28

Discussion

INVERTED KIDNEY ALLOGRAFT TECHNIQUE IN PEDIATRIC KIDNEY TRANSPLANTATION: RESULTS FROM A SINGLE CENTER COMPARATIVE ANALYSIS

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INTRODUCTION

Kidney transplantation (KT) is the treatment of choice for children with end-stage kidney disease. When the donor's kidney is right-sided, the graft can be placed ipsilaterally using an inverted kidney allograft (IKA) technique, facilitating the anastomosis of a shorter renal vein, and an ideal spatial orientation of the renal hilum with anterior positioning of the urinary tract. However, IKA is rarely employed, with existing limited evidence. We aimed to compare the safety and efficacy of IKA and standard anatomical position (AP) in pediatric KT.

MATERIAL AND METHODS

A retrospective study of patients aged up to 18 years who underwent KT at our institution from January 2010 to December 2021 was conducted. The primary outcome was the incidence rates of urologic and vascular complications. Secondary outcomes were mortality, 1-year graft survival, and creatinine clearance.

RESULTS

Overall, 157 KT were performed: 61 were IKA, and 96 in the AP. There was no significant difference in urologic (16.4% vs 13.5%, $p=0.79$) or vascular complication rates (1.2% vs 5.2%, $p=0.47$). Median 1-year creatine clearance was 73.1 ml/min/m² in the IKA group and 75.3 ml/min/m² in AP individuals, with no significant difference. Graft survival at 1-year follow-up and overall mortality were comparable between the groups.

CONCLUSIONS

IKA technique is a safe and non-inferior approach for pediatric KT when standard AP is not feasible. This method did not increase the risk of urologic or vascular complications and provided comparable graft survival and 1-year creatine clearance results. Larger clinical trials are necessary to draw definitive conclusions and support broader adoption of this technique.

EVALUATING THE PREVALENCE, RISK FACTORS, AND RESISTANCE PATTERNS OF NON-E. COLI URINARY TRACT INFECTIONS IN CHILDREN: WHO IS AT RISK AND WHY SHOULD WE CARE?

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PURPOSE

Non-E.coli urinary tract infections (UTI) have been associated with genitourinary abnormalities and it has been recommended that non-E.coli UTIs undergo imaging and work-up to assess for urologic abnormalities. However, little is known about how Non-E.coli UTI differ from E.coli UTI in degree of antibiotic resistance. Herein, we compare the prevalence, risk factors, and resistance patterns between E.coli and non-E.coli UTIs in children.

MATERIAL AND METHODS

An institutional database of culture-proven UTIs between 2022 and 2024 in children(<18 years) was evaluated. Clinical characteristics were compared between cultures with non-E.coli UTI and E.coli UTI. Resistance patterns to five oral antibiotics were captured (penicillin-class, cephalosporin-class, nitrofurantoin, sulfa-based, fluoroquinolones). Risk factors were identified on univariate analysis and confirmed on binomial multivariate logistic regression.

RESULTS

A total of 393 infections were noted among 185 unique patients (78% female cases; median age at UTI 6.7 years [IQR 3.6-9.5]). Predictors of non-E.coli infections on multivariate analysis included male sex (OR 3.4, $p<0.0001$), congenital abnormalities of kidney and urinary tract (CAKUT; OR 1.8, $p=0.038$), spinal abnormalities (including myelomeningocele; OR 9.0, $p=0.038$), non-febrile presentation (OR 1.7, $p=0.044$), active antibiotic prophylaxis (OR 2.3, $p=0.009$), and number of prior positive cultures (OR 1.4 with each positive culture, $p<0.0001$). There was a higher degree of antibiotic resistance to ≥ 3 oral antibiotics for those with E.coli infections (20.3% vs. 8.2%, $p<0.0001$). Non-E.coli cultures were more likely to harbor resistance for nitrofurantoin and cephalexin but less likely to harbor resistance to amoxicillin, amoxicillin-clavulanate, TMP-SMX, and ciprofloxacin.

CONCLUSIONS

Children with urologic disorders and antibiotic prophylaxis are at risk of non-E.coli UTIs, which appear to have different resistance patterns to E.coli UTIs. This should be considered in clinical practice in prescribing empiric antibiotic therapy for UTI.

SAVE THE OVARIES: SURGICAL MANAGEMENT OF SIMPLE OVARIAN CYSTS IN CHILDREN AND ADOLESCENTS

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PURPOSE

Simple ovarian cysts in girls are common during hormonally active phases. Surgical intervention is required in cases of cyst growth or complications. The most common laparoscopic ovarian-sparing methods are cyst enucleation and cyst deroofing. Adult studies show lower recurrence rates and a reduction in ovarian reserve following cyst enucleation. However, no such literature exists in girls. We aimed to compare laparoscopic cyst enucleation with cyst deroofing regarding postoperative recurrence rates and postoperative ovarian reserve in girls.

MATERIAL AND METHODS

We conducted a retrospective multicenter study at two institutions, analyzing pre- and postoperative demographic, clinical, and sonographic parameters. Recurrence was defined as an ipsilateral ovarian cyst present within 3 months postoperatively, while ovarian reserve was assessed via sonographic ovarian volume and adnexal ratio. Descriptive statistics were performed. Endpoints were analyzed using unadjusted risk differences, odds ratios, and linear regression models.

RESULTS

From 2012-2022, 107 patients underwent surgery for simple ovarian cysts (enucleation: n=42, deroofing: n=65). Mean age was 13.6 years, mean preoperative cyst size was 54 mm. Postoperative recurrence rates were similar (deroofing: 8.1%, enucleation: 7.8%, p=0.952). However, ipsilateral ovarian volume and adnexal ratio were lower after cyst enucleation, indicating a potential reduction in postoperative ovarian reserve.

CONCLUSIONS

We demonstrated that both methods showed no difference in postoperative recurrence rates. Laparoscopic cyst enucleation appeared to impact postoperative ovarian volumes more negatively. Based on our findings a prospective study is planned to address ovarian reserve more concisely. Our studies will help standardize surgical management of simple ovarian cysts in girls, with the goal of preserving ovarian reserve.

S18: STONES 1

Moderators: Sajid Sultan (PAK), Uchenna Kennedy (SUI)

Parallel Programme on Thursday 4, September 2025, 11:10 - 12:05

11:10 - 11:13

S18-1 (OP)

MINI PERCUTANEOUS NEPHROLITHOTOMY(MPCNL) VERSUS STANDARD PERCUTANEOUS NEPHROLITHOTOMY (SPCNL) IN INFANTS. WHICH IS MORE SAFE AND EFFECTIVE?

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PURPOSE

PCNL is well established surgical modality for kidney stones. MPCNL has been considered to have less complications as compared to SPCNL in children but with its associated issues of increase operation-time and less stone free rate(SFR). Aim of the study is to compare the efficacy(in terms of SFR and operative-time)and safety(in terms of complications)of MPCNL and SPCNL in infants younger than two years of age.

MATERIAL AND METHODS

Retrospective review of medical record of infants(≤ 2 years) who underwent PCNL between January 2012- December 2021. Data was reviewed for demography, stone size and volume, operative details, post-operative outcomes including SFR, need of blood transfusion and complications. Data was divided into two groups, Group-I, MPCNL (Sheath size ≤ 16 Fr.) and Group-II, SPCNL (Sheath size ≥ 20 Fr.). Statistical analysis was done on SPSS-v.20, Chi-square test, independent t-test and Mann-Whitney-U tests were used. P value < 0.05 considered significant.

RESULTS

276 infants (332 RU) underwent PCNL between 2012-2021.

	Group A MPCNL (<=16Fr.) n = 167	Group B SPNL (>=20 Fr.) n = 165	p-value
Mean Age(y)	1.59+/-0.42	1.54+/-0.44	0.29
Mean Weight(kg)	8.5+/-1.5	8.5+/-1.8	0.69
M/F	121/46	132/33	0.10
Mean stone length(cm)	1.9+/-0.68	1.9+/-0.70	0.99
Mean Stone volume(cm ²)	3.0+/-2.0	2.8+/-2.2	0.27
Number of stones	58(34.7%)	59(35.8%)	0.84
Single	109(65.3%)	106(64.2%)	
Multiple			
Approach	117(70%)	112(68.3%)	0.32
Subcostal	50(30%)	52(31.7%)	
Supracostal			
Mean-operative-Time(min)	106.9+/-39.9	84.3+/-30.2	0.0001
Stone free	153(91.6%)	157(95.2%)	0.19
Complications	13(7.8%)	10(6.1%)	0.53
CD-2 and above			
Blood transfusion	38(22.8%)	39(23.6%)	0.84
Mean Pre-operative Hb(gm%)	10.0+/-1.4	9.8+/-1.17	0.20

Mean Operative-time is significantly less in SPCNL as compared to MPCNL(p=0.0001) with almost similar stone free rate(n=0.19),complications(p=0.53) and blood transfusion rate(p=0.84) in both groups.

CONCLUSIONS

Both Mini PCNL and Standard PCNL are safe and effective in infants younger than 2 years with significantly less operative time in standard PCNL.

COMPARISON BETWEEN MICRO-(4.85FR) AND ULTRAMINI-(<15FR) PERCUTANEOUS NEPHROLITHOTOMY FOR THE TREATMENT OF 10-20MM KIDNEY STONES IN PRESCHOOL CHILDREN

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PURPOSE

This study aimed to compare the efficacy and safety of micro-PCNL and ultramini-PCNL in preschool children with 10-20mm kidney stones.

MATERIAL AND METHODS

A retrospective analysis was performed on data from patients under 6 years who received micro-PCNL or ultramini-PCNL surgeries in our hospital between January 2020 and January 2024. The inclusion criteria consisted of pediatric patients (

RESULTS

There were 33 patients in the micro-PCNL group and 31 patients in the ultramini-PCNL group, with a mean age of 3.1 ± 1.3 years and 3.6 ± 1.8 years ($p=0.208$), respectively. The stone size was 15 ± 4 mm in the micro-PCNL group and 16 ± 4 mm in the ultramini-PCNL group ($p=0.326$). Micro-PCNL and ultramini-PCNL groups showed comparable stone-free rates (84.8% vs. 87.1%, $p=0.796$) and procedure times (49 ± 17 min vs. 54 ± 23 min, $p=0.218$). However, a significantly shorter hospitalization period was observed in the micro-PCNL group compared with the ultramini-PCNL group (2.3 ± 1.3 days vs. 4.6 ± 2.2 days, $p < 0.001$). Complications were similar between groups, with 12.4% in the micro-PCNL group and 16.1% in the ultramini-PCNL group and no severe hematuria was observed.

CONCLUSIONS

In preschool children with 10-20mm kidney stones, both micro-PCNL and ultramini-PCNL achieve similar high stone-free rates with minimal complications, showing comparable outcomes in appropriately selected patients with experienced surgeons.

MINI-PCNL IN STAGHORN STONES IN CHILDREN , WHERE DO WE STAND ? A MULTI CENTRIC STUDY.

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PURPOSE

Staghorn stones in children have shown a reported increase in incidence lately. The aim of this multicentric study was to evaluate the outcome of mini-PCNL in treating staghorn stones in children.

MATERIAL AND METHODS

Retrospective data of (64) patients who underwent mini-PCNL for staghorn stones from Jan-2022 to Sep-2024 were collected from four different tertiary centers and analyzed accordingly.

RESULTS

The mean age was (8.06 ± 4.39) years. The largest dimensions of treated stones were (28.17 ± 12.64) mm. The number of PCNL tracts were 1, 2 and 3 in 56, 7 and 1 patient respectively . A lower, middle and upper calyceal puncture was performed in 40 (62.5%) , 27 (42.2%) and 5 (7.8%) cases respectively. Average operative time was (65.80 ± 27.54) minutes. Hemoglobin drop was estimated to be (0.78 ± 0.68) g/dl. 12 patients (18.8%) required blood transfusion. Mean hospital stay was (2.67 ± 1.30) days . Complications occurred in 20 patients (31.3%) . According to the Clavien Dindo's classification system, 9 (14.1%) , 4 (6.2%) , 12 (18.7%) patients had grade 1, 2 and 3 respectively.

Stone free status was achieved in 51 patients (79.7%) . 11 patients had residual fragments ≤ 10 mm and only 2 were >10 mm. One patient was managed conservatively while 12 patients (10.9%) required re-intervention. 5, 3, 3 and 1 patients underwent ESWL, RIRS, 2nd mini-PCNL and ECIRS respectively to achieve stone free status.

CONCLUSIONS

Mini-PCNL is very efficient and reliable to achieve stone free status in pediatric staghorn stones.

UPPER TRACT STONES FROM 1 TO 2 CM IN THE PAEDIATRIC PATIENTS: OUTCOMES OF DIFFERENT TREATMENT MODALITIES

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PURPOSE

The EAU/ESPU do not provide clear-cut recommendation for the treatment of 1-2 cm intrarenal stones in the paediatric population. This study aims to describe the different strategies and outcomes in this specific population.

MATERIAL AND METHODS

We retrospectively enrolled patients from two large-volume centres from 2009 to 2022. Patients' and stone characteristics, details regarding treatment modalities, complications and stone-free-rates (SFR) were collected. We used descriptive statistics and Chi-square or Fisher-exact test for categorical variables.

RESULTS

96 patients were included, median age was 61 months (IQR 25- 105). 24 (25%) were treated under 2-years, 10 (10.4%) under 1-year. 19 (19.8%) had associated urological condition, 5 VUR and 4 previous pyeloplasty for UPJO. 50% of patients presented multiple stones. Median size of stones was 15mm (IQR 12-18 mm). 17 (17.7%) patients underwent SWL, 45 (46.9%) retrograde endourology (URS-RIRS), 19 (19.8%) PCNL, 8 (8.3%) open or VLS surgical treatment.

Intraoperative complication occurred in 4 (4.2%) patients (bleeding or urine leakage). 12 (12.5%) had early complications (fever), and 11 (11.5%) had late complications. 46 (47.9%) were stone free after 1st procedure, while 41 (42.7%) required more urological procedure (2 required 3 procedures). At 1st procedure, 10 ESWL patients (58.8%) were SFR, 22 (47.8%) URS-RIRS, 10 (52.6%) PCNL and 4 (57.1%) surgery, 1 underwent nephrectomy. 64 stones composition were analysed: 7 (7.3%) cystine, 2 (2.1%) uric-acid, 31 (32.3%) calcium, 24 (25%) mixed.

No significant differences in stone free rate were detected among different approaches, neither in early or late complications, nor in terms of calculi composition.

CONCLUSIONS

We did not find any significant difference in treatments for 1-2cm stones, and all the treatments are safe. This highlights the importance of personalised treatment, mastering different procedures. A truly tailored approach must consider position, presence of urological abnormalities or metabolic abnormalities that could determine stone resistance to treatment or recurrence.

THE NATURAL HISTORY OF RESIDUAL RENAL STONE FRAGMENTS AFTER SURGICAL TREATMENT

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PURPOSE

According to current evidence in surgical treatment of stone disease, success is defined for residual fragments below 4mm. This study aims to define the destiny of postsurgical renal residual stones <9mm.

MATERIAL AND METHODS

Data regarding 167 patients treated between January 2010 and June 2024, with minimum follow-up of 6 months, was retrospectively reviewed. 81 residual stone fragments, not meeting criteria for second treatment, were identified and followed-up. Our main parameters were patients' demographics, rates of regrowth, complication, spontaneous passage and re-operation.

RESULTS

The patients' median age was 63 months (3-222 months). The median size of the residual stones was 6mm (2-9mm). 61 stones (75%) were in the lower calyces, 15 (19%) in the middle, 4 (5%) in the upper and 1 stone (1%) in the pelvis. Spontaneous passage was observed for 33 stones (41%) with a median size of 5mm (2-9mm) and in a median interval of 13 months. Ejected stones were in lower (73%), middle (18%), upper calyces (6%) and pelvis (3%). Twenty fragments (25%) showed a tendency to regrowth. Seventeen patients (21%) were re-operated during follow-up. Using logistic regression, we identified an optimal cut-off value of 6mm as predictive of spontaneous passage, although the model exhibits a poor performance (AUC=0,677). 49 residual stones (60%) were <6 mm and proved to be significantly associated with spontaneous passage and lower rates of clinical complications con chi-squared test (p<0,05).

CONCLUSIONS

According to our results, residual renal stones <6mm after surgery have good chances of spontaneous expulsion.

PCNL WITHOUT CT- A PARADIGM SHIFT TOWARD LESS RADIATION

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PURPOSE

The purpose of the study was to assess if there is dire need of CT KUB in children under 15 yrs of age pre operatively who are undergoing PCNL for > 1 cm calculus.

MATERIAL AND METHODS

A total of 520 pediatric patients (< 15 yr of age) underwent prone PCNL were sorted into two groups, Group A included patients who were evaluated with CT KUB before PCNL, while Group B proceeded with PCNL with ultrasound KUB being sole pre-operative modality. Both groups on-table RPG. Mean age, stone size and location, intra-operative sheath size, pre and post-operative hemoglobin drop, need for blood transfusion, mean operative time, mean hospital stay and stone clearance was assessed; p value of < 0.05 was taken significant.

RESULTS

The mean age of the patients was 3.7 ± 2.3 years and 3.8 ± 3.9 years in group A and group B, respectively. Mean stone size in group A was 1.4 ± 0.1 while group B had 1.5 ± 0.1 cm. post-operative hemoglobin drop was comparable in both groups ; 1.2 ± 1.0 for group A and 1.5 ± 1.0 in group B. (p value- 0.08). Stone free rate was 98.9% in A and 99.2% in B.

CONCLUSIONS

Ultrasound KUB combined with on table RPG is safe and effective alternative to CT KUB in terms of stone clearance, minimal radiation exposure and cost effectiveness.

ESTIMATION OF STONE BURDEN VOLUME IN PEDIATRIC NEPHROLITHIASIS USING 3D PRINTING PROGRAM

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PURPOSE

The incidence of pediatric nephrolithiasis is increasing by 10% annually. Ultrasonography is the preferred initial diagnostic method, while non-contrast computed tomography (CT urography) remains the gold standard. Surgical treatment selection should consider stone anatomy and characteristics. Guidelines rely on stone volume estimation to determine the most effective approach. 3D modeling program may improve stone volume assessment. This study compares volumetric estimation using 3D modeling program versus traditional methods to optimize surgical decision-making.

MATERIAL AND METHODS

This retrospective descriptive study analyzed pediatric patients who underwent surgery for nephrolithiasis between October 2020 and August 2024. Inclusion criteria: preoperative evaluation with CT urography. Exclusion criteria: age >16 years, kidney transplant. Using 3D modeling software (3-matic®), stone volume was estimated and compared with traditional methods (Ackerman formula, surface area, and spherical volume) to determine stone burden. Descriptive statistics were applied.

RESULTS

Eight patients were analyzed (mean age: 8 years). The mean stone diameter was 10.5 mm (range: 4.3-20 mm). Average measurements using traditional methods were: 73.35 mm² (Ackerman), 295.62 mm² (surface area), and 1085 mm³ (spherical volume). In contrast, 3D modeling yielded an average of 274.96 mm² and 75.84 mm³. Compared to 3D modeling program, Ackerman method underestimated stone burden by 172.35 mm², while the spherical surface area and volume overestimated it by 157.41 mm² and 811.58 mm³, respectively.

CONCLUSIONS

3D modeling program provides a larger volume estimate than Ackerman method but significantly lower than spherical surface and volume estimates. This technique may offer more accurate stone burden assessment in pediatric nephrolithiasis compared to traditional methods, improving surgical timing and approach based on clinical guidelines.

PCNL IN A CHILD WITH DIFFICULT ANATOMY: SOLITARY KIDNEY, STAGHORN STONE, SEVERE SCOLIOSIS, AND SPINA BIFIDA

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PURPOSE

Percutaneous nephrolithotomy can be technically challenging in patients with complex anatomy. This report describes a case of multiple-access left PCNL (percutaneous nephrolithotomy) in a child with severe scoliosis, spina bifida, and a solitary kidney containing a staghorn calculus.

MATERIAL AND METHODS

A 16-year-old child presented with a staghorn calculus in a solitary left kidney, along with spina bifida, scoliosis, and a non-functioning right kidney. Preoperative imaging, including KUB (kidney, ureter, and bladder) radiography, revealed stones superimposed on the vertebrae. DMSA (dimercaptosuccinic acid) scan demonstrated 89% function in the left kidney, and CT (computed tomography) scan confirmed multiple stones filling renal pelvis and most calyces. Due to lower extremity contractures that do not allow adduction, cystoscopy and ureteral catheter placement was performed in a modified position. The patient was then placed prone with similar modification for PCNL. Multiple access tracts were created to achieve complete stone clearance. A double-J (DJ) stent was placed antegrade fashion and a nephrostomy tube was placed through one tract.

RESULTS

All stone fragments were successfully removed. Postoperative antegrade pyelography showed no extravasation except at access sites. A nephrostomy tube was placed, and postoperative KUB confirmed a stone-free kidney. The nephrostomy tube was removed on the 8th postoperative day. DJ stent was removed in the first postoperative month. He is currently in the 5th month postoperatively and is being followed up without any problems.

CONCLUSIONS

This case demonstrates the feasibility of successful multiple-access PCNL in a child with challenging anatomy, highlighting the importance of careful preoperative planning and intraoperative adaptation.

S19: ARTIFICIAL INTELLIGENCE

Moderators: Tariq Abbas (QA), Armando Lorenzo (CAN)

Parallel Programme on Thursday 4, September 2025, 14:00 - 14:50

14:00 - 14:03

S19-1 (OP)

CAN DEEP LEARNING-BASED SEGMENTATION AND CLASSIFICATION IMPROVE THE DETECTION OF RENAL CORTICAL ABNORMALITIES?

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PURPOSE

To develop a fully automated deep learning pipeline to enhance the detection and classification of renal cortical abnormalities in pediatric patients. Accurate identification of kidney scarring is critical for diagnosing and managing renal conditions, yet manual analysis of nuclear renal imaging is prone to significant inter-observer variability. By leveraging advanced deep learning techniques, this study aims to provide a more precise, efficient, and reliable method for analyzing renal scans, reducing human error and improving diagnostic accuracy.

MATERIAL AND METHODS

We developed a model using a dataset of 613 renal nuclear images, including 193 from patients diagnosed with kidney scarring. A novel DenseNet121_Self-ONN_FPN model was created, integrating DenseNet121 with Self-Organizing Neural Network layers in a Feature Pyramid Network (FPN) for enhanced segmentation. A modified DenseNet205 architecture was employed for classification. Preprocessing techniques such as Contrast Limited Adaptive Histogram Equalization (CLAHE) and Gamma correction were applied. Performance was evaluated using Accuracy, Precision, Recall, F1-score, Intersection over Union (IoU), Dice Similarity Coefficient (DSC), False Negative Rate (FNR), and False Positive Rate (FPR). ScoreCAM was used for explainability.

RESULTS

The segmentation model achieved an Accuracy of 98.74%, IoU of 86.47%, DSC of 92.74%, precision of 92.61%, recall of 92.88%, F1-score of 99.29%, FNR of 7.12%, and FPR of 0.71%. The classification model demonstrated an Accuracy of 96.91%, precision of 96.98%, sensitivity of 96.91%, F1-score of 96.86%, and specificity of 95.87%, surpassing state-of-the-art methods.

CONCLUSIONS

This fully automated deep learning pipeline outperforms manual analysis in detecting and classifying renal cortical anomalies, offering a reliable, efficient, and transparent solution. It sets a new standard for clinical renal imaging and improves diagnostic precision in pediatric urology.

INTEGRATION OF AN AUTOMATED ARTIFICIAL INTELLIGENCE MODEL FOR MEASURING HYDRONEPHROSIS IN CHILDREN WITH URETEROPELVIC JUNCTION OBSTRUCTION

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PURPOSE

The SFU grading system is commonly used in stratifying ureteropelvic junction (UPJ) obstruction but can be prone to inter-rater variability. Hydronephrosis index (HI)—calculated as a ratio of the area of renal parenchyma (total kidney area minus the area of dilated pelvis and calices) to the total kidney area—is a quantitative measure that can trend hydronephrosis over serial studies. However, calculating HI requires manual image segmentation which is labor-intensive. Thus, our first aim was to pilot an automated artificial intelligence workflow within our Picture Archiving and Communication System (PACS) that segments and measures hydronephrotic areas on renal ultrasound imaging.

MATERIAL AND METHODS

We included patients up to 5 years of age with confirmed diagnosis of UPJ obstruction. Raw ultrasound images were converted to grayscale and noise reduced using median filtering. Segmentation masks were generated to identify tissue structures and refined through filtering based on cluster size, intensity, spatial characteristics, center of mass, and proximity to image edges. The final output included visualizations of the segmented regions and overlays onto original images. Model segmentation was cross-validated to manual segmentation of the same renal unit.

RESULTS

Using a preliminary model training set of 40 renal ultrasound studies, we developed a pilot artificial intelligence workflow within our institution's PACS infrastructure that automatically segments and measures hydronephrotic regions and outputs into the study report. This is the first step in developing an automated tool for calculating hydronephrosis index.

CONCLUSIONS

We show the feasibility of integrating artificial intelligence image processing models within an institution's PACS infrastructure. Our next step is to expand this model to measure hydronephrosis index.

A NOVEL ARTIFICIAL INTELLIGENCE MODEL TO IDENTIFY PATIENTS WITH UNILATERAL HYDRONEPHROSIS WHO REQUIRE PYELOPLASTY FOR URETEROPELVIC JUNCTION OBSTRUCTION

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PURPOSE

Differentiating critical hydronephrosis requiring surgical intervention due to ureteropelvic junction obstruction (UPJO) remains a clinical challenge in pediatric urology. On the other hand, clinical studies of various urinary biomarkers that predict the differentiation of obstructive hydronephrosis caused by UPJO from non-obstructive dilatation have increased in recent years. Meanwhile, artificial intelligence (AI) and machine learning are becoming increasingly popular and reliable in all areas of medicine. Thus, we aimed to investigate the potential use of clinical parameters and various urinary biomarkers in predicting the need for surgery in children with isolated unilateral hydronephrosis by creating an AI model.

MATERIAL AND METHODS

Thirty-nine children with UPJO who underwent pyeloplasty, 40 patients with non-obstructive dilatation (NOD) and 39 healthy children (control group) were included in this case-control study to perform a retrospective analysis of prospectively collected data. Urinary IP-10, KIM-1, CA19-9, NGAL and MCP-1 levels were analysed by ELISA. The patients' demographic and clinical data [anteroposterior diameter (APD) on postnatal ultrasonography (US), renal parenchymal thickness on US, and split renal function on MAG-3] were also recorded. The XGBoost classification algorithm was used to create a prediction model to identify patients who would require surgery.

RESULTS

Antenatal hydronephrosis was present in 82.2% of the total of 79 children (58 boys, 73.4%) included in this study due to unilateral hydronephrosis, and all of them had a postnatal APD ≥ 15 mm. All five urinary biomarkers were significantly higher in the obstruction group than in the other groups ($p < 0.001$). A prediction model was developed for the identification of the need for pyeloplasty in children with hydronephrosis with an overall accuracy of 94.44%. The model performance as calculated by ROC AUC was 0.98. According to the model, the most important factors in predicting the need for surgery were renal parenchymal thickness (< 5.25 mm), split renal function on MAG-3 ($< 37.5\%$), APD on postnatal US (> 25.2 mm), urinary IP-10 level (> 101.1 pg/mg Cr), and SFU hydronephrosis grade.

CONCLUSIONS

Based on our preliminary results, the AI model appears to have high reliability and accuracy in identifying patients who need surgery for UPJO.

AI-BASED ASSESSMENT OF ANATOMIC SUITABILITY FOR NEWBORN CLAMP CIRCUMCISION: A PROOF-OF-CONCEPT STUDY

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PURPOSE

Approximately 50% of newborn boys in the U.S. undergo circumcision, frequently by non-urologists. Yet, a standardized method to guide anatomic suitability assessment for clamp circumcision is lacking. Circumcision on unsuitable anatomy can result in complications; unnecessary specialist referrals of boys with suitable anatomy increase healthcare burdens. We aim to evaluate the feasibility of an AI-based tool to assess anatomic suitability for clamp circumcision.

MATERIAL AND METHODS

We developed a database of standardized newborn penile anatomy images (dorsal, ventral, top, side views), taken with parental consent. A pediatric urologist categorized images as suitable/unsuitable for clamp circumcision. A Convolutional Neural Network model, YOLACT++, was trained. Performance was assessed: accuracy, sensitivity, specificity, area under the curve (AUC), inter-rater agreement with the pediatric urologist.

RESULTS

82 images from 20 patients were analyzed. When analyzing each image singularly, model accuracy/sensitivity/specificity/AUC was 71/81/61/81%, respectively. When analyzing all images of a patient together, sensitivity increased to 100%, although specificity decreased to 50%. While the model demonstrated robust sensitivity (identifying anatomic unsuitability), it tended to overclassify cases as unsuitable (lower precision). The AUC indicates good model performance in distinguishing suitable/unsuitable anatomy. Agreement with the expert yielded a Cohen's kappa of 0.82 (almost perfect agreement).

CONCLUSIONS

AI-assisted assessment of penile anatomy shows promise for clinical implementation. High model sensitivity suggests utility in identifying unsuitable cases, though lower precision highlights the need for refinement to reduce unnecessary referrals. Future work will focus on optimizing model precision, and integration into mobile applications for clinical adoption.

PRECISION IN CHORDEE ASSESSMENT: AUTONOMOUS MEASUREMENT OF PENILE CURVATURE EVALUATION THROUGH MACHINE LEARNING

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PURPOSE

Chordee is characterized by abnormal penile curvature. Degree of curvature is essential to determine the appropriate surgical approach. Currently, intraoperative evaluation is conducted through artificial erection testing on a degloved penis. However, traditional methods such as visual estimation and goniometer measurements are prone to significant interobserver variability, potentially leading to inconsistent clinical decisions. This study aims to develop an AI-based tool for objective and accurate penile curvature quantification using lateral-view digital images.

MATERIAL AND METHODS

Degloved penile images with artificial erection testing were collected and preprocessed, excluding duplicates. The dataset was divided into training (70%), validation (15%), and testing (15%) subsets. The AI model employed a two-step pipeline: (1) penile segmentation to identify penile structures and (2) chordee angle regression to measure curvature from the previously segmented area. Ethical protocols and informed consent were strictly followed to ensure data privacy.

RESULTS

A total of 76 penile images with curvature ranging from 0 to 88 degrees were analyzed. The AI model achieved a segmentation accuracy of 96.5%, with an Intersection over Union (IoU) score of 91.3% and a Dice Similarity Coefficient (DSC) of 96.2%. The curvature angle estimation achieved a mean absolute error (MAE) of 10.5 degrees compared to goniometer measurements.

CONCLUSIONS

This study evaluates an AI-based automated approach for penile curvature measurement in chordee patients, demonstrating its accuracy and reproducibility. By reducing subjectivity, this method enhances surgical decision-making. However, further validation with larger datasets is required to confirm its clinical applicability.

ARTIFICIAL INTELLIGENCE CHATBOTS VS. YPUC PEDIATRIC UROLOGISTS: PERFORMANCE ON A CAMPBELL WALSH UROLOGY HYPOSPADIOLOGY QUESTIONNAIRE

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PURPOSE

The increasing role of artificial intelligence (AI) in medical decision-making raises concerns about its reliability in specialized fields. This study aimed to compare AI-generated answers with those of pediatric urologists from the Young Pediatric Urologist Committee (YPUC) from the European Society for Paediatric Urology (ESPU) on a structured questionnaire derived from the 13th edition of Campbell Walsh Urology, covering all aspects of hypospadiology (theoretical knowledge, evaluation and management).

MATERIAL AND METHODS

A 31-question multiple-choice questionnaire was distributed to 77 members of the YPUC, of whom 23 (29.9%) responded on a voluntary basis. The questionnaire was also answered by 5 AI models (ChatGPT 3.5, ChatGPT 4o, Gemini, Copilot and Doubao). Subgroup analysis included FEAPU-certified (Fellow of the European Academy of Paediatric Urology) participants (n=15/23), surgeons over 35 years old (n=16/23), and self-declared hypospadiology experts (n=12/23). Responses were compared to assess accuracy.

RESULTS

Human participants had a mean score of 61.2% [45.2% to 77.4%], while AI models reached an average score of 63.2% [48.4% to 71.0%]. The highest-scoring human achieved 77.4%, outperforming the best AI score of 71% (Copilot). The FEAPU-certified subgroup performed best (65.6%, 54.8%-77.4%) comparing to the other subgroups (surgeons over 35 years old : 63.3% ; self-declared hypospadiology experts : 64.5%).

CONCLUSIONS

AI systems demonstrated performance comparable to human experts but did not surpass top-tier professionals. While AI provided robustness in answering domain-specific questionnaires, human expertise remains mandatory for interpreting nuances and, most importantly, bridging the gap between theoretical knowledge and practical application.

ANALYZING THE READABILITY OF WEB-BASED PATIENT EDUCATIONAL MATERIALS FOR PEDIATRIC UROLOGIC CONDITIONS

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PURPOSE

The average American adult reads at an eighth-grade level. The National Institutes of Health (NIH) and American Medical Association (AMA) recommend patient materials be written at a sixth-grade level to maximize understanding. The Flesch-Kincaid (FK) formula calculates a text's reading level based on syllables per word and words per sentence. Health literacy is critical, affecting health outcomes. We aim to evaluate the readability of online information for four pediatric urologic conditions.

MATERIAL AND METHODS

We analyzed 80 online patient materials for four common pediatric urologic conditions using the FK formula. Conditions included "undescended testis/testicle (UDT)," "vesicoureteral reflux (VUR)," "hydronephrosis," and "hypospadias." A Google search was performed for each condition, and the top 10 most visited websites were assessed for readability. A second analysis evaluated 10 of the top pediatric urologic programs ranked by U.S. News & World Report.

RESULTS

Using the FK formula, the overall grade reading level (GRL) of the 80 websites was 10.13. The average reading level of the top 10 websites and top 10 programs was 10.1 and 10.2, respectively. The mean GRL for the top 10 most visited websites were: UDT 10.11±2.66, VUR 9.0±1.53, hydronephrosis 9.97±2.12, and hypospadias 11.21±2.35. For the top 10 program websites, the mean GRL were: UDT 9.33±2.69, VUR 9.3±2.05, hydronephrosis 10.74±1.84, and hypospadias 11.45±2.92. Hypospadias websites had the highest GRL at 11.33±2.01, while VUR had the lowest at 9.15±1.77. 0% of the hypospadias material on the top 10 program websites was at an appropriate level. 73.8% of materials were written above the eighth-grade reading level.

CONCLUSIONS

The most accessed online materials for common pediatric urologic conditions exceed the limits set by the NIH and AMA, surpassing the reading level of most U.S. adults. This highlights the need to improve the readability of patient materials.

S20: WORKFORCE/TRAINING

Moderators: Michael Ernst (USA), Kathleen Kieran (USA)

Parallel Programme on Thursday 4, September 2025, 14:50 - 15:25

14:50 - 14:53

S20-1 (OP)

A REPORT ON THE LANDSCAPE OF GENDER REPRESENTATION AT NATIONAL AND INTERNATIONAL PEDIATRIC UROLOGY ANNUAL MEETINGS

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Children's Hospital Colorado, Pediatric Urology, Aurora, USA

PURPOSE

The 2023 American Urological Association Census reported that the percentage of female urologists in the United States rose from 7.7% in 2014 to 11.8% in 2023. Notably, 25% of practicing urologists less than 45 years old are female, compared to only 1% of practicing urologists 65 years and older. The aim of this study was to evaluate the landscape of gender representation at European Society of Pediatric Urology (ESPU) and Society of Pediatric Urology (SPU) meetings over time.

MATERIAL AND METHODS

A review of all scientific sessions and panels from ESPU Annual Meetings and SPU Fall Congress Meetings from 2018-2024 was performed. The number of invited moderators and panelists by gender were recorded as well as the topic of discussion. Fisher exact tests were used to assess for differences in gender representation at ESPU and SPU meetings and to investigate temporal and topical trends.

RESULTS

Over the six-year period, there was not a change in gender representation at both meetings combined. Overall, SPU meetings had more equal gender representation than ESPU meetings (26.3% vs 47.8% female, $p < 0.001$). Men trended towards more representation in topics related to basic science, artificial intelligence, and billing/coding. Women trended towards more representation in topics related to education, clinical research, and quality improvement.

CONCLUSIONS

Leadership and visibility at annual ESPU and SPU meetings have remained stable over time, with more equal representation within SPU. Further studies will investigate why this gap between meetings exists as well as how pediatric urology compares to other urologic subspecialties.

DEVELOPMENT AND IMPLEMENTATION OF A STANDARDIZED CURRICULUM FOR PEDIATRIC UROLOGY FELLOWSHIP TRAINING

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PURPOSE

Pediatric urologists manage a wide spectrum of genitourinary conditions, requiring a strong foundation in embryology, pathophysiology, and surgical management. Despite these demands, the current ACGME requirements for urology residency offer limited exposure to pediatric urology, leading to variable competence among trainees entering fellowship. Moreover, no standardized curriculum exists across the 27 ACGME-accredited pediatric urology fellowship programs, contributing to disparities in training. In this project we sought to develop, implement, and evaluate a standardized curriculum for pediatric urology fellowships that ensures comprehensive training in core clinical, surgical, and professional competencies while addressing variability in trainee preparedness and aligning with ACGME milestones.

MATERIAL AND METHODS

We conducted a targeted needs assessment using an anonymous survey of recent fellowship graduates to evaluate confidence in clinical, surgical, and interpersonal skills, as well as barriers to effective training.

RESULTS

Survey response was 35.3% (n=35/205) and revealed that over 80% of recent graduates felt confident in core clinical care but noted lower confidence in postoperative care (66.6%) and communication-based activities. Burnout was common, with institutional and partner-level mentorship cited as critical mitigating factors. The proposed curriculum includes clinical and surgical objectives, hands-on simulation, multidisciplinary conferences, and personalized feedback. Pilot implementation is planned at multiple institutions, with periodic evaluation using REDCap-based surveys and stakeholder feedback.

CONCLUSIONS

This standardized curriculum addresses critical gaps in training by defining core competencies, leveraging simulation, and fostering structured feedback. Collaboration among institutions will enable customization and scalability, ultimately improving trainee preparedness and patient outcomes. Future efforts will focus on assessing curriculum effectiveness and expanding adoption across programs.

TEN-YEAR TRAINEE TRENDS FOR OPEN AND MINIMALLY INVASIVE PEDIATRIC PYELOPLASTY IN THE UNITED STATES

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PURPOSE

Anderson-Hynes dismembered pyeloplasty is the historic gold-standard surgical repair of ureteropelvic junction obstruction, typically via open approach - open pyeloplasty (OP). Advances in minimally invasive pyeloplasty (MIP) include technical skill and application in younger patients. We report trainee experience with OP and MIP over the last 10-years in the United States (US), and hypothesize that a paradigm shift in surgical approach will decrease trainee open surgery experience.

MATERIAL AND METHODS

The Accreditation Council for Graduate Medical Education (ACGME) defines and upholds standards in graduate medical training programs for US physicians. The ACGME annually reviews graduate case log data to assess the breadth and depth of a program's procedural training. Deidentified ACGME case log data for pediatric urology fellows from 2014-2024 was divided into 3 periods (2014-2016, 2017-2021, 2022-2024), and total case counts for OP using Current Procedural Terminology (CPT) codes 50400 or 50405, and MIP CPT code 50544. Ureterocalicostomy (50750) and ureteropyelostomy (50740) were excluded. The proportions of OP vs. MIP cases performed were compared during each period using chi-square testing.

RESULTS

The proportion of MIP cases increased progressively during the time period, from 54.9% during the early time period to 58.2% during the middle time period to 75.5% during the latest time period (p<0.001). MIP accounted for 77.3% of pyeloplasty cases during the final year vs. 48.1% during the initial year.

CONCLUSIONS

Over the last 10-years, there is a significant dichotomy of trends favoring MIP versus OP in US pediatric urology fellowship training, particularly pronounced for the most recent 3-year period. Presuming proficiency with OP is important in practice, training paradigms that optimize experience should consider enhancing exposure of trainees to OP.

	2014-2017	2018-2021	2022-2024	Total
OP	840 (45.1%)	930 (41.8%)	349 (24.5%)	2119 (38.4%)
MIP	1023 (54.9%)	1296 (58.2%)	1078 (75.5%)	3397 (61.6%)
Total	1863	2226	1427	5516

THE COMBINED PORCINE-AVIAN MODEL: AN INNOVATIVE TRAINING TOOL FOR PAEDIATRIC RETROPERITONEOSCOPIC PYELOPLASTY

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PURPOSE

Addressing the lack of validated training models for paediatric retroperitoneoscopic pyeloplasty in literature, an innovative hybrid animal tissue model, the Combined Porcine-Avian, was designed and validated.

MATERIAL AND METHODS

A prospective observational study was conducted during two Minimally Access Surgery (MAS) courses in 2023 and 2024, using a model consisting of a chicken's crop and oesophagus connected to a piglet kidney. The model was placed on an inclined surface to simulate the alignment of the renal pelvis during retroperitoneoscopy. This setup allowed for simulating dismembered retroperitoneoscopic pyeloplasty on a standard pelvic trainer using tools and techniques consistent with clinical practice. Validation data were collected using a 5-point Likert scale questionnaire based on the Michigan Standard Simulation Experience Scale (MiSSES).

RESULTS

Twenty-nine participants (20 females, 9 males) were enrolled: 17 (59%) had performed <50 MAS cases, 4 (14%) 50-100 cases, and 8 (28%) >100 cases. Mean perceived realism was 4.4 ± 0.7 , for simulated environment 4.3 ± 0.7 , renal pelvis 4.4 ± 0.6 , and ureter 4.4 ± 0.6 . Knowledge improvement was rated 4.7 ± 0.5 , confidence performing retroperitoneoscopic pyeloplasty 4.4 ± 0.6 , and ability 4.4 ± 0.8 . Educational value for retroperitoneoscopic surgery was rated 4.6 ± 0.6 , and for suturing 4.8 ± 0.5 . Overall satisfaction was 5 ± 0 , with no significant differences across experience levels.

CONCLUSIONS

The novel combined porcine-avian model for retroperitoneoscopic pyeloplasty was successfully validated. Validation assessment highlights its high realism and effectiveness, enabling skill acquisition in retroperitoneoscopic pyeloplasty. It expands the range of established simulation models in paediatric urology.

IMPACT OF SOUND DISTURBANCES BY PHONE CALLS ON THE QUALITY OF INTRA-CORPOREAL KNOT PROCEDURE DURING A LAPAROSCOPIC SIMULATION PROGRAM

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PURPOSE

Auditory distractions such as phone calls can significantly impact a urologist's focus during delicate procedures like minimal invasive surgeries. This study investigates the effect of such distractions on surgical performance during a laparoscopic training program.

MATERIAL AND METHODS

Trainees participating in a pediatric urology laparoscopic simulation program were tasked with performing an intracorporeal laparoscopic knot under two conditions: first in a quiet environment, and then with three auditory distractions introduced at 30-second intervals. Performance was assessed using an adapted Objective Structured Assessment of Technical Skill (OSATS[PM1]) score (/40), time to complete the knot (in seconds), frequency in needle drops, and procedure interruptions. Results are expressed as median [interquartile range (IQR)] and comparative statistics used paired or unpaired Student-t test.

RESULTS

A total of 21 right-handed pediatric urology residents, with a median number of 8 [6;9] semesters completed, demonstrated a significantly lower median OSATS score in the presence of auditory distractions (25 [21;32] vs 28 [24;31]), $p=0.02$). Additionally, they required significantly more time to complete the knot when exposed to phone call distractions (185s [97;356] versus 140s [95;253], $p=0.02$) compared to a quiet environment. Among the participants, 11 dropped the needle, 10 paused the procedure to answer questions, and 3 completely lost focus while responding.

CONCLUSIONS

This study underscores the detrimental impact of auditory distractions on laparoscopic performance, particularly among less experienced surgeons. Addressing this issue could enhance surgical training efficiency and help mitigate cognitive load, ultimately improving patient safety and procedural outcomes.

S21: PRENATAL

Moderators: Matthieu Peycelon (FR), Lauren Corona USA)

Parallel Programme on Thursday 4, September 2025, 15:25 - 16:00

15:25 - 15:28

S21-1 (OP)

GENETIC INSIGHTS INTO FETAL UROLOGICAL MALFORMATIONS: THE ROLE OF CHROMOSOMAL MICROARRAY ANALYSIS IN PRENATAL DIAGNOSIS

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PURPOSE

Fetal anomalies have long been associated with genomic imbalances. Microdeletions and microduplications in clinically significant regions contribute to specific genetic syndromes. In prenatal samples with a normal karyotype, chromosomal microarray analysis (CMA) detects pathogenic deletions or duplications in ~1% of structurally normal pregnancies and 6% of those with anomalies (Levy et al. Fertil Steril 2018;109:201–12). Due to its higher diagnostic yield, CMA is recommended as the first-tier test for evaluating fetuses with major structural abnormalities. This study aims to determine the prevalence of urological anomalies in prenatal follow-up and the proportion of pathological CMA findings within this subpopulation.

MATERIAL AND METHODS

A prospective database of gestations with urinary tract (UT) malformations has been maintained since 2012. In 2015, institutional protocols incorporated CMA for fetuses with ≥2 ultrasound anomalies or severe morphological alterations. Maternal demographics, gestational age, ultrasound findings, karyotype, and CMA results were analyzed. A descriptive statistical analysis was performed, including prevalence calculation.

RESULTS

From January 2015 to December 2024, 17,059 gestations were monitored, identifying 159 urinary tract anomalies via ultrasound (prevalence: 0.93%). The most common findings were hydronephrosis (66.7%), pelvic kidney (11.9%), multicystic renal dysplasia (5%), and renal agenesis (5%). Other anomalies included hypospadias, megacystis, and exstrophy. 35 patients met the criteria for CMA and accepted testing, with one performed postnatally, later confirmed as Fraser syndrome through exome sequencing. CMA detected a pathogenic terminal trisomy 2p (2.9%), with two uncertain results, increasing the potential detection rate to 8.6%. In one case of polycystic kidney disease, CMA was normal, but exome sequencing identified a pathogenic NPHP3 mutation.

CONCLUSIONS

The prevalence of urological abnormalities detected prenatally in our population is lower than reported in the literature, as is the detection rate of significant variants through CMA in pregnancies with ultrasound-detected anomalies. Larger multicenter studies are needed to establish the role of CMA in the evaluation of genitourinary malformations.

15:28 - 15:31

S21-2 (OP)

★ LONG TERM PUBERTAL OUTCOME OF PATIENTS WITH PRENATAL DIAGNOSIS OF OVARIAN CYSTS

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PURPOSE

Prenatal ovarian cysts (POC) require close postnatal follow-up and sometimes surgery in case of complications. Long-term outcome and pubertal development have not been reported in these patients and would be useful to rationalize treatment, follow-up and parental counselling. This study aims to compare pubertal development and plasmatic AMH level of patients with POC compared to healthy controls.

MATERIAL AND METHODS

This prospective case-control study included patients with diagnosis of POC and healthy controls without endocrine disease. Each child underwent a clinical evaluation of pubertal development (Tanner stages, age of onset), a dosage of plasmatic AMH, LH and FSH. Early puberty was defined as thelarche before 9y and late as after 13y.

RESULTS

105 children were included (56 cases). Mean age was 13.8 yearsd. Mean ages of thelarche (10.85 vs 11.04, $p=0.630$), pubarche (10.96 vs 11.03, $p=0.860$) and menarche (12.4 vs 12.23, $p=0.845$) were not different between cases and controls. Neither early (4 vs 2, $p=0.643$) nor late (2 vs 7, $p=0.080$) puberty was more frequent in case of POC. Plasmatic AMH was comparable between cases and controls (36.75 vs 39.90, $p=0.742$), FSH and LH concentrations were not increased in cases (FSH:4.43 vs 3.87, $p=0.31$; LH: 4.05 vs 3.37, $p=0.38$), even in ovariectomy group (FSH:4.7 vs 3.94, $p=0.23$; LH:4.17 vs 3.45, $p=0.22$).

CONCLUSIONS

Patients with POC develop a normal puberty and have levels of plasmatic AMH and gonadotropic hormones similar to controls. These data are reassuring for the pubertal outcome of these patients and that may alleviate their follow-up, at least for those without ovariectomy.

15:38 - 15:41

S21-3 (OP)

DOES ANTENATAL REPAIR FOR MYELOMENINGOCELE IMPROVE BOWEL OUTCOMES? A PROSPECTIVE COHORT STUDY

Fernanda REIS ¹, Patric TAVARES ¹, Renan TIMOTEO DE OLIVEIRA ¹, Antonio GORGEN ¹, Maria Eduarda LIMA ², Leonardo FRAGA ¹ and Tiago ROSITO ³

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PURPOSE

Neurogenic bowel is a condition resulting from malformations in nervous system pathways, commonly associated with myelomeningocele. This condition often manifests symptoms such as constipation and fecal incontinence. Myelomeningocele presents significant neurological challenges, and antenatal surgery has been proposed to improve outcomes, particularly in the orthopedic and neurological domains. While some studies report some improvements in bladder function, evidence regarding its impact on bowel function remains limited.

MATERIAL AND METHODS

This prospective cohort study evaluates bowel symptoms in patients aged 4 to 18 years, with a focus on assessing fecal continence in the pediatric population. We included 75 patients, 16 of whom had undergone antenatal surgery.

RESULTS

The majority of patients had lumbar and sacral lesions. In the postnatal surgery group, 92.8% of patients experienced either constipation or fecal incontinence, with 7.2% remaining asymptomatic. In contrast, 18.2% of patients in the fetal surgery group were asymptomatic, indicating that the likelihood of being asymptomatic more than doubled in the antenatal group. Additionally, urinary tract infections (UTIs) were more common in patients with bowel symptoms in both groups. In the antenatal surgery group, 31% of patients were non-ambulatory, compared to 47% in the post-natal surgery group, where mobility impairments may further exacerbate bowel symptoms.

CONCLUSIONS

This study represents an initial analysis within a larger cohort of myelomeningocele patients treated at our institution in Brazil. Neurogenic bowel dysfunction remains underrecognized and undertreated worldwide in this patient population, despite its significant impact on both quality of life and bladder function. The initial findings give us some hope regarding bowel function improvement in antenatal repair to be confirmed in the future.

UROLOGICAL OUTCOMES OF 5-YEAR-OLD PATIENTS FOLLOWING OPEN PRENATAL SPINA BIFIDA APERTA REPAIR

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INTRODUCTION

This study aimed to re-assess the urological outcomes of patients at five years of age who underwent open prenatal spina bifida aperta repair (OPSBAR) at our institution. Our earlier results have confirmed a decreased incidence of neurogenic lower urinary tract dysfunction (nLUTD) in children with OPSBAR.

PATIENTS AND METHODS

Patients with OPSBAR were subjected to a standardised follow-up protocol. We retrospectively reviewed the urological outcomes including continence status, need for clean intermittent catheterisation (CIC), use of anticholinergics, and the urodynamic findings collected in a RedCap database. We defined normal bladder function as the absence of detrusor overactivity and incontinence during filling cystometry and the presence of voluntary micturition at capacity with a normal voiding pattern, with no evidence of detrusor-sphincter-dyssynergia or elevated post-void residual during urodynamic testing including uroflowmetry.

RESULTS

A total of 91 patients (age 5 - 13 years) were included in the study. Twenty-two percent (20/91) of patients had normal bladder function during their routine urology follow-up based on the result of their urodynamic assessment. All patients with normal bladder function exhibited spontaneous micturition, with 60% (12/20) being fully continent, 30% (6/20) requiring diapers at night, and 10% (2/20) not yet fully toilet trained and using diapers during the day. CIC was regularly performed by 70% of patients (64/91), and 45% (41/91) required anticholinergic therapy, all of whom also performed CIC. A subgroup analysis showed a higher percentage of normal bladder function in patients born after 2018 (35% vs. 12%, $p < 0.05$).

CONCLUSION

In our cohort, we were able to demonstrate that 22% of patients with OPSBAR exhibit normal bladder function at the age of five. Compared to the available data on the incidence on nLUTD in patients with postnatal repair of spina bifida, this finding clearly reaffirms the favourable urological outcomes of prenatal intervention.

AN AGE-MATCHED COMPARISON OF EARLY UROLOGICAL OUTCOMES IN PATIENTS WHO UNDERWENT ANTENATAL VERSUS POSTNATAL MYELOMENINGOCELE REPAIR: A PROSPECTIVE SINGLE CENTRE EXPERIENCE

Lianne PICKETT ¹, Ganesh VYTHILINGAM ¹, Kevin CAO ², Neetu KUMAR ¹, Dominic THOMPSON ³, Paolo DECOPPI ², Jan DEPREST ⁴, Divyesh DESAI ¹ and Nav JOHAL ¹
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PURPOSE

The urological benefits of antenatal versus postnatal myelomeningocele (MMC) repair remain unclear due to variabilities in clinical management and study design. This study compares urological outcomes in patients who underwent antenatal layered anatomical repair versus postnatal repair, managed with a consistent proactive risk-stratified protocol at a single centre.

MATERIAL AND METHODS

We analysed a prospective database of MMC patients managed antenatally and postnatally at our institution's neurogenic bladder service (2018–2024). The Management of Myelomeningocele Study (MOMS) inclusion/exclusion criteria (e.g. confirmed Chiari II malformation on prenatal ultrasound) was subsequently applied to the postnatal group to minimise confounding variables.

RESULTS

A total of 66 MMC patients underwent repair, with 19 (58% female; median age 4 years; median follow-up 4 years) receiving antenatal repair and 47 receiving postnatal repair. After applying MOMS criteria, 16 patients were matched for comparison (69% female; median age 5 years; median follow-up 5 years). Urological outcomes are summarised in Table 1. Statistical analysis utilised Fisher's exact test.

Outcome	Antenatal	Postnatal	P value
Hydronephrosis	11%(2/19)	50%(8/16)	0.06
Vesicoureteral reflux	16%(3/19)	31%(5/16)	0.43
Renal scarring (DMSA)	11%(2/19)	19%(3/16)	0.65
UTI	21%(4/19)	44%(7/16)	0.18
CIC	63%(12/19)	81%(13/16)	0.29

CONCLUSIONS

Contrary to recent reports, our initial follow-up results suggest potential benefits to renal function from antenatal treatment of MMC. Establishing a rigorous urodynamics monitoring programme will further assess the impact of antenatal treatment on urological disorders in children with MMC.

S22: EXSTROPHY 1

Moderators: Raimondo Cervellione (UK), Anne-Karoline Ebert (GER)

Parallel Programme on Thursday 4, September 2025, 16:30 - 17:30

16:30 - 16:33

S22-1 (OP)

★ SUBPERIOSTEAL TUNNELLED ALLOGRAFT RECONSTRUCTION OF THE SYMPHYSEAL LIGAMENTS (STARS) IN BLADDER EXSTROPHY-EPISPADIAS COMPLEX

David KEENE ¹, Arianna MARIOTTO ¹, Mohamed KENAWAY ², Emmanouil MORAKIS ² and Raimondo CERVELLIONE ¹

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PURPOSE

Despite pelvic osteotomy helps to secure the closure of the anterior abdominal wall, its role remains controversial because pubic diastasis (PD) partially recurs within 6 months in most patients. Aim: to assess allograft symphyseal reconstruction (ASR) for maintaining pubic approximation post iliac osteotomies in bladder exstrophy (BE) repair.

MATERIAL AND METHODS

Fifteen consecutive patients had ASR with modified oblique iliac osteotomies at delayed exstrophy repair. Tendon allografts were tunnelled subperiosteally around the pubic bones, passed through the obturator foramina and reinforced by anterior chondro-periosteal vicryl sutures. A control group (C) of 24 patients underwent delayed exstrophy repair with osteotomy but no ASR. Postop external fixator and mermaid dressings prevented leg abduction. PD assessed pre-operatively CT scan (A), post-operatively pelvic x-ray before fixator removal (B) x-ray at latest follow-up (C). Data collection was prospective, and is presented as median (IQ range), t-test for groupwise statistical analysis.

RESULTS

All patients had successful bladder closure with no dehiscence or neurological sequelae. Post-op PD stayed the same in ASR group (<3mm difference) in 12/15(80%) at follow up, compared to 1/24(4%) control group.

	Allograft symphyseal reconstruction (ASR)	Control (C)	P-value
Number patients	15	24	
Age BLEX closure(months)	12(10-16)	7.8(4-12)	
Underlying condition	11 classic exstrophy 2 cloacal exstrophy 2 exstrophy variant	24 classic exstrophy	

Gender		4M,11F	17M,7F	
Pubic diastasis (mm)	A –pre-op	50(47-53)	51(44-54)	P=0.11
	B –post-op (exfix removal)	22(17-24)	21(18-23)	P=0.27
	C –post-op latest follow-up	23(19-27)	34(32-42)	P<0.00001
Follow-up period (months)		6 (4-9)	64 (24-90)	

CONCLUSIONS

Pubic approximation post-iliac osteotomy and allograft symphyseal reconstruction is maintained in the majority of exstrophy patients at median follow-up of 6 months.

16:33 - 16:36

S22-2 (OP)

INTRODUCING THE "M-FACTOR" AN OBJECTIVE MEASUREMENT THAT CHARACTERIZE PUBIC DIASTASIS IN BLADDER EXSTROPHY-EPISPADIAS COMPLEX

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PURPOSE

Bladder exstrophy-epispadias complex (BEEC) involves osseous pelvic defects and a wide pubic diastasis (PD). We aimed to assess how using a standard pelvic measurement of posterior inferior iliac spine distance (dPIIS) as a growth metric within a ratio, PD/dPIIS or "M-factor," accounts for overall pelvic size compared to PD alone.

MATERIAL AND METHODS

PD and dPIIS were measured on 268 radiographs (134 of BEEC patients paired with age and gender matched controls) at 4 timepoints: preoperative, intraoperative, early post-operative and late post-operative.

RESULTS

Following BEEC repair with osteotomies and pubic bone approximation, PD and the M-factor decreased significantly. (See Table for measures). Due to early spreading of the bones as well as infant growth, there was no statistical difference between pre-operative and early post-operative PD, however there was a significant

difference in the M-factor. With gradual increase in PD over time, there was a significant difference between early and late post-operative PD measurements, but not in the M-factor.

Time point	PD (mm) (mean \pm std)	p-value			M Factor (mean \pm std)	p-value		
Pre-operative	35.2 \pm 8.6	<0.01*	0.08		0.89 \pm 0.23	<0.01*	<0.01*	
Intra-operative	24.3 \pm 13.5				0.54 \pm 0.21			
Early post-operative	34.1 \pm 9.8			0.03*	0.73 \pm 0.2			0.45
Late post-operative	39.8 \pm 9.9				0.75 \pm 0.17			

CONCLUSIONS

PD in patients with BEEC changes over time due to surgery as well as growth, while a ratio of PD to an internal reference (dPIIS), does not. This M-Factor ratio can better determine the initial extent of PD within the context of the size of the child, as well as standardize assessment of changes after surgery and during growth and development.

16:36 - 16:39

S22-3 (OP)

PUBIC DIASTASIS AS APREDICTOR OF CONTINENCE OUTCOMES IN ISOLATED MALE EPISPADIAS

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PURPOSE

Isolated male epispadias (IME) presents as an abnormal dorsal opening of the urethral meatus. It occurs in 1:120,000 live male births. Like all pathologies within the Bladder Exstrophy-Epispadias Complex (BEEC), this condition is associated with varying degrees of widened pubic diastasis. This study sought to investigate the correlation between width of diastasis and continence outcomes.

MATERIAL AND METHODS

An IRB-approved, prospectively maintained, single-institutional BEEC database was utilized to identify male patients with isolated epispadias. Electronic medical records were reviewed for data pertaining to patient demographics, their original epispadias revision surgeries, and continence procedures and outcomes. Width of pubic diastasis was recorded through measurements obtained in imaging or physical exam. Continence was described in terms of social continence or >3 hours of daytime dry intervals between voids. These factors were assessed for their impact on continence outcomes.

RESULTS

Of the 150 male epispadias cases reported in the database, 63 patients with complete data were identified. Of the 63 patients, 32 (51%) achieved social continence while the remainder are incontinent. Decreasing trends in

mean width of pubic diastasis were observed in the continent group (2.13 cm, SD 1.36 vs. 2.65 cm, SD 1.18) when compared to the incontinent cohort. 15 of 32 continent patients did not require additional surgery to achieve continence while the remainder received 1-3 surgeries to achieve dryness. The 17 that required surgery had a significantly wider pubic diastasis (3.0 cm, SD 1.25 vs. 1.2 cm, SD 0.69) when compared to the nonsurgical group ($p<0.001$).

CONCLUSIONS

This is the first study to suggest that width of pubic diastasis is directly correlated to achieving continence in the IME population. These findings can assist in clinical decision making when considering the need for continence surgery in these patients, while also helping to manage patient and parent expectations.

16:39 - 16:51

Discussion

16:51 - 16:54

S22-4 (OP)

DIFFERENT METHODS FOR BLADDER NECK REPAIR IN BLADDER EXSTROPHY AND LONG-TERM CONTINENCE OUTCOMES

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PURPOSE

To expose the changing trends in bladder neck repair in bladder exstrophy cases in our center, and to compare the long-term outcomes of different methods.

MATERIAL AND METHODS

Medical records of the cases that underwent bladder neck repair due to bladder exstrophy between 2004-2023 were retrospectively reviewed. The cases that underwent Modified Young-Dees-Leadbetter (YDL) and Kelly radical soft tissue mobilization (KLY) procedures were contacted. Long-term urinary continence and additional surgeries were compared between groups. Cases >4 years-of-age were evaluated for continence, and those who voided voluntarily or remained dry with CIC were considered continent.

RESULTS

Before 2019, YDL was performed, and after 2019, KLY was the procedure of choice. Of the total 66 cases, 50 (15F/35M) underwent YDL and 16 (3F/13M) underwent KLY. Mitrofanoff stoma, ileocystoplasty, bladder neck closure (BNC), and continence rates of the YDL and KLY groups are compared (Table). Excluding BNC cases, urethral continence comparison revealed that the KLY group had a higher rate of continence ($p=.01$) and less need for a BNC ($p=.03$) compared to the YDL group. Additionally, within the KLY group, 50% (3/6) of cases operated primarily were able to void spontaneously, whereas only 23% (2/9) of cases operated secondarily could void spontaneously ($p=.26$), one remained dry with CIC, and one required a BNC.

	YDL (n=50), (%)	KLY (n=16), (%)	p
Mitrofanoff stoma	33 (66%)	4 (25%)	.03
Ileocystoplasty	31 (62%)	3 (19%)	.02
Bladder neck closure	20 (40%)	2 (12%)	.04
Continence (total)(>4 years)	32/50 (60%)	9/10 (90%)	>.05
Continence (urethral)(>4 years)	12/50 (24%)	7/10 (70%)	.004

CONCLUSIONS

In the long-term, continence after the Kelly method was superior, and the need for BNC was lower compared to the YDL method. Future reevaluation with larger patient numbers is planned.

16:54 - 16:57

S22-5 (OP)

SPICA BRACE VS. CAST IN POSTOPERATIVE IMMOBILIZATION IN CHILDREN WITH BLADDER EXSTROPHY

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PURPOSE

Spica casts are traditionally used for immobilization after bladder exstrophy repair. We have evolved our practice to use a custom-fabricated, removable, hip spica brace for postoperative immobilization and hypothesized that this brace would function as well as a spica cast in children undergoing bladder exstrophy repair.

MATERIAL AND METHODS

Children with classic bladder exstrophy who underwent consecutive repairs with concurrent pelvic osteotomies at a single center tertiary care children's hospital between 2018-2024 were included. Post-operative immobilization was initially with a bivalved spica cast until 2021 and switched to a custom spica brace in 2022. Medical records and radiographs were reviewed.

RESULTS

A total of 26 patients (13 male) with a mean age at surgery of 3.7±2 months were included. Fourteen (53.8%) were immobilized in a bivalved spica cast and 12 (46.2%) in a spica brace. Duration of immobilization was 5.5±0.74 weeks with no difference between the groups (p=0.917). Skin irritation occurred in 7/14 (50%) of the spica cast group and only 3/12 (25%) in the brace group (p=0.20). There was no difference in the pubic diastasis between the two groups when assessed at 6–8-weeks, 3-8 months and 10-14 months after surgery (p=0.089, 0.479, 0.651 respectively). There were no patients with abdominal or orthopedic wound complications or dehiscence in either group.

CONCLUSIONS

A custom removable spica brace is a useful alternative for post-operative immobilization in children undergoing bladder exstrophy reconstruction. The spica brace is well tolerated and may ultimately have improved skin integrity, while maintaining the strength and efficacy of a spica cast.

16:57 - 17:00

S22-6 (OP)

USE OF PLATELET-RICH FIBRIN (PRF) IN BLADDER EXSTROPHY REPAIR: A PROSPECTIVE STUDY

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PURPOSE

The most frequent complication following bladder exstrophy repair is fistula formation in the penopubic area. Platelet-rich fibrin (PRF) is an autologous, growth factor-rich biomaterial. This prospective study evaluated the efficiency of using an autologous PRF membrane in cases of bladder exstrophy.

MATERIAL AND METHODS

Twelve male patients with primary classical bladder exstrophy, operated between 2022 and 2024, were prospectively included. Patients were divided into two groups: Group A included 7 patients (58.3%) where PRF was used, and Group B consisted of 5 patients (41.6%) in the control group where standard wound closure was performed without using PRF. During surgery, 5-10 ml of the patient's blood was collected and immediately centrifuged at 3000 rpm for 13 minutes to produce a PRF clot, which was transformed into a dense fibrin membrane. This membrane was applied to the bladder neck area before surrounding tissue approximation. The whole procedure was performed under complete sterilization. Anterior osteotomy was performed in all patients with external fixation.

RESULTS

The median age at surgery was 14±9 months in both groups. Postoperative penopubic fistula formation occurred in 2 patients (40%) from group B, with one case resolving spontaneously and another requiring repair after 8 months. In Group A, one patient developed compartment syndrome intraoperatively, which required penile tissue release.

CONCLUSIONS

PRF is feasible and an alternative tissue for covering the neobladder neck, particularly when additional layers for defect coverage are insufficient. Further randomized comparative studies will be necessary to assess the true benefit of the autologous membrane

PELVIC FLOOR REHABILITATION IN THE BLADDER EXSTROPHY-EPISPADIAS COMPLEX: INITIAL EXPERIENCE

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PURPOSE

The bladder exstrophy-epispadias complex (BEEC) represents an anatomical and functional challenge, affecting various organs and systems, including the genitourinary and musculoskeletal systems, among others.

Our aim is to evaluate the effectiveness of pelvic floor rehabilitation as a complementary approach to surgical management in pediatric patients with BEEC.

MATERIAL AND METHODS

Thirteen BEEC patients underwent pelvic floor rehabilitation between 2018 and 2024. For analysis, patients were divided into two groups based on their surgical stage: those without cervicourethroplasty (closure of the bladder plate and epispadias) (n=6) and those with cervicourethroplasty (n=7). Data were collected from medical records and cystomanometries.

RESULTS

The mean age of the group without cervicourethroplasty was 8.6 years (3.5–10). In this group, the average bladder capacity increased by 32.5 ml ($p<0.05$), and the average dry time improved by 20 minutes ($p>0.05$) after an average of 5.5 sessions. The mean age of the group with cervicourethroplasty was 11 years (7–13). These patients presented with stress incontinence, and all showed improvement, with their absorbent pads being dry or less wet after an average of 4.7 sessions. All patients reported subjective improvement after treatment.

CONCLUSIONS

Pelvic floor rehabilitation is an effective tool to complement the surgical management of BEEC. It promotes urinary continence, optimizes pelvic floor functionality, and improves patients' quality of life. Early rehabilitation should be considered in comprehensive treatment protocols.

CONTINENCE OUTCOMES OF THE KELLY PROCEDURE - WHEN WILL MY CHILD BE DRY?

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Great Ormond Street Hospital for Children, NHS Foundation Trust, Paediatric Urology, London, UNITED KINGDOM

INTRODUCTION

To evaluate the continence outcomes of patients with bladder exstrophy managed exclusively on the Kelly pathway.

MATERIAL AND METHODS

This was a retrospective review of patients managed on the Kelly pathway between 2002 to 2019, with a minimum 5-year follow-up. The pathway includes a neonatal bladder closure, without osteotomy, followed by the Kelly procedure at 12-24 months of age, in all patients. Operative and follow-up data was collected, including the need for urethral CIC and bladder augmentation. Variables studied were continence, status of upper tracts, and functional bladder capacity. Statistical analysis performed included Chi-Square test.

RESULTS

A total of 194 patients were managed on this pathway, of which 159 had a minimum 5-year follow-up and were included in the study. The median age at Kelly procedure was 1.95 years (IQR 1.4-2.5 years). The male:female ratio was 1.96:1, with continence at 10-years post-Kelly higher for girls (56.4% girls vs 48.7% boys(p=0.4)). There was no significant increase in the upper tract dilatation at 10 years compared to 5 years post the Kelly procedure (p=0.9).

	5 years post Kelly procedure	10 years post Kelly procedure
Actual/expected bladder capacity (%)	47.15% (23.7-59.7)	54.29% (38.57-71.43)
(Median, IQR)		
Augmentation	8/159 (5%)	30/121 (24.7%)
Continence Score		
0- Incontinent	30/159 (18.8%)	4/121 (3.3%)
1- Dry intervals, but incontinent	51/159 (32%)	26/121 (21.4%)
	(2 on CIC)	
2- Dry by day	47/159 (29.5%)	28/121 (23.1%)
	(4 on CIC)	(8 on CIC)
3- Dry day and night	22/159 (13.8%)	34/121 (28%)
		(5 on CIC)

CONCLUSIONS

Ten years after a Kelly procedure, a child has a 50% chance of being dry by day. Augmentation cystoplasty is required in 25% patients to achieve continence.

17:18 - 17:30

Discussion

S23: SYSTEMATIC REVIEWS

Moderators: Shabnam Undre (UK), Hillary Copp (USA)

Main Programme on Friday 5, September 2025, 08:05 - 08:45

08:05 - 08:08

S23-1 (OP)

UTILITY OF POSTOPERATIVE ANTIBIOTIC PROPHYLAXIS FOR CHILDREN WITH URETEROPELVIC JUNCTION OBSTRUCTION AFTER PYELOPLASTY: A SYSTEMATIC REVIEW AND META-ANALYSIS

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PURPOSE

The utility of postoperative antibiotic prophylaxis in children undergoing pediatric pyeloplasty for ureteropelvic junction obstruction (UPJO) remains unclear, with growing concerns about antimicrobial resistance. This systematic review and meta-analysis aims to investigate the impact of postoperative antibiotic prophylaxis on the incidence of urinary tract infection (UTI) in these children.

MATERIAL AND METHODS

A systematic search of PubMed, Embase, Web of Science, and Scopus databases was conducted to identify studies comparing the incidence of UTI among patients receiving postoperative prophylactic antibiotics vs. those not receiving them. Data on UTI incidence, stent insertion, and surgical approach were extracted. Meta-analysis was performed using RevMan 5.4 and the Mantel-Haenszel method was utilized for the estimation of pooled risk ratio (RR). The methodological quality assessment was performed using the Newcastle-Ottawa Scale.

RESULTS

A total of 13 studies were included in the systematic review, with 4 studies contributing to the meta-analysis. Among total 2,507 pyeloplasties (2.5% without a stent), 1,876 (74.8%) received prophylactic antibiotics, and had a UTI incidence of 7.6%. Contrary to this, 5.5% of the non-antibiotic cases developed UTIs. The meta-analysis showed no incremental benefit of antibiotic prophylaxis in terms of the incidence of UTI (pooled RR=1.34, 95% CI:0.84-2.14, p=0.22), with minimal heterogeneity ($I^2=0\%$, p=0.63). Factors like uncircumcised status, pre-operative antibiotic administration, and diaper use were associated with higher UTI risk.

CONCLUSIONS

Routine postoperative antibiotic prophylaxis does not significantly reduce the incidence of UTI after pediatric pyeloplasty. A targeted approach, such as the administration of antibiotics at stent removal, may be more appropriate and align with antibiotic stewardship principles.

OUTCOMES OF NONREDUCTION VS REDUCTION PYELOPLASTY IN THE MANAGEMENT OF URETEROPELVIC JUNCTION OBSTRUCTION: A SYSTEMATIC REVIEW AND META-ANALYSIS

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PURPOSE

To compare the surgical outcomes between nonreduction and reduction Anderson-Hynes dismembered pyeloplasty in the management of ureteropelvic junction obstruction (UPJO) among pediatric patients, such as postoperative functional and structural outcomes, complication and failure rate, through a meta-analysis of comparative studies.

MATERIAL AND METHODS

Electronic databases, such as PubMed, EMBASE, Scopus, and Cochrane Library, including the Cochrane Database of Systematic Reviews and the Cochrane Central Register of Controlled Trials, were searched to identify published literature containing comparison between reduction and nonreduction pyeloplasty up to December 2023. Data regarding postoperative anteroposterior diameter, differential renal function, and complications were extracted. Data synthesis and statistical analysis were done using ReviewManager. Random-effects model and mean difference were used for calculation of all effect estimates with 95% confidence intervals (CI) for extrapolation. This study was registered with PROSPERO (CRD42021288645).

RESULTS

Five studies were selected for analysis, encompassing 177 renal units, of which 88 (49.72%) cases were reduction pyeloplasty and 89 (50.28%) cases were nonreduction pyeloplasty. Our overall pooled effect estimates show statistically significant difference favoring reduction pyeloplasty in terms of anteroposterior pelvic diameter (APPD) (RR=2.99; 95%CI 1.49, 4.50), differential renal function (DRF) (RR=2.73; 95%CI 0.34, 5.13) and change in anteroposterior pelvic diameter (RR=3.27; 95%CI 2.64, 3.90). Analysis of both groups revealed no significant difference in terms of complication (RR=0.91; 95%CI 0.38, 2.16) and failure rate (RR=1.50; 95%CI 0.28, 8.04).

CONCLUSIONS

The evidence depicted in our study demonstrates that reduction pyeloplasty results in superior APPD, differential renal function and change in APPD over nonreduction pyeloplasty. Complication and failure rates between the two groups are comparable.

FACTORS ASSOCIATED WITH PREGNANCY RELATED COMPLICATIONS IN WOMEN WITH A HISTORY OF VESICoureTERAL REFLUX: A SYSTEMATIC REVIEW BY THE EAU-YAU PAEDIATRIC UROLOGY WORKING GROUP

Ismail SELVI ¹, M. İrfan DÖNMEZ ², Numan BAYDILLI ³, Yesica Quirroz MADARRIAGA ⁴, Rianne LAMMERS ⁵, Edoardo BINDI ⁶, Simone SFORZA ⁷, Fardod O'KELLY ⁸, Bernhard HAID ⁹, Beatriz Banuelos MARCO ¹⁰ and Lisette Aimee T'HOEN ¹¹

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PURPOSE

Vesicoureteral reflux (VUR) may have long lasting effects on affected individuals, especially in females. Its intertwined relationship with urinary tract infection (UTI) has been well documented and there is a further risk during pregnancy where UTIs are more problematic. In this systematic review, we aimed to analyze existing data within the literature to identify factors associated with pregnancy-related complications in women with a history of VUR in childhood.

MATERIAL AND METHODS

PubMed, MEDLINE, Embase, and the Cochrane Library databases were searched to identify all published reports of pregnancy outcomes in women with a history of VUR in childhood up to January 2024 (PROSPERO Registration ID: CRD42024550470). Selection criteria included all English-language original articles reporting pregnancy outcomes (maternal and fetal morbidities) in pregnant patients with a history of VUR in childhood.

RESULTS

The search yielded 1060 papers, and 17 articles met the PICO inclusion criteria after screening and eligibility assessment. This systematic review assessed 2349 women with a history of VUR in childhood, 1167 pregnant women and a total of 2206 pregnancies. Compared with the general obstetric population, the results showed an increased rate of pregnancy-related complications (particularly febrile urinary tract infection, gestational hypertension, pre-eclampsia) in the presence of renal scarring, even if the women had undergone anti-reflux surgery in childhood, but not persistent low-grade VUR. Due to the methodological and clinical heterogeneity of the included articles, conduction of a meta-analysis was inappropriate. Therefore, a narrative synthesis of the data was performed.

CONCLUSIONS

Despite the lack of larger prospective randomized controlled trials with long-term follow-up, based on the findings of this systematic review, we conclude that close monitoring during pregnancy should be recommended

in the presence of persistent high-grade VUR or in women with renal scarring, even if VUR has resolved. However, persistent low-grade VUR is not associated with an increased pregnancy-related complications.

08:21 - 08:24

S23-4 (OP)

ENDOSCOPIC TECHNIQUES IN THE TREATMENT OF VESICO-URETERIC JUNCTION OBSTRUCTION IN PRIMARY OBSTRUCTIVE MEGAURETER: A SYSTEMATIC REVIEW AND META-ANALYSIS

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PURPOSE

Multiple endoscopic treatments for vesico-ureteric junction obstruction (VUJO) have been reported. This systematic review aimed to determine the effectiveness of these techniques for treating primary obstructive megaureter.

MATERIAL AND METHODS

A systematic review of Medline, Embase, PubMed, and Cochrane Library databases was conducted following PRISMA guidelines (PROSPERO: CRD42024536020). Studies reporting outcomes of endoscopic VUJO treatment in children were included. Outcomes assessed included procedural success (ability to complete the procedure), treatment success, and complications. Bias risk was evaluated using ROBINS-I, and pooled success rates (95% CI) were calculated using random-effects models.

RESULTS

We included 27 studies with 790 children (845 renal units). Techniques identified:

- i) Stent alone
- ii) Sequenced dilatation with stent
- iii) VUJ incision with stent
- iv) Balloon dilatation with stent
- v) Balloon dilatation with double stent
- vi) Cutting balloon with stent
- vii) Balloon dilatation alone

Reported procedural and treatment success ranged from 36–100% and 26–100%, respectively (Table). The most common definition of treatment success was “no evidence of obstruction at follow-up” (n=12), though nine definitions were identified overall. Re-intervention and ureteric reimplantation were most frequently required for stent alone (23% and 53.7%). Pooled meta-analysis demonstrated 95% (87–100%) success for balloon dilatation with stent (iv) and 95% (85–99%) for VUJ incision with stent (iii).

	Studies (n)	Patients; Renal units (n)	Successful procedures (% range)	Successful treatment (% range)
Stent alone	3	66; 72	36-100	26-75
Sequenced dilator with stent	2	63; 67	94-100	97*
VUJ Incision with stent	4	67; 79	90-100	90-100
Balloon with stent	16	489; 521	58-100*	71-100*
Balloon with double stent	2	27; 27	100*	80-100*
Cutting balloon with stent	3	14; 14	100	100
Non-cutting balloon alone	2	64; 65	72-100	35-81

Table: Successful procedure and treatment rate per intervention. N.b. some studies reported multiple techniques. VUJ = Vesico-Ureteric Junction.

CONCLUSIONS

Endoscopic techniques appear effective for managing VUJO. Data from this study may assist surgeons when counselling families of affected children. However, the wide variation in outcome definitions limits meaningful comparisons between techniques. Addressing this inconsistency through a standardized core outcome set could enhance future research comparability.

08:24 - 08:31

Discussion

08:31 - 08:34

S23-5 (OP)

COMPARATIVE EFFICACY OF SURGICAL TECHNIQUES FOR HYPOSPADIAS REPAIR IN PATIENTS WITH AN UNFAVORABLE URETHRAL PLATE: A SYSTEMATIC REVIEW AND NETWORK META-ANALYSIS

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PURPOSE

To compare the efficacy, complication rates, and patient outcomes of various surgical techniques for hypospadias repair in male infants with an unfavorable urethral plate. The study aims to determine which surgical approach offers the best long-term outcomes and fewer complications in this challenging subset of hypospadias cases.

MATERIAL AND METHODS

This systematic review and network meta-analysis followed PRISMA guidelines. A comprehensive search of PubMed, Cochrane Library, Embase, and ScienceDirect was conducted through May 2024. Studies were screened using the Cochrane Risk of Bias 2.0 tool. A random-effects meta-analysis was performed using R-Studio to synthesize effect estimates. Eligible studies included randomized controlled trials, prospective cohort studies, retrospective studies, and case series involving male patients with hypospadias and an unfavorable urethral plate.

RESULTS

Twenty studies involving 1,483 patients were included, with four studies contributing to the network meta-analysis. Meatal stenosis and narrow meatus were more common with TIP urethroplasty, while glans dehiscence was less frequent with flaps. TIP and GTIP procedures had a lower incidence of diverticulum compared to flaps. No significant differences in fistula complications were observed. However, the GTIP approach was associated with fewer overall complications (OR 0.37; 95% CI [0.19-0.75]).

CONCLUSIONS

Flap and GTIP techniques may offer lower complication rates than TIP for patients with an unfavorable urethral plate, with GTIP showing modest superiority. Further high-quality comparative studies are needed to confirm these findings.

08:34 - 08:37

S23-6 (OP)

INFERTILITY IN MEN WITH SPINA BIFIDA: A SYSTEMATIC REVIEW

Randy CASALS ¹, Kimberly WAGGENER ¹, Marc COLACO ¹, John WIENER ² and Hooman SADRI ¹

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PURPOSE

As males with spina bifida (SB) live longer and become sexually active, fertility is becoming an increasing priority. This has had little investigation compared to renal preservation and infection prevention in this population. This review seeks to analyze the available data regarding paternity rates and factors contributing to infertility in men with SB.

MATERIAL AND METHODS

We searched Pubmed using the following terms: "spina bifida AND infertility"; "spina bifida AND erectile dysfunction"; "spina bifida AND ejaculatory dysfunction"; "spina bifida AND spermatogenesis"; "myelomeningocele AND infertility". There were no filters for publication year or language. Results were compiled with additions from searching references of included articles. Articles were excluded if they were only available in a non-English language, the full-text article was unavailable, if they were reviews, case reports, guidelines, or editorials, or if deemed irrelevant to the search topic.

RESULTS

70 manuscripts were compiled with an additional 3 obtained from searching references. After excluding results meeting exclusion criteria, 10 remained which included 529 subjects. 2/10 manuscripts addressed paternity rates and 56% of the males reported to attempt to father children were successful. 57% of participants reported erectile dysfunction, 42% reported ejaculatory dysfunction, and 35% of participants with semen analyses were found to have azoospermia.

CONCLUSIONS

Few studies exist that examine fertility in men with SB and in this review, only about half of the males were successful in fathering children. The etiology of infertility in this population is likely multifactorial as there were significant rates of erectile dysfunction, ejaculatory dysfunction, and low sperm counts reported in multiple studies. Individuals with SB have differing degrees of sexual dysfunction, often correlating to the level of lesion and ambulatory status. Further investigation is needed to elucidate the causes of impaired fertility in men with SB and perhaps better understand male factor infertility overall.

08:37 - 08:45

Discussion

S24: EXSTROPHY 2

Moderators: MS Ansari (IND), Joseph Borer (USA)

Main Programme on Friday 5, September 2025, 09:25 - 10:00

09:25 - 09:28

S24-1 (OP)

NATIONAL CENTRALIZATION OF BLADDER EXSTROPHY EPISPADIAS COMPLEX (BEEC) PATIENTS IN SWEDEN: A COMPARISON OF SHORT-TERM POSTOPERATIVE OUTCOMES

Lisa Karin Elisabet ÖRTQVIST¹, Malin AF PETERSEN², Gundela HOLMDAHL², Gillian BARKER², Gisela REINFELDT², Magnus ANDERBERG², Sofia SJÖSTRÖM² and Tomas WESTER²

1) Karolinska University Hospital, Paediatric Surgery, Stockholm, SWEDEN - 2) Women and Children's health, Pediatric surgery, Stockholm, SWEDEN

PURPOSE

To assess short-term postoperative outcomes in bladder exstrophy epispadias complex (BEEC) patients following centralization of care.

MATERIAL AND METHODS

This retrospective observational study included all patients who underwent primary surgery for BEEC in Sweden from 1st of July 2013 to 30th of June 2023. Surgical care of BEEC was centralized from four centres to one the 1st of July 2018. Patients treated in the 5 year-period prior to centralization were compared with those treated during the 5 year-period after centralization. Main outcomes were unplanned readmissions, surgical procedures, and complications graded according to Clavien Madadi >3 within 90 postoperative days.

RESULTS

Nineteen and 21 patients underwent primary surgery due to BEEC before and after centralization, respectively. Median age at first contact with a paediatric urologist and age at primary surgery was similar before and after centralization. Osteotomies were more common prior centralization (92% vs 36%, $p=0.01$). Median length of hospital stay after primary bladder closure was shorter after centralization (16 vs 26 days, $p<0.001$). Unplanned readmissions were required in 19 % ($p=0.92$) of patients both prior and after centralization and unplanned surgical procedures in 5% vs 10% ($p=0.92$) respectively. One complication grade IIIa occurred before centralization compared to two grade IIIa complications post centralization ($p=0.92$).

CONCLUSIONS

Centralization of care for BEEC did not delay time to first visit with paediatric urologist or time to primary surgery. Unplanned readmission, surgical procedures or postoperative complications did not increase after centralization. Performing osteotomies was less common post centralization, probably explaining shorter hospital stays.

MANAGEMENT OF FEMALE EPISPADIAS: A REVIEW OF 20 YEARS OF EXPERIENCE IN A SINGLE INSTITUTION

Tharanga GAMAGE ¹, Emma SELLERS ², Naima SMEULDERS ³, Navroop JOHAL ³ and Imran MUSHTAQ ³

1) Great Ormond Street Hospital Children, Paediatric Urology, London, UNITED KINGDOM - 2) Great Ormond Street Hospital for Children London, Paediatric Urology, London, UNITED KINGDOM - 3) Great Ormond Street Hospital, Paediatric Urology, London, UNITED KINGDOM

PURPOSE

Female epispadias is a rare condition with limited long-term clinical outcomes reported.

MATERIAL AND METHODS

We report a retrospective cohort study of 14 females presenting with epispadias in a single centre between 2000 and 2025.

RESULTS

Thirteen patients had primary Kelly procedure. One patient initially underwent a urethrocervicoplasty but later had a Kelly repair for incontinence. Two patients were excluded from continence data assessment due to incomplete follow-up data.

	Late presenters (>1yr)	Early presenters (<1yr)
Number of patients	7	7
Presenting complaint	Urinary incontinence	Abnormal genitalia
Average age of reconstruction	5.5 yrs	14 months
EBC/FBC% at 5 yrs post-Kelly	71.9%	40.6%
EBC/FBC% at 10 yrs-post Kelly	77.3%	55.3%

EBC-expected bladder capacity, FBC-functional bladder capacity

At 5-years post-Kelly procedure, 33.3%(4/12) achieved daytime dryness with spontaneous voiding, increasing to 50%(5/10) at 10-years. The patient who underwent urethrocervicoplasty without bladder neck reconstruction(BNR) experienced incontinence after five years and subsequently achieved daytime continence four years after a Kelly procedure.

Four patients required redo BNR, all of whom had small bladder capacities and three with notably short urethras. Only one patient showed significant improvement in continence following redo BNR.

Three patients underwent bladder neck bulking agent injections, but none achieved daytime dryness with this intervention alone.

CONCLUSIONS

50% of female epispadias achieved daytime continence with spontaneous urethral voiding at 10 years post-Kelly procedure.

Bulking agents to the bladder neck show minimal benefit for continence.

09:31 - 09:39

Discussion

09:39 - 09:42

S24-3 (OP)

PSYCHIATRIC MORBIDITY IN BLADDER EXSTROPHY AND EPISPADIAS COMPLEX: A POPULATION-BASED CASE-CONTROL STUDY AND SYSTEMATIC REVIEW WITH META-ANALYSIS

Essi KYMÄLÄINEN¹, Niklas PAKKASJÄRVI², Max KARUKIVI³, Päivi RAUTAVA⁴, Bernd PAPE⁵ and Liisi RIPATTI⁶

1) University of Turku, The Department of Pediatric Surgery, Turku, FINLAND - 2) University of Helsinki, The Department of Pediatric Surgery, Helsinki, FINLAND - 3) University of Turku, The Department of Adolescent Psychiatry, Turku, FINLAND - 4) University of Turku, Department of Public Health, Turku, FINLAND - 5) University of Vaasa, The Department of Mathematics and Statistics, Vaasa, FINLAND - 6) Turku University Hospital, Department of Pediatric Surgery, Turku, FINLAND

PURPOSE

Bladder exstrophy and epispadias complex (BEEC) is a rare congenital anomaly with significant medical and psychosocial implications. We aimed to evaluate the prevalence and risk factors for psychiatric morbidity in BEEC patients employing a dual approach, combining a systematic review with a retrospective nationwide register study.

PATIENTS AND METHODS

We conducted a systematic literature review following PRISMA guidelines, including studies on psychiatric disorders or symptoms, or quality of life (QoL) in BEEC patients of all ages. Article quality was assessed with the Newcastle-Ottawa Scale. Prevalence data for psychiatric conditions along with scores from validated psychiatric and QoL questionnaires were extracted.

Additionally, we identified all BEEC patients born between 2001-2006 in Finland and a matched and randomised general population control group without congenital malformations. We evaluated the prevalence and risk factors for psychiatric diagnoses in this cohort up to year 2022.

RESULTS

Of 3850 retrieved results, 30 studies with 1179 participants were included in the review. Most studies showed mental health to be worse in BEEC patients compared to general population, while their QoL was not consistently worse. The overall prevalence of psychiatric morbidity was 31% [95% CI 17-47%].

In the Finnish cohort 80% (n=16/20) BEEC patients had a psychiatric diagnosis compared to 26% (n=21/80) of

the controls (OR 11.2, 95% CI [3.37-37.4], $p<0.001$). Severity of the anomaly, number of surgeries, maternal unemployment or maternal psychiatric diagnosis were not significant risk factors.

CONCLUSION

BEEC is associated with an elevated risk of psychiatric morbidity. Our dual approach highlights the need for systematic mental health assessment and support in this population.

09:42 - 09:45

S24-4 (OP)

THE INFLUENCE OF SHAME ON FRIENDSHIP IN INDIVIDUALS WITH EXTROPHY-EPISPADIAS-COMPLEX

Johanna SEIBT ¹, Anne-Karoline EBERT ², Karolin HOLY ¹ and Nicole Syringa HARTH ¹

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PURPOSE

The exstrophy-epispadias-complex (EEC) has not only physical but also complex psychological consequences. The aim was to test hypotheses about the association between shame, disclosure, quality of friendship and life satisfaction of individuals with EEC.

MATERIAL AND METHODS

During the pre-registered study, data were collected anonymously via four self-help groups in Germany and Switzerland and a matching Instagram account. This cross-sectional survey included the 'Chronic Illness-related Shame Scale', subscales of the 'McGill Friendship Questionnaire', and the 'Short Scale to Measure General Life Satisfaction', slightly modified. The disclosure scale was self-created and tested using exploratory factor analysis. reliabilities for all scales were acceptable to very good. For hypothesis testing, Pearson-correlations and linear regressions were used (significance level of 5%). For gender differences, t-tests were conducted.

RESULTS

106 adults (47 men, 58 women) completed the questionnaire. Results show a negative correlation between shame and social support ($r=-0.209$, $p=0.032$), intimacy ($r=-0.249$, $p=0.010$) and life satisfaction ($r=-0.408$, $p=0.000$). The less shame, the greater the tendency to talk about EEC in the best friendship with approach goals ($r=-0.329$, $p=0.001$). Additionally, in affected friendships a positive correlation between disclosure with approach goals and positive feelings ($r=0.375$, $p=0.000$), social support ($r=0.358$, $p=0.000$) and reliable alliance ($r=0.310$, $p=0.001$) was found. Contrary to expectations, men reported tendentially more shame than women ($t(1,103)=-1.699$, $p=0.092$).

CONCLUSIONS

In EEC the level of shame and disclosure play a significant role in the context of friendship. Preventively established emotion trainings and specified social skills trainings could help patients to cope better with life challenges.

HOW TO DEVELOP A CONDITION-SPECIFIC HEALTH-RELATED QUALITY OF LIFE QUESTIONNAIRE IN CHILDREN WITH BLADDER EXSTROPHY-EPISPADIAS COMPLEX?

Ulrika SVENNINGHED ¹, Elin ÖST ², Gundela HOLMDHAL ², Lisa ÖRTQVIST ², Magdalena BOIJE ², Sofia SJÖSTRÖM ¹, Cecilia LINDSTRÖM GRUBER ² and Michaela DELLENMARK BLOM ¹

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PURPOSE

Items of a condition-specific health-related quality of life (HRQoL) questionnaire should be generated from affected children's/parents' experiences to ensure important content for them is measured. Such a questionnaire has not existed for children with bladder exstrophy-epispadias-complex (BEEC). We hypothesized that children with BEEC experience specific impact due to their condition. The study aim was to describe those experiences to develop of a condition-specific questionnaire.

MATERIAL AND METHODS

Prospectively, ten focus groups with 37 participants (14 children aged 8-18 matched for different severity of BEEC; 23 parents of children with BEEC aged 0-18) were held at two tertiary pediatric urology departments in Sweden, led by a moderator, audio-recorded and transcribed. Reports of children's BEEC-related HRQoL were extracted from transcripts, content analyzed, categorized into HRQoL domains to aid item generation. According to well-established principles of qualitative research, no controls or hypothesis testing were used.

RESULTS

1730 experiences were identified and allocated into seven HRQoL domains, several sub-domains each, aiding item generation for a condition-specific HRQoL questionnaire:

- Living with the choice of openness' about BEEC e.g.
 - To tell or not to tell
 - Showing or hiding parts of your body
- Social relationships/interactions due to BEEC e.g.
 - Others' questions
 - Social vulnerability
- Functioning in environments outside home
 - Public bathrooms
 - School
 - Leisure activities
- Adaptions due to bladder (dys)function, in relation to
 - Nighttime
 - Time schedules for bladder emptying
 - Clothes
- Psychological impact due to BEEC e.g.
 - Different appearance
 - Need to feel secure
- Growing up with BEEC e.g.

- Sexuality/Sex
- Independence/Responsibility
- Thoughts about the future
- Physical consequences due to BEEC e.g.
 - Micturation, sensation, urinary urgency
 - Pain

CONCLUSIONS

This is the first reported focus group study in BEEC children and reveals their possible physical, psychological and social impact in life. This information enables the development of a condition-specific HRQoL questionnaire for children with BEEC. This is needed to improve patient-centered care and research.

09:48 - 10:00

Discussion

S25: DSD 2

Moderators: Brian VanderBrink (USA), John Pope (USA)

Main Programme on Friday 5, September 2025, 10:00 - 10:35

10:00 - 10:03

S25-1 (OP)

GONADAL TISSUE CRYOPRESERVATION AMONG PATIENTS WITH DIFFERENCES OF SEX DEVELOPMENT UNDERGOING GONADECTOMY

Hassan KHAN ¹, Ashley TALTON ¹, Ilina ROSOKLIJA ¹, Josephine HIRSCH ¹, Courtney FINLAYSON ², Allison WEISMAN ³, Diane CHEN ⁴, Monica LARONDA ⁵, Elizabeth YERKES ¹, Earl CHENG ¹, Erin ROWELL ⁶ and Emilie JOHNSON ⁷

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PURPOSE

Our multidisciplinary clinic offers patients with differences of sex development (DSD) undergoing gonadectomy the option to enroll in a gonadal tissue cryopreservation (GTC) research protocol. Among patients undergoing gonadectomy, we: (1) assessed rates of GTC counseling, protocol enrollment, and tissue preservation, and (2) analyzed outcomes by diagnosis and laterality.

MATERIAL AND METHODS

We conducted a retrospective review of gonadectomy patients from 2013-2023. Data collected: record of GTC counseling, GTC protocol enrollment, GTC rates, pathology findings. Outcomes were analyzed by gonadectomy laterality and diagnosis.

RESULTS

46 patients underwent gonadectomy (76% assigned female, 44% had germ cells on pathology). Most (35/46, 76%) received GTC counseling, including 88% (29/33) of bilateral and 46% (6/13) of unilateral gonadectomy patients ($p=0.006$). 19/35 (54%) enrolled in the GTC protocol with 47% (9/19) ultimately preserving tissue. All 4 unilateral and 5/15 (33%) bilateral gonadectomy patients preserved ($p=0.033$). Among the 10 who enrolled and did not preserve, 7 had no germ cells, 2 had gonadoblastoma (tissue recalled for pathology, preservation not available) and 1 had discordance between germ cell type and gender identity. Details about GTC counseling, protocol enrollment, and preservation rates, and findings by diagnosis will be presented.

CONCLUSIONS

GTC counseling and preservation varied by diagnosis and gonadectomy laterality. While 76% of patients received GTC counseling, <50% enrolled in GTC, and <20% preserved tissue. Those undergoing bilateral gonadectomy had higher counseling rates, but lower protocol enrollment and preservation rates vs. unilateral, findings which may represent choices made due to expected differences in germ cell presence and tumor risk by diagnosis.

QUALITATIVE ANALYSIS OF DECISIONAL DYNAMICS ABOUT GONADECTOMY AND GONADAL TISSUE CRYOPRESERVATION AMONG FAMILIES OF INDIVIDUALS WITH DIFFERENCES OF SEX DEVELOPMENT

John SMITH ¹, Lauren CORONA ², Ashley TALTON ³, Josephine HIRSCH ³, Ilina ROSOKLIJA ³, Jax WHITEHEAD ⁴, Jaclyn PAPADAKIS ⁵, Diane CHEN ⁵, Courtney FINLAYSON ⁴, Earl CHENG ³, Elizabeth YERKES ³ and Emilie JOHNSON ³

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PURPOSE

Gonadal tissue cryopreservation (GTC) is an experimental option for patients with differences of sex development (DSD) undergoing gonadectomy. Decisions about gonadectomy and GTC are complex due to imprecise tumor risk estimates, uncertain fertility potential, and potential discordance between germ cells and gender identity. We investigated decisional dynamics within families electing gonadectomy with/without GTC to inform clinical practice.

MATERIAL AND METHODS

Participants were recruited from 2022-2023 and eligible if they were counseled in our multidisciplinary clinic and an adolescent/young adult (AYA) patient who underwent gonadectomy at age 11 or older, or parent of a patient who underwent gonadectomy at any age. Participants completed semi-structured interviews about their decision-making process. Iterative qualitative analysis was performed to identify themes/perspectives.

RESULTS

Eighteen participants were included (7 AYA, 6 parents of AYA, 5 parents of children aged 1-3 at gonadectomy). We identified a range of intra-family communication and decisional dynamics. Some individuals relied on simple information and heuristics for decision-making, while others recognized the complexity and turned to clinicians for guidance. Some families were in complete agreement, while others detailed challenges of parent-AYA or parent-parent disagreement. When queried about who was and who should be primary decision-maker, different levels of responsibility by age and transition over time were noted. Representative quotes for themes will be presented.

CONCLUSIONS

Participants recalled a range of communication and family-related dynamics during the gonadectomy decision-making process. The primary decision-maker varied, but patient involvement tended to increase with age. This variability should be considered in clinician conversations and tools for facilitating decisions about gonadectomy and GTC.

LONG- TERM FUNCTIONAL OUTCOMES OF GIRLS WITH UNOPERATED UROGENITAL SINUS: DOES A DIAGNOSIS OF CONGENITAL ADRENAL HYPERPLASIA AFFECT OUTCOME?

Bethan JOHNSON¹, Niamh GEOGHEGAN¹, Nicola BRIDGES² and Marie-Klaire FARRUGIA¹

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PURPOSE

Due to controversies surrounding female genital surgery before the age of consent, urogenital sinus (UGS) surgery in our centre, has been delayed for the last 12 years. Our aim was to review the symptomatic/ bladder functional outcomes of unoperated girls with UGS, and identify differences between those with or without a diagnosis of congenital adrenal hyperplasia (CAH).

MATERIAL AND METHODS

Retrospective review of consecutive patients with UGS identified from a prospectively-maintained database. Clinical/ imaging data, renal function and bladder functional assessments were analysed with parental consent. Numbers too small for statistical analysis due to the unique nature of the cohort.

RESULTS

11 patients with UGS were identified, 7 CAH and 4 non-CAH. Median follow-up was 8 (0.5-12 years). All CAH patients were fully toilet-trained bar one infant. All were dry; one girl reported frequency and urgency but no incontinence. No reported UTI's. All had normal upper tracts imaging (one patient underwent a pyeloplasty in infancy); normal bladder capacity and post-void bladder residuals on ultrasound. None had started menstruation.

Of the 4 non-CAH patients: one patient has normal-capacity bladder with poor emptying/ leakage and catheterises via a Mitrofanoff; a second with poor emptying and bilateral dysplastic kidneys has a vesicostomy; third patient (history of sacrococcygeal teratoma) has a neuropathic bladder on CIC; the fourth has mild bladder dysfunction on anticholinergic treatment. 50% had UTI's prior to treatment; none have reached menarche.

CONCLUSIONS

Within the limitation of patient numbers, we have identified previously unpublished evidence that bladder functional outcomes are strikingly different between girls with and without CAH. The findings will contribute to ongoing discussions about the ideal age for UGS surgery in this patient group.

IS CERVICAL ANATOMY NORMAL IN GIRLS WITH AMBIGUOUS GENITALIA DUE TO CONGENITAL ADRENAL HYPERPLASIA?

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PURPOSE

Women with Congenital Adrenal Hyperplasia (CAH) and ambiguous genitalia are known to face higher pregnancy-related complications. However, no previous study has specifically examined uterine cervical anatomy in these patients. This study aims to present vaginoscopic findings regarding the uterine cervix in CAH patients before feminizing genitoplasty.

MATERIAL AND METHODS

Vaginography images of CAH patients with ambiguous genitalia were retrospectively reviewed (2018-2024). Demographic data, urogenital sinus (UGS) length, urethral length, and vaginal depth were also recorded.

RESULTS

Fifty-one patients who underwent feminizing genitoplasty were retrospectively reviewed. 8 patients without CAH were excluded from the study. Mean age at vaginography was 26 months (5-98 months). In the cervical images, it was observed that uterine cervix of 82% patients were open, only 18% of them were normal. The uterine mucosa was observed that expand from cervical ostium in most cases. The mean length of UGS was 25.52mm (10-80mm), the mean length of urethra was 17,55mm (5-35mm), the mean vaginal depth was 40,02mm(17-100mm). Association between vaginal depth and cervical anomaly was analyzed, no correlation was found ($p=0,340$). The relationship between wide cervical opening and age at surgery was also analyzed, there was no relation, but the p value was 0,070.

CONCLUSIONS

CAH patients can conceive, albeit with higher risk of complications. The finding of a wide cervical opening in the majority of our cohort may explain these adverse pregnancy outcomes. To our knowledge, this is the first study in the literature focusing on the cervical anatomy of girls with CAH and ambiguous genitalia, highlighting the need for further research to confirm these findings

THE IMPORTANCE OF PEER RELATIONSHIPS ON POSITIVE PSYCHOSOCIAL FUNCTIONING IN DIFFERENCES OF SEX DEVELOPMENT (DSD)

Jennifer HANSEN-MOORE ¹, Amy TISHELMAN ², Cindy BUCHANAN ³, Diane CHEN ⁴, Yee-Ming CHAN ⁵, Nahata LEENA ⁶, Joseph RAUSCH ⁶, Hailey UMBAUGH ⁶, Bryan SACK ⁷, Rama JAYANTHI ⁸ and Canice CRERAND ⁶

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PURPOSE

Differences of Sex Development (DSD) can be associated with poor psychosocial adjustment. We explored peer acceptance as a potential protective factor and childhood trauma (non-medical) as a risk factor for quality of life (QoL), anxiety, and depression. We hypothesized that peer acceptance would enhance, and trauma would negatively impact psychosocial outcomes. We also hypothesized that younger participants (12-17) would report better psychosocial outcomes than young adults (18-26).

MATERIAL AND METHODS

We recruited from 4 children's hospitals as part of a larger cross-sectional study on youth with DSD ages 12-26. Participants (57 adolescents and 40 young adults; 35% 46,XX, 60% 46,XY, 5% sex chromosome DSD) completed standardized measures on emotional problems, QoL, childhood trauma, and perceived acceptance from friends. Linear regression analyses examined the role of peer acceptance and trauma on anxiety, depression and QoL.

RESULTS

Greater peer acceptance was strongly related to lower depressive and anxiety symptoms, and better QoL (all $p < .001$) even when controlling for effects of trauma. Adolescents reported better QoL ($p < .05$), more close friendships ($p < .01$) and trended towards less depressive symptoms ($p = .05$) than young adults. Rates of childhood trauma did not differ in our population from rates in the general population.

CONCLUSIONS

Peer acceptance is a strong protective factor for positive psychosocial adjustment. The transition to adulthood may be an especially challenging time, and young adults with DSD appear to face greater risks for depression and social isolation. These findings emphasize the importance of assessing social functioning and promoting meaningful social engagement.

S26: CLOACA

Moderators: CD Anthony Herndon (USA), Duncan Wilcox (USA)

Main Programme on Friday 5, September 2025, 11:10 - 12:00

11:10 - 11:13

S26-1 (OP)

LUTO-CLOACA - A NEW ENTITY OF PERSISTENT CLOACA WITH PRENATAL VESICOAMNIOTIC SHUNTING

Ina MEMETAJ-LANG, Lena GINDNER and Dr. Thomas BOEMERS

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PURPOSE

Since the application of vesicoamniotic shunting (VAS), we have encountered severe forms of cloacal malformations associated with the prenatal appearance of Lower Urinary Tract Obstruction (LUTO plus 46XX karyotype). This patient group is very heterogeneous in terms of anatomical findings. However, there appears to be a specific subgroup of these patients with a distinct anatomical constellation. In our opinion this subgroup represents a new entity of cloacal malformations. The aim of this presentation is to describe the anatomical features and clinical implications of this new entity of cloacal malformation.

MATERIAL AND METHODS

We conducted a retrospective analysis of our patients with cloacal malformations who underwent prenatal intervention (VAS). We analyzed the timing of VAS, the distinct anatomical findings, including endoscopy, imaging and the type of operative reconstruction performed.

RESULTS

A total of 11 patients were identified. Eight patients exhibited classic anatomical features of cloacal malformation. In three patients, we found a significantly different anatomical constellation. This specific group demonstrated a hypoplastic common channel leading into the bladder, while the rectum opened in the middle of the upper part of the trigonum. The vaginae opened laterally to the rectum. In all three patients, the pelvic opening was very narrow, allowing only one of the three pelvic organ systems to be pulled through.

CONCLUSIONS

The implementation of VAS in female patients with LUTO challenges us, as this new entity of cloacal malformation is not amenable for complete surgical reconstruction. Appropriate prenatal counseling, as well as treatment in specialized centers is crucial for these difficult patient group. Parents have to be aware of the problems encountered after birth, best before the decision for VAS is made.

IS NEWBORN HYDROCOLPOS ASSOCIATED WITH THE FUTURE USE OF ASSISTED BLADDER EMPTYING AMONG PATIENTS WITH CLOACAL ANOMALIES?

Diego GONZALEZ ¹, Natalie EWING ², Butool HISAM ³, Christopher CORBETT ³, Thomas O. XU ⁴, Christina P. HO ³, Hans G. POHL ³, Andrea BADILLO ⁴, Marc LEVITT ⁴ and Briony K. VARDA ³
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PURPOSE

Is newborn hydrocolpos associated with the future use of assisted bladder emptying among patients with cloacal anomalies?

MATERIAL AND METHODS

We identified all patients with a history of cloaca who presented at a single institution from 2019 to 2024. The outcome was the use of ABE. Hydrocolpos at birth was the exposure variable. Covariables included cloaca characteristics, genitourinary and spinal abnormalities, and repair type. Descriptive statistics were calculated and logistic regression performed.

RESULTS

71 patients with a median age of 5.4 years (range 1 – 26) were included. 35 (49%) had a complex cloaca (common channel ≥3-cm), 43 (61%) had vesicoureteral reflux (VUR), 36 (51%) had a spinal cord abnormality, and 58 (82%) had a sacral ratio >0.4. 24 (34%) had hydrocolpos at birth. ABE was used by 45 (63%) patients at last follow up. ABE use was greater in patients with complex cloaca (30 [86%] vs. 15 [42%], p < 0.001), a history of urogenital separation (27 [82%] vs 18 [47%], p < 0.001) and VUR (32 [74%] vs 13 [46%] p = 0.03). 37 (90%) patients who used ABE pre-repair continued it post-operatively. On adjusted analysis, only complex cloaca increased the odds of ABE use (OR 6.7 [CI 2.1-24.3], p = 0.002). Hydrocolpos was not associated with ABE (p = 0.7).

CONCLUSIONS

Cloacal complexity independently increased the likelihood of ABE use after cloacal repair. Hydrocolpos was not associated.

Future Use of Assisted Bladder Emptying Among Patients with Cloaca (median age 5 years-old)

Adjusted Association (p < 0.05)	Unadjusted Association (p < 0.05)	Not Associated (p > 0.05)
Cloaca complexity (common channel≥3-cm)	Cloaca complexity (common channel≥3-cm)	Spinal cord abnormality
	Vesicoureteral reflux	Hydrocolpos
	Use of Assisted bladder emptying prior to cloacal repair	History of spinal cord detethering
	Type of cloacal repair	Sacral Ratio
		Demographic variables

IS THE LENGTH OF COMMON CHANNEL A PREDICTOR FOR UROLOGICAL ANOMALIES IN CLOACAL MALFORMATIONS?

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PURPOSE

Prognosis of cloacal malformations is strongly impacted by the presence of associated renal anomalies and the risk of chronic renal failure.

In accordance with the concept of caudal regression's anomalous cloacal septation, it has been hypothesized that a longer common channel (CC) increases the risk of urological issues. However, this remains unproven.

This study aims to determine if CC length predicts the risk of urological anomalies in cloacal malformations.

MATERIAL AND METHODS

We conducted a retrospective review of patients with cloacal malformations treated between 2015 and 2024 at pediatric colorectal clinics in three international centers: Chris Hani Baragwanath Academic Hospital (Johannesburg, South Africa), Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico (Milan, Italy) and the Medical University of Vienna (Vienna, Austria). We evaluated radiological, surgical and clinical data, stratifying patients by CC length (> or < 3 cm).

RESULTS

A total of 72 patients were identified, with 26 excluded due to incomplete data. Of the remaining 46 patients, 21(46%) had a CC > 3 cm, while 25(54%) had a short CC. Overall, 31 patients (68%) presented at least one renal anomaly, with hydronephrosis (58%) being the most common. Anatomical anomalies, including vesicoureteral reflux, single or ectopic kidneys, duplex systems and multicystic-dysplastic disease, were observed in 18 patients (40%). The distribution of anomalies was equal in both groups (9 each for long and short CC), with no statistically significant association ($p = 0.55$).

CONCLUSIONS

In this study, CC length did not predict urological anomalies. Further research is essential to better understand the pathogenesis of these associations.

OUTCOMES AND MANAGEMENT OF MULLERIAN ANOMALIES IN FEMALE PATIENTS WITH COMPLEX CONGENITAL BIRTH DEFECTS OF CLOACAL EXSTROPHY AND ANORECTAL MALFORMATION

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PURPOSE

Females with cloacal exstrophy (CE) and cloacal anomalies (CA) have high rates of mullerian abnormalities leading to outflow tract obstruction (OTO) of menses, invasive surgeries, and/or chronic pain. This study aims to discuss long-term outcomes of mullerian structures in a single major institution with a high volume of CE and CA patients.

MATERIAL AND METHODS

A retrospective database was reviewed for CE and CA patients. Data on mullerian anatomy at birth, hormone suppression, and surgical procedures were evaluated.

RESULTS

91 females (46XX) were included with median age of 14.5 [0.17, 30.5] years. Of those, 68.1% had duplicated uteri. Vaginal anatomy was duplicated in 52.7% with 18.7% having complete atresia. 23.1% of patients underwent a hysterectomy (41.2% CE, 18.9% CA). Hysterectomy was performed prior to menarche in 52.4% and post menarche in 47.6%. Hormone suppression was used in 24.2% (22/91) of the entire cohort, with 45.2% (10/22) of those patients proceeding to hysterectomy. In those with hormone suppression alone (54.5%, 12/22), either vaginoplasty to relieve obstruction or hysterectomy of obstructed horn is planned for the future once the patient is ready to participate in surgical discussion. All hysterectomies were performed on patients with duplicated uteri. Reasons for pre-menarchal hysterectomy included nonfunctional or noncommunicating uteri, little chance of safe pregnancy, and/or family desire for minimal surgical intervention. Post-menarchal hysterectomy reasons included pelvic pain secondary to hematocolpos, desire to discontinue hormone suppression and/or need for vaginostomy, and/or vesicouterine fistula.

CONCLUSIONS

This study demonstrates high rates of surgical removal of mullerian structures in CE and CA patients. Further study would be beneficial for early identification of patients at risk of requiring hysterectomy while maintaining fertility potential in those with low risk of mullerian complications.

COMPARATIVE OUTCOMES OF PSARVUP AND TUM IN CLOACAL MALFORMATIONS: A RETROSPECTIVE STUDY

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PURPOSE

To evaluate the technical feasibility and long-term urological outcomes of posterior sagittal anorecto-vagino-urethroplasty (PSARVUP) and total urogenital mobilization (TUM) in patients with cloacal malformations.

MATERIAL AND METHODS

A retrospective study of 30 cloaca patients who underwent definitive repair at two tertiary centers. Preoperative evaluations included cystoscopy, distal colostogram, and MRI to assess common channel and urethral lengths. Patients underwent PSARVUP (n=18) or TUM (n=12) based on surgical preference. Postoperative outcomes were reviewed over three years, with assessments of urinary tract infections (UTIs), voiding patterns, continence, and urodynamic parameters.

RESULTS

TUM was associated with shorter operative times and better cosmetic outcomes but frequently disrupted the bladder neck-pelvic floor relationship, leading to higher incontinence rates and dependence on clean intermittent catheterization (CIC). PSARVUP, though more complex, preserved anatomical relationships, resulting in longer urethral length, improved spontaneous voiding rates (66.7% vs. 25%), and reduced UTI rates.

Urinary Function: Spontaneous voiding rates were higher in PSARVUP (66.7% vs. 25%), with fewer patients requiring CIC.

Complications: UTI rates were lower in PSARVUP, but vesicourethral fistulas were more common. TUM had higher rates of vaginal/urethral stenosis.

Urodynamics: PSARVUP patients exhibited better bladder compliance and detrusor function.

Anatomy: PSARVUP better preserved bladder neck position and functional urethral length.

CONCLUSIONS

PSARVUP offers superior functional urological outcomes in complex cloaca cases, particularly those with short urethral length, due to its ability to preserve anatomical structures. TUM provides faster recovery but should be limited to patients with favorable anatomy. Long-term, multicenter studies are needed to refine surgical approaches.

RENAL OUTCOMES IN PATIENTS WITH CLOACAL MALFORMATION: HOW AND WHY DOES CKD STAGE PROGRESS IN THESE PATIENTS?

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PURPOSE

Patients with cloaca have a high risk of CKD. However, data on the progression and management of their affected renal function is limited. We summarised these findings in a tertiary reference centre.

MATERIAL AND METHODS

Retrospective review of renal and continence outcomes of cloaca patients treated from 1980-2022. We compared the presence of possible risk factors in patients who had undergone renal transplantation and those who had not. We also reviewed renal function with eGFR at 1 year, after potty training and at adolescence.

RESULTS

Of the 37 patients from the study period, we had registered eGFR in 16 patients, with a mean age of 12.25±7.16 years. Of these, 25% had undergone renal transplantation. No significant differences were found between transplanted and non-transplanted groups in type of cloaca (classical vs. posterior), length of common channel (<3 vs. >3 cm), hydrocolpos, hydronephrosis, ectopic/solitary kidneys, ureteral ectopia, bladder agenesis or spinal anomalies. Transplanted patients had significantly higher rates of dysplasia (75% vs. 8%) and VUR (75% vs. 41%).

At 1 year, CKD staging was: I (62.5%), II (18.7%), III (2.5%), IV (6.2%). After potty training, 1 patient worsened from stage I to II, 3 from II to III, 1 from III to IV and the stage IV patients had been transplanted. Of the 8 patients who had reached puberty, CKD had worsened in 62.5%, with 1 escalating from stage I to II, 1 from II to III and 3 requiring a transplant (coming from stage II, III and IV).

43.7% patients achieved continence and the rest remain dry with CIC, in 12.5% through urethra and 43.7% with Mitrofanoff, of which 25% required bladder neck closure and 6% a cervicourethroplasty.

CONCLUSIONS

Cloaca patients are at risk of CKD, especially those with renal dysplasia and VUR. CKD stages II and III after potty training predict deterioration at puberty. These patients often require surgery to achieve dryness.

PATIENTS BORN WITH CLOACAL MALFORMATIONS ARE AT-RISK FOR PROGRESSIVE RENAL DISEASE STARTING AT A YOUNG AGE.

Briony VARDA ¹, Christopher STANIORSKI ¹, Butool HISAM ¹, Melanie BOWSER ², Christopher CORBETT ³, Allison MAYHEW ⁴, Melissa MEYER ⁵, Christina HO ¹, Hans POHL ¹, Andrea BADILLO ⁴ and Marc LEVITT ⁴

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PURPOSE

We aimed to identify patients born with cloaca “at-risk” for progressive renal disease and identify associated factors.

MATERIAL AND METHODS

Patients with cloaca repaired primarily and followed prospectively (2020-2025) were included. “At-risk” for renal disease (solitary kidney, renal dysplasia/atrophy, VUR grades 3-5, UTD SFU grades 3-4, and/or eGFR<90) was the outcome. Unadjusted analysis was used to identify associated factors. Sub-group analysis was performed for CKD stage ≥ 2 (among patients >1 year-old with cystatin C and creatinine).

RESULTS

Fifty patients with median age 0.8 years were included. 33 (66%) were “at-risk”, of whom a majority had concurrent urinary tract anomalies (91%). Median GFR among patients “at-risk” was 70 (1-87; n = 22). Associated factors included: common channel (CC) ≥ 3 -cm (85% vs. 53%, p = 0.02), urethral length (median 1.2 vs. 2.2; p < 0.001), poor sacral ratio (100%), and assisted bladder emptying prior to repair (79% vs. 50%, p = 0.03). Among 33 patients with eGRF, 20 (61%) had CKD ≥ 2 . Associated factors included: CC ≥ 3 -cm (92% vs. 40%, p < 0.01), urethral length (median 0.95 vs. 2.3, p < 0.001), rectal fistula above PC line (77% vs. 30%, p = 0.02), uterovaginal anomalies (p < 0.05 for all), high-grade UTD (86% vs. 44%, p = 0.02) and renal atrophy (100% vs. 50%, p = 0.02).

CONCLUSIONS

Most patients with cloaca were “at-risk” for progressive renal disease. This was likely driven by cloacal complexity and attendant upper urinary tract and uterovaginal anomalies; findings affirm the need for longitudinal CKD and bladder function screening.

S27: HYPOSPADIAS 3

Moderators: Lisette 't Hoen (NL), Sadaf Aba Umer (PAK)

Main Programme on Friday 5, September 2025, 12:40 - 13:15

12:40 - 12:43

S27-1 (OP)

EFFECTIVENESS OF COMBINED URETHROPLASTY AND PENOSCROTAL TRANSPOSITION CORRECTION IN SECOND-STAGE REPAIR FOR PROXIMAL HYPOSPADIAS: OUTCOMES ON GENITAL APPEARANCE AND FISTULA PREVENTION

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PURPOSE

To assess the effectiveness of combining urethroplasty with penoscrotal transposition correction during the second stage of Byar's repair for proximal hypospadias, with a focus on improving genital appearance and reducing the incidence of penoscrotal junction fistula.

MATERIAL AND METHODS

95 patients with proximal hypospadias and penoscrotal transposition underwent two-stage repairs at our hospital. In the first stage, a modified Byar's repair with bilateral flaps affixed to the ventral corpus cavernosum along the penile midline was performed. Patients were then divided into two groups for the second stage. Group A (n=44) received both urethroplasty (Duplay) and penoscrotal transposition correction (modified Glenn-Anderson) together, while Group B (n=51) underwent only urethroplasty (Duplay). The Hypospadias Objective Scoring Evaluation (HOSE) and Pediatric Penile Perception Score (PPPS) were used to assess urinary function and cosmetic outcomes as perceived by parents.

RESULTS

The median HOSE was significantly higher in Group A (16.00 [15.00, 16.00]) than in Group B (14.00 [13.00, 15.00]), $P < 0.001$. Similarly, the PPPS score was higher in Group A (12.00 [12.00, 15.00]) compared to Group B (12.00 [10.00, 12.00]), $P = 0.043$. Complications were significantly less frequent in Group A (13.64%, 6/44) versus Group B (31.37%, 16/51), $P = 0.041$. The incidence of fistulae was also lower in Group A (6.82%, 3/44) than in Group B (21.57%, 11/51), $P = 0.043$. Notably, Group A had no case of fistula in the penoscrotal area, and satisfactory correction of penoscrotal transposition was achieved. In contrast, six cases of penoscrotal area urinary fistulas occurred in Group B.

CONCLUSIONS

Adding penoscrotal transposition correction to urethroplasty during the second stage of Byar's repair for proximal hypospadias is a safe and effective strategy. This combined approach reduces the risk of urethral fistula, especially in the penoscrotal area, enhances cosmetic outcomes, and minimizes the need for further surgeries and anesthesia.

GRAFT SIZE IN PROXIMAL HYPOSPADIAS: BRACKA VS STAC

Robert MCCUSKER, Ma'in MARSWEH, Laura JACKSON, Karim AWAD, Mark WOODWARD and Mohamed SHALABY

Bristol children's hospital, Paediatric surgery, Bristol, UNITED KINGDOM

PURPOSE

To compare urethral plate graft dimensions for the treatment of proximal hypospadias using a three stage "STraighten And Close" (STAC) technique versus the traditional two stage Bracka procedure.

MATERIAL AND METHODS

Demographic and operative data were collected on consecutive patients who underwent either Bracka, or primary STAC procedures at our institution. The two groups were compared for age, weight, clinical features and urethral plate graft dimensions at time of grafting. Urethral plate dimensions were then corrected to rule out age-related differences.

RESULTS

52 Bracka and 35 STAC patients were included for analysis. STAC patients were significantly older (3.6 vs 1.4 years) and heavier (14.7 vs 10.1kg) than the Bracka patients at the time of grafting. The STAC grafts were 96% longer (mean length 45 vs 23mm), 62% wider (mean width 21 vs 13mm), with a 216% greater area of 945 vs 299mm². When corrected for normative stretched penile length for age, the STAC grafts remained statistically significantly larger.

CONCLUSIONS

This study demonstrates that by employing a STAC technique, patients are receiving a significantly larger urethral plate graft. The patients in the STAC group were older due to pandemic related waitlists at the time of adoption of this technique, and because grafting is performed in the second stage, in contrast to Bracka. After correcting for age, the STAC urethral plate graft is still longer and wider. We anticipate this will be associated with less curvature and a longer phallus in the final reconstruction and later life.

EFFECTIVENESS OF USING BUCCAL FLAP IN THE FIRST STAGE OF URETHROPLASTY FOR PROXIMAL FORMS OF HYPOSPADIAS

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PURPOSE

This study aims to present our experience and long-term results of using a buccal flap for the formation of the urethral plate as a material that closely resembles urothelium, as opposed to using a free skin graft. This approach aims to reduce long-term complications, such as urethral stricture due to skin scarring in the future.

MATERIAL AND METHODS

We conducted a retrospective study over the period from 2014 to 2024. A total of 344 two-stage urethroplasties were performed during this time. The average age of the patients was 1.8 years. The study is divided into two periods: Period I (2014-2020) involved 158 children who received free skin grafts from the prepuce, with complications occurring in 21% (33 cases), including urethral fistula in 26.8% and distal urethral strictures in 4%. Period II (2021-2024) involved 186 children who received buccal flaps, with complications occurring in 3%: urethral fistula in 1% and urethral strictures in 3.7%. Additionally, we evaluated long-term results in adulthood: 5 adult males, with an average age of 21 years, presented with distal urethral strictures after prior urethroplasty using a free graft.

RESULTS

The harvesting of the buccal flap is a straightforward process with significant advantages in the postoperative period. This technique allows for the exclusion of long-term complications such as urethral strictures.

CONCLUSIONS

The use of buccal flaps in the first stage of urethroplasty for proximal hypospadias demonstrates a marked reduction in complications compared to traditional free skin grafts, suggesting it as a favorable option for surgical management.

POSTAURICULAR VERSUS SKIN GRAFT ON CRIPPLE HYPOSPADIAS : WHEN BUCCAL GRAFT IS NOT ENOUGH

Fatih OZKAYA ¹, Ahmet Furkan ÖZSOY ¹, Araz MUSAEV ¹, Aykut AKINCI ², Bahri Efe TURGUT ³, Berk BURGU ¹ and Tarkan SOYGUR ¹

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PURPOSE

Crippled hypospadias is a severe form of failed hypospadias repair requiring complex reconstructive surgery. The choice of graft material plays a critical role in surgical success, impacting complications and long-term outcomes. This study evaluates postauricular and inguinal grafts in hypospadias salvage surgery whom had previous failed buccal graft surgery and patients with who don't have healthy penile skin and/or shaft.

MATERIAL AND METHODS

Retrospective review of 47 patients undergoing hypospadias salvage surgery over five years was performed. Twenty-two patients received postauricular grafts, while twenty-five had inguinal grafts. Outcome measures included dehiscence rates, second-stage repair failure, fistula formation, and parental penile perception scores. Chi-square tests and independent t-tests were used for statistical analysis, with significance set at $p < 0.05$.

RESULTS

Postauricular grafts demonstrated better outcomes, but not all differences were statistically significant. Dehiscence occurred in 2/22 (9.1%) postauricular cases vs. 5/25 (20%) inguinal cases ($p = 0.08$). Failed second-stage repairs were 3/22 (13.6%) in the postauricular group vs. 7/25 (28%) in the inguinal group ($p = 0.04$). Fistula formation was lower in the postauricular group (4/22, 18.2%) compared to the inguinal group (8/25, 32%), though this difference was not significant ($p = 0.09$). Parental penile perception scores were higher in the postauricular group ($p = 0.02$), indicating better aesthetic satisfaction.

CONCLUSIONS

While postauricular grafts showed lower complication rates and better aesthetic outcomes, not all differences were statistically significant. These findings suggest that postauricular grafts may be preferable for complex hypospadias repair, particularly for aesthetic reasons and lower second-stage failure rates, but further studies are warranted.

★ AUTOLOGOUS EXOSOMES INDUCE REGENERATION OF CORPUS SPONGIOSUM IN PROXIMAL HYPOSPADIAS REPAIR

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PURPOSE

This study explores the use of autologous exosomes derived from urine-derived stem cells(USC-exosomes) to stimulate the regeneration of spongiosum tissue beneath the neourethra epithelium, utilizing endothelial and smooth muscle cells remaining in the defect area.

MATERIAL AND METHODS

Forty patients with proximal hypospadias were enrolled and randomly divided into two groups. Both groups underwent repair using the two-stage Byars procedure. The exosomes group (n=20) received autologous USC-exosomes. During the first stage operation, exosomes mixed with 1% sodium hyaluronate were applied to the underside of the flap at a dosage of $1-3 \times 10^{10}/\text{ml}$, 0.5ml for each cm^2 flap. The control group (n=20) received sodium hyaluronate. Six months later, tissue samples were harvested from the reconstructed urethral plate in both groups. All patients were evaluated after the second stage, assessing repair complications, urine flow rate, and urethral wall thickness via ultrasound.

RESULTS

Both groups completed the study without any patient losses. Histological examinations of the exosomes group revealed a greater presence of sinusoidal vascular structures beneath the neo-urethral plate compared to the control group. Additionally, there was increased expression of VEGF and α -SMA, indicating active angiogenesis in the exosomes group. There were 4 cases of urinary fistula in both exosomes group and control group. And 1 case of urethral stricture in control group. Urethral wall thickness was greater in the exosomes group ($3.01 \pm 0.54\text{mm}$ vs. $2.26 \pm 0.33\text{mm}$, $P < 0.001$), and the Qmax was higher in the exosomes group ($6.70 \pm 3.14\text{ ml/s}$ vs. $4.30 \pm 2.78\text{ ml/s}$, $P = 0.009$).

CONCLUSIONS

Autologous USC-exosomes can effectively stimulate the regeneration of corpus spongiosum-like tissue beneath the neo-urethral plate, resulting in increased urethral wall thickness and urine flow rate. This study highlights the potential for reconstructing a more physiologically normal urethra while preserving the corpus spongiosum.

S28: UPPER URINARY TRACT 2

Moderators: Mark Cain (USA), Yesica Quiroz Madarriaga (SP)

Main Programme on Friday 5, September 2025, 14:15 - 15:10

14:15 - 14:18

S28-1 (OP)

CORRELATION BETWEEN POST-PYELOPLASTY DIURETIC SCINTIGRAPHIC AND ULTRASONOGRAPHIC PARAMETERS IN CHILDREN

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PURPOSE

To assess the correlation between post-operative diuretic scintigraphic and ultrasonographic parameters in children who underwent pyeloplasty.

MATERIAL AND METHODS

In a single arm registered 'ClinicalTrials ID: NCT03939091', prospective cohort study, children who underwent open Anderson-Hynes pyeloplasty were included. While, those who had bilateral pyeloplasty, pyeloplasty in a solitary or anomalous kidney were excluded. At six months after surgery, follow-up ultrasound was performed in a supine position by a single senior experienced radiologist. Diuretic scintigraphy was also done according to an international standardized protocol.

RESULTS

A total of 83 patients were included in the study. The median (IQR) age was 3 (0.95, 7.0) years with 14 children (16.8%) were between 3-6 months. Fifty-seven (68.7%) of them were boys, while the remaining 26 (31.3%) were girls. Post-operative delayed cortical transit time (CTT) showed significant correlation with post-operative antero-posterior diameter (APD) (Spearman rho 0.323, p=0.003), post-operative calyceal dilatation (Spearman rho 0.246, p=0.04), parenchymal thickness (Spearman rho -0.225, p=0.025), post-operative calyx to parenchyma ratio (Spearman rho 0.274, p=0.012), post-operative cortex to pelvis ratio (Spearman rho 0.358, p=0.001) and post-operative half-time ($T_{1/2}$) (Spearman rho 0.497, p <0.001). Whereas, post-operative CTT showed insignificant correlation with APD change (Spearman rho 0.115, p=0.229). Post-operative $T_{1/2}$ also showed significant correlation with post-operative APD (Spearman rho 0.265, p=0.015), parenchymal thickness (Spearman rho -0.727, p <0.001), post-operative calyx to parenchyma ratio (Spearman rho 0.342, p=0.002), post-operative cortex to pelvis ratio (Spearman rho 0.383, p <0.001) and post-operative $T_{1/2}$ (Spearman rho 0.497, p <0.001). While, post-operative $T_{1/2}$ showed insignificant correlation with APD change (Spearman rho 0.114, p=0.304) and post-operative calyceal dilatation (Spearman rho 0.202, p=0.067).

CONCLUSIONS

Post-operative delayed CTT may correlate with post-operative ultrasonographic parameters apart from APD change.

14:18 - 14:21

S28-2 (OP)

A DECREASE IN LONGITUDINAL LENGTH OF KIDNEY IS A RELIABLE TOOL TO PREDICT THE SUCCESS OF PYELOPLASTY IN CHILDREN

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INTRODUCTION

The renal pelvis anteroposterior diameter (RPAPD) is an important parameter used in indication and follow-up of ureteropelvic junction obstruction (UPJO). We hypothesized that kidney dimensions namely, longitudinal length (LL) and transverse width (TW) may have an easier similar validity to RPAPD measurement in the diagnosis of UPJO and follow-up after pyeloplasty.

MATERIAL AND METHODS

Children who underwent pyeloplasty (January 2012- January 2024) were retrospectively evaluated. Exclusion criteria included megaureter, vesicoureteral reflux, urinary stones, duplicated systems, abnormal contralateral kidneys, secondary interventions, and incomplete data. The RPAPD, hydronephrosis grade, LL, and TW measured by US before and 6 months after pyeloplasty were compared.

RESULTS

Among 64 children (14 girls, 35 boys; age range: 6 months to 17 years) who underwent pyeloplasty were studied. A significant reduction in RPAPD and LL was observed in affected kidneys 6 months after pyeloplasty compared to preoperative US measurements. ($p<0.0001$, $p=0.005$, respectively) but not in TW ($p=0.19$). Similarly, the ratio of LL of the affected kidney to contralateral kidney significantly decreased after pyeloplasty ($p=0.026$) but not the ratio of TW ($p=0.357$). A positive correlation between RPAPD and LL is revealed (correlation efficient=0.619).

CONCLUSIONS

The measurement of RPAPD is operator-dependent and requires experience. We think reliable measurements requiring less time and expertise can contribute to effective follow-up. Our findings indicate that LL is elevated in affected kidneys compared to contralaterals, and significantly decreases after pyeloplasty. The present study shows that the decrease in LL may be an alternative straightforward and reliable measurement to predict the success of pyeloplasty.

CAN SUCCESS OF PYELOPLASTY BE PREDICTED BASED ON POSTOPERATIVE ULTRASOUND ALONE? AN ROC ANALYSIS OF 359 LAPAROSCOPIC PYELOPLASTIES

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PURPOSE

Post-pyeloplasty follow-up includes multiple ultrasonograms (USG) and diuretic renograms (DR), but the optimal follow up method remains debated. This study analyzes pre- and postoperative renal pelvic anteroposterior diameter (APD) changes on USG to predict surgical success.

MATERIAL AND METHODS

A single-center retrospective review included 464 patients of which 359 patients (323 primary, 36 redo pyeloplasties) with pre- and postoperative APD and at least one DR were included. Success was defined as symptom resolution, APD reduction, and unobstructed DR. APD changes at 3, 6, and 12 months postoperatively were analysed, with ROC analysis performed on 3-month APD improvement.

RESULTS

Maximum APD reduction occurred at 3 months. ROC analysis determined an optimal cutoff of 41.71% APD reduction for predicting success (AUC: 0.973, 95% CI: 0.958-0.987, $p < 0.001$), with 91.0% sensitivity and 100.0% specificity. An APD Percent Improvement (PI) $<15\%$ strongly predicted early failure (100%), while PI between 15-41.7% was associated with late failures (44.2%).

CONCLUSIONS

In most cases, a 41.7% APD reduction at 3 months accurately predicts pyeloplasty success, potentially eliminating the need for routine diuretic renograms. Patients with $<15\%$ reduction require close follow-up due to early failure risk, while those with 15-42% reduction should be monitored for late failure.

COMPARATIVE ANALYSIS OF POSTOPERATIVE OUTCOMES AFTER
PYELOPLASTY IN CHILDREN WITH URETEROPELVIC JUNCTION
OBSTRUCTION: DOES AGE AT THE TIME OF SURGERY MATTER?

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PURPOSE

The optimal age for the management of ureteropelvic joint obstruction (UPJO) remains a topic of debate, with concerns about unfavorable outcomes when pyeloplasty is performed in younger infants. Herein, we compared postoperative outcomes stratified by age at surgery.

MATERIAL AND METHODS

We reviewed our hydronephrosis database and selected children < 24 months of age who underwent open pyeloplasty from 2008 to 2024 by a single surgeon. Clinical preoperative and postoperative variables were collected. Patients were grouped in cohorts by age at surgery.

RESULTS

A total of 238 patients were included. Preoperative renal pelvic anteroposterior diameter (APD) was slightly higher in younger infants. Postoperative outcome variables were similar across groups. Although younger infants had a slightly higher frequency of re-do pyeloplasty, the occurrence is rare and insignificant.

	0-3m (n=63)	4-6m (n=72)	7-12m (n=66)	13-24m (n=37)	p
Age (months) (IQR)	2.2 (1)	5 (2)	9 (2)	18 (6)	<0.01
Pre-op APD (mm) (IQR)	26 (12)	24 (14)	21 (11)	23 (6)	0.03
Immediate post-op APD	14 (15)	15 (10)	12 (7)	13 (8)	0.48
APD last follow up	9 (9)	10 (7)	8 (7)	7 (9)	0.67
APD % improvement (%) (IQR)	65 (37)	53 (51)	57 (32)	67 (42)	0.32
OR time (mins) (IQR)	144 (88)	140 (82)	122 (67)	166 (55)	0.10
Length of stay (hours)	25 (46)	23 (22)	25 (35)	23 (25)	0.26
ER visits within 30 days	10 (19)	10 (15)	6 (10)	3 (9)	0.39
Readmissions	2 (3)	4 (6)	0 (0)	2 (5)	0.28
Redo pyeloplasty	4 (6)	2 (3)	1 (2)	1 (3)	0.47
Follow up (months) (IQR)	38 (35)	30 (26)	33 (44)	29 (52)	0.51

CONCLUSIONS

Pyeloplasty is a safe and effective procedure for managing UPJO in young babies. Regardless of the age at which the surgery is performed, outcomes do not differ significantly between younger infants and toddlers.

RISK OF POSTOPERATIVE UTI AND COMPLICATIONS WITH URETERAL STENTS WITH EXTRACTION STRINGS IN PEDIATRIC ROBOTIC PYELOPLASTY

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PURPOSE

We sought to review our experience with the postoperative use of ureteral stents with and without extraction strings in a large series of patients following robotic pyeloplasty.

MATERIAL AND METHODS

All robotic pyeloplasty at our institution from 2012 – present were retrospectively reviewed. Patients with < 60 days of follow-up were excluded. Statistical analysis was performed with Fisher's exact testing.

RESULTS

A total of 218 patients underwent robotic pyeloplasty: 188 (86%) had ureteral stents with extraction strings and 30 (14%) patients had internalized stents. Study groups were similarly weighted with regards to demographics and perioperative characteristics.

A total of 13 (6%) patients in our series required treatment for UTI following discharge within 60 days: 4 outpatient (3 string (1.6%) vs 1 non-string (3.4%), $p=0.45$) and 9 inpatient (9 string (4.8%) vs 0 non-string (0%), $p=0.26$). Complications were not statistically different between the two groups (22 vs. 4, $p=0.50$). A total of 11 (5.8%) Clavien 3b complications were noted in the group with extraction strings (5 percutaneous nephrostomy tube placement, 5 ureteral stent replacement). No Clavien 3b complications were noted in the internal stent group. Gender was not associated with an increased risk of complications ($p=0.19$) or UTI ($p=0.59$) on subgroup analysis.

Fourteen (7.4%) patients with extraction strings came to the office for ureteral stent removal; seven (3.7%) required stent removal in the operating room under anesthesia.

CONCLUSIONS

Ureteral stents with extraction strings were not associated with an increased risk of complications or postoperative UTI in our series.

IMPACT OF PROPHYLACTIC ANTIBIOTICS (OR NOT) ON THE INCIDENCE OF FEBRILE URINARY TRACT INFECTIONS FOLLOWING PEDIATRIC PYELOPLASTY: A PROPENSITY SCORE-MATCHED ANALYSIS OF A LARGE CLAIMS DATABASE

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PURPOSE

One of the most common and immediate postoperative complications following pyeloplasty is urinary tract infections (UTI), posing significant morbidity in children. This prompts post-procedure prophylactic antibiotics (pAbx) prescription among many pediatric urologists. We hypothesized that children who did not receive pAbx would have higher febrile UTI (fUTI) rates as those who did.

MATERIAL AND METHODS

Using the TriNetX database, we conducted a retrospective study including patients up to 18 years old, who underwent open or minimally invasive pyeloplasty from November 2004 to November 2024. Patients were stratified into two groups, those who received pAbx and those who did not. Propensity score-matching (PSM) was performed to control for demographics (age at surgery), comorbidities (acute upper respiratory tract infection), and procedures (circumcision, frenulotomy). Primary outcome was 30- and 60-day postoperative fUTI (ICD-10 N39 + ≥100.4F) rates. Odds ratios (OR) with 95% confidence intervals (CI) were calculated.

RESULTS

After PSM, 1,082 patients from 97 healthcare organizations were included, yielding 541 patients in each cohort. Age at surgery and comorbidities were comparable between groups. 30-day postoperative fUTI rates were similar between pAbx and non-pAbx groups (9.7% vs 9.6%, OR 0.79, 95% CI 0.65-1.46). Similarly, 60-day postoperative fUTI rates remained similar between groups (12.7% vs 11.2%, OR 0.86, 95% CI 0.60-1.25).

CONCLUSIONS

Our findings suggest that pAbx does not lower fUTI rates. At 30 and 60 days post-pyeloplasty, the rates of fUTI were similar between the pAbx and non-pAbx groups. Future randomized studies are needed to validate the role of pAbx in children after pyeloplasty.

★ MASTERING LAPAROSCOPIC URETEROCALICOSTOMY: A DECADE OF EXPERIENCE IN A STEP BY STEP VIDEO GUIDE

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INTRODUCTION

Ureterocalicostomy is a surgical alternative for managing severe hydronephrosis secondary to failed pyeloplasty or in primary cases with a small intrarenal pelvis and significant lower calyceal dilatation.

This video presents a step-by-step demonstration of key surgical techniques and insights gained from a decade of experience with laparoscopic ureterocalicostomy at two high-volume centres.

MATERIAL AND METHODS

All patients were positioned in a modified Valdivia-Galdakao position. A retrograde pyelogram was performed, followed by the placement of a ureteral stent in the proximal ureter. A transperitoneal approach was utilised, with dissection of the lower renal pole. In selected cases, a haemostatic manoeuvre similar to the Pringle technique was applied to minimise intraoperative bleeding.

The uretero-calyceal anastomosis was performed in an end-to-side or side-to-side fashion using two continuous 5-0 PDS sutures. A ureteral stent was left in place postoperatively.

RESULTS

A total of 11 patients (median age: 9.8 years) underwent laparoscopic ureterocalicostomy. The median operative time was 173 minutes. A urinary catheter and ureteral stent were maintained for 48 hours and 60 days, respectively. One patient required a redo ureterocalicostomy

CONCLUSIONS

Laparoscopic ureterocalicostomy is a viable option for selected patients with severe hydronephrosis. Careful patient selection and surgical planning are essential. Haemostatic compression techniques can be helpful to reduce intraoperative bleeding and facilitate a successful anastomosis in selected cases.

★ REAL TIME IMAGE FUSION FOR AUGMENTED SURGICAL NAVIGATION

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PURPOSE

Image enhancement techniques are used to improve the visual quality of an image, making it easier for a robot to interpret and help surgeons to navigate the complex surgical anatomy specially in the setting of multiple vessels. The author here in used real time image fusion for augmented surgical navigation in case of multiple vessels in nephron sparing surgery in a child.

MATERIAL AND METHODS

An 8-yr-old boy presented with 6x 6 cm renal mass in right kidney involving upper and mid polar region. He underwent laparoscopic assisted robotic nephron sparing surgery (NSS) using the DaVinci Xi. The digital subtraction angiography (DSA) showed 3 arteries clearly. Under the guidance of image fusion model (Figure 1), we first attempted to find out the upper most vessel. The enhanced imaging system assisted to get down to the targeted vessel more efficiently. Next, we searched for the lower most vessel and image guided navigation was again helpful to dissect this vessel. On 3-dimensional DSA reconstruction it was observed that the middle vessel was placed at a little deeper plane. The image fusion guided search directed us further more confidently to this deeply located vessel. To remain selective, we clamped only the upper two vessels mainly feeding to the tumour area.

RESULTS

The NSS procedure took a total of 210 minutes including the docking time. The procedure went uneventful with a blood loss of 80 ml. The real time image fusion technique guided us to efficiently search and dissect out all the three vessels safely.

CONCLUSIONS

Real time image fusion technique allows surgeon to take advantage of additional information to navigate safely and efficiently during robotic surgery specially in the setting of the complex surgical anatomy or multiple vessels.

S29: VALVES 2

Moderators: Marie Andersson (SWE), Rafal Chrzan (PL)

Main Programme on Friday 5, September 2025, 16:15 - 17:15

16:15 - 16:18

S29-1 (OP)

EFFECT OF EARLY ADMINISTRATION OF OXYBUTYNYN ON BLADDER OUTCOME OF POSTERIOR URETHRAL VALVES IN INFANTS: A PILOT RANDOMIZED CONTROLLED TRIAL

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PURPOSE

To study the effect of the early administration of oxybutynin in infants with primary fulguration of PUV with abnormal urodynamics.

MATERIAL AND METHODS

Twenty-one consecutive with PUV who underwent primary fulguration and had abnormal urodynamic findings after 3 months of follow up, postfulguration, were enrolled. Three patients were excluded (refusal of consent, expired, UDS not done). The remaining 18 were randomly assigned into two groups, Group A (oxybutynin) and Group B (placebo). The clinical, biochemical, radiological and urodynamic findings were re-assessed after 3-6 months of the intervention.

RESULTS

The mean age of fulguration was 4.3 ± 3.52 months (12 days - 12 months). The mean creatinine at presentation was 0.82 ± 0.25 mg% (0.51-1.3 mg%) and the creatinine value at 6-months follow-up was 0.43 ± 0.10 mg% (0.25-0.64mg%). Voiding cystourethrography (VCU) showed unilateral VUR in 5 patients and B/L VUR in 6 patients. The mean age of performing the first UDS was 7 ± 2.7 months (3-15 months) whereas the second UDS was done at a mean age 10.9 ± 3.3 months (6-18 months). The mean observed/expected (O/E) bladder capacity (BC) in group A was $77.56\% \pm 17.96$ (41.6 - 98.1%) which increased significantly to $88.5 \pm 9.44\%$ (67.3% -97.1%) ($p = 0.029$) after the intervention. Mean compliance in group A was 3.05 ± 1.29 ml/cm of H₂O before intervention and improved to 5.7 ± 1.3 ml/cm of H₂O after the intervention ($p=0.00$). The compliance in group B also improved (2.57 ± 1.37 preintervention to 4.2 ± 1.66 ml/cm of H₂O, postintervention($p = 0.003$), however the BC did not improve significantly (p value 0.143). Detrusor pressure did not change significantly either in group A (p value 0.103) or group B (p value 0.275) during this short follow up.

CONCLUSIONS

Early administration of oxybutynin to infants with PUV, before the toilet training, showed significant improvements in compliance and bladder capacity. There is spontaneous improvement of compliance as well.

DO BOYS WITH PUV REALLY HAVE MORE HERNIAS AND CRYPTORCHIDISM?

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PURPOSE

Several reports have suggested a higher rate of cryptorchidism and inguinal hernia in boys with posterior urethral valves (PUV). Both cryptorchidism and hernia are also supposed to be associated with more severe forms of PUV. We aimed to verify if this was true in two large contemporary cohorts of boys with PUV.

MATERIAL AND METHODS

We looked at the incidence of cryptorchidism and inguinal hernia in two cohorts of boys born with PUV between 2012 and 2022 (France and the UK). We compared renal function between boys with or without cryptorchidism/hernia. We also looked at presence of asymmetrical renal function (<40% DMSA) or high-grade VUR on the side of the cryptorchidism/hernia.

RESULTS

Of 202 patients, 20 (10%) had cryptorchidism, which was bilateral in 4 (2%), and 11 patients (5%) had inguinal hernias that were not associated with cryptorchid testes (rates of cryptorchidism and hernia in the general European population are around 2-3% and 3-4% respectively). There was no difference in nadir creatinine between boys with cryptorchidism/hernia and those without (36 µmol/L (20-61) vs 28 (22-41)). The rate of asymmetrical DMSA scan and the rate of high-grade VUR were not different between those with unilateral cryptorchidism/hernia and the rest of the children.

The study did not require formal IRB.

CONCLUSIONS

Our findings suggest cryptorchidism is indeed more frequent in boys with PUV, but less so than previously reported. We did not find a significant increase in rate of inguinal hernias, nor a significant relationship between cryptorchidism and renal function in our population. We did not observe a relationship between unilateral cryptorchidism and homolateral high-grade VUR or decreased renal function.

PROGNOSTIC RENAL & BLADDER STATUS (RBS) GRADING OF POSTERIOR URETHRAL VALVES

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PURPOSE

Young's classification of posterior urethral valves (PUV) has no direct clinical implication. The aims are to report the long-term outcomes based on RBS (renal & bladder status) grading of PUV.

MATERIAL AND METHODS

Details of antenatal/ postnatal ultrasound, voiding cystourethrography (VCUG), nadir creatinine/ bladder recovery at 3-6months post-valve-ablation were retrospectively reviewed. PUV was graded into: PUV0 – suspicious folds/ kinks on VCUG but on cystoscopy no classical PUV; PUV1 –amniotic fluid index (AFI) >41, normal renal parenchyma, classical PUV (obstructing leaflets at verumontanum) on VCUG/ cystoscopy, normal renal function pre/post treatment; PUV2 –AFI 21-40mm, normal renal parenchyma, recoverable renal function (nadir creatinine <1mg/dl) and bladder contour (VCUG); PUV3 – AFI<20mm, echogenic/cystic kidneys, abnormal renal function pre/post treatment (nadir creatinine >1mg/dl), unimproved bladder contour/ reflux/ hydroureteronephrosis post treatment. During the follow-up progression to chronic kidney disease (>CKD3) and valve bladder on urodynamics were recorded.

RESULTS

A total of 254 PUV cases were radiologically diagnosed over a 20-year period (2003-2023). Among PUV0 (n=97) none deteriorated. Among PUV1 (n=68), CKD progression happened in 4 (6.25%) and valve bladder in 3 (4.68%); among PUV2 (n=90), CKD progression happened in 11(12.2%) and valve bladder in 8(8.8%); among PUV3 (n=29), CKD progression happened in 15 (51.7%) and valve bladder in 12(41.3%). Kaplan-Meier survival analysis revealed increasing renal and bladder function deterioration ($p=0.0001$) as the grade progressed.

CONCLUSIONS

Unlike Young's classification, RBS grading of PUV is useful in prognosis and counseling. PUV1/PUV2 with normal/ reversible renal & bladder function have a good prognosis following a prompt intervention. PUV3 has a high-risk of CKD progression despite treatment.

HEALTH- RELATED QUALITY OF LIFE IN CHILDREN WITH POSTERIOR URETHRAL VALVES: A PROSPECTIVE COMPARATIVE ANALYSIS WITH PRENATAL HYDRONEPHROSIS AND HEALTHY CONTROLS.

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PURPOSE

It has been reported that children with PUV have health-related quality of life (HRQoL) scores comparable to normative healthy control psychometric data. Herein, we aimed to compare the HRQoL of PUV to hydronephrosis (HN) patients and healthy controls seen in a community pediatric urology clinic.

MATERIAL AND METHODS

From December 2022-2024, the PedsQL Inventory and family impact module (FIM) were distributed in our PUV, HN, and community-based urology clinics. Higher scores indicate better HRQoL. Children >13 years self-completed and <13y parent proxies were used. PUV patients were compared to HN patients and healthy controls.

RESULTS

284 patients were included (124 PUV, 54 HN, 106 community). PUV patients scored similarly to HN patients and healthy controls in total HRQoL and FIM scores. However, psychosocial scores were significantly lower in PUV patients compared to HN patients (78 ±17 vs. 85 ±11; p=0.038). When stratifying patients by age, we found PUV patients <3 years scored lower in total pediatric QoL, psychosocial domains, and FIM compared to HN patients of the same age. Demographic and social factors had no significant effect on HRQoL outcomes.

Variable	PUV(n=124) Mean (SD)	HN(n=54) Mean(SD)	Community-Clinic(n=106) Mean(SD)	p-value (HN vs.PUV)	p-value (Community-Clinic vs.PUV)	PUV < 3 years (n=34) Mean(SD)	HN<3 years (n=52) Mean(SD)	p-value (HN<3 vs.PUV<3)
PedQL.Total	82.48(13.79)	86.52(10.68)	82.18(13.19)	0.107	0.716	79.86(16.08)	86.54(10.67)	0.040
Ped.Psych Soc	78.42(16.65)	84.66(11.37)	79.20(14.43)	0.038	0.937	76.29(20.94)	84.53(11.46)	0.044
Family Impact	78.01(18.78)	83.12(15.28)	78.60(16.89)	0.120	0.957	72.80(25.70)	84.60(13.15)	0.021

CONCLUSIONS

PUV patients score similarly to controls, but psychosocial domains are negatively impacted. Children <3years with PUV may also be at increased risk of a negative HRQoL impact. These findings underscore the need for targeted psychosocial support, especially for younger children with PUV.

POSTERIOR URETHRAL VALVES: RISK FACTORS FOR PROGRESSION TO END-STAGE RENAL DISEASE (ESRD) AFTER 8 YEARS OF FOLLOW-UP

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PURPOSE

Approximately 15-20% of patients with posterior urethral valves (PUV) progress to ESRD. We conducted a study to identify risk factors (RF) for progression to ESRD and the need for renal replacement therapy (RRT) during follow-up in patients with PUV.

MATERIAL AND METHODS

A case-control study was conducted on patients diagnosed with PUV between 1995 and 2024. Two study groups were created: RRT vs. no-RRT. Clinical, laboratory, and radiological variables were collected. A bivariate analysis and binary logistic regression were performed to identify RFs for RRT requirement.

RESULTS

A total of 145 patients were included, of whom 13.7% (n=20) required RRT. The mean follow-up period was 7.8 years.

Antenatal USS high-risk signs (keyhole sign, urinoma, parenchyman cysts, renal dysplasia, oligoamnios) (p=0.006), vesicoureteral reflux (p=0.018), acute kidney injury at diagnosis (p<0.001), elevated NADIR creatinine (p=0.014), and elevated maximum creatinine level in the first year of life (p<0.001) were significantly more frequent in the RRT group.

Increased creatinine level in the first week of life (OR: 4.422; 95% CI: 1.044-8.724) was the only independent RF for predicting RRT requirement. Delayed diagnosis and urinary tract infections were not predictive factors for final RRT risk.

CONCLUSIONS

Functional renal reserve at birth was the only predictor of ESRD risk in patients with PUV.

EARLY EVIDENCE OF AMELIORATION IN KIDNEY FUNCTION DETERIORATION WITH THE INTRODUCTION OF A PROACTIVE STANDARDIZED CARE FOR PUV PATIENTS: 5-YEAR OUTCOMES FROM A HIGH-VOLUME REFERRAL CENTER

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PURPOSE

In October 2019, a dedicated clinic and care pathway were implemented at our pediatric center. Herein, we present a comparative analysis of 5-year kidney function outcomes.

MATERIAL AND METHODS

Review of our PUV database, focusing on patients <2years. Patients were segregated into before(BPUV) and after(APUV) clinic, capturing serum creatinine(sCr) values(nadir, time to nadir, one year), initial surgical intervention, progression to CKD>3 and KRT. BPUV patients were censored at 1900 days to ensure equivalent follow-up.

RESULTS

There were 132 BPUV and 57 APUV patients, with similar rates of prenatal presentation(Table). More APUV patients underwent primary diversions as their initial surgical intervention(55% vs. 11%; $p<0.01$). APUV patients were significantly younger, had shorter time to nadir sCr and had lower sCr at one year of age. Despite similar baseline PURK scores, 28% of BPUV had CKD>3 vs. 12% APUV ($p=0.02$). In the BPUV group 15 patients (11%) progressed to KRT vs. 2 (3%) ($p=0.10$) APUV at 247 (IQR 1437) vs. 99 days respectively ($p=0.25$).

CONCLUSIONS

Care standardization and proactive management appears to delay progression to CKD. The lower proportion of patients progressing to KRT is clinically significant, with clear evidence of a trend towards less KRT at 5 years. These data are evidence of the favorable impact of proactive management on PUV kidney function outcomes.

	bPUV (n=132)	aPUV (n=57)	p
Age at presentation (days) (IQR)	8 (22)	3 (16)	<0.01
PURK >3	63 (48%)	20 (35%)	0.15
Age at initial surgery (days) (IQR)	16 (30)	10 (18)	0.05
SCr at 1-year (IQR)	31 (12)	24 (10)	<0.01
Time to nadir SCr (days) (IQR)	189 (175)	148 (146)	0.03
SCr at censored follow-up	44 (38)	27 (16)	<0.01
eGFR	93.90 (61)	110.30 (63)	<0.01
High grade hydronephrosis at follow up	52 (39%)	7 (12%)	<0.01
CKD >3	37 (28%)	7 (12%)	0.02
KRT	15 (11%)	2 (3%)	0.25

EARLY CREATININE DYNAMICS IN BOYS WITH POSTERIOR URETHRAL VALVE ARE ASSOCIATED WITH LONG-TERM RENAL FUNCTION

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PURPOSE

Neonatal serum creatinine is closely monitored in boys with PUV, where nadir creatinine is a key prognostic indicator. Creatinine typically declines after urinary decompression; we assessed whether this decay predicts 1-, 3-, and 5-year kidney function.

MATERIAL AND METHODS

We retrospectively identified boys (2002-2024) with PUV at our institution. An exponential decay model, $y = A \cdot e^{(-bx)} + C$, was fit to creatinine from the first 90 days. Patients with poor fits ($R^2 < 0.70$) were excluded. 1-, 3-, and 5-year creatinine values were evaluated as outcome measures. The area-under-the-curve (AUC) was derived from integrating the decay function. We compared predictive performance of model parameters vs nadir creatinine using the c-index.

RESULTS

Ninety-nine patients met the inclusion criteria; median serum creatinine at 1, 3, and 5 years is described in Table 1. On multivariate regression, the horizontal asymptote (C) was associated with 5-year creatinine (OR 3.46, $p < 0.001$); the scaling factor (A) and decay rate (b) were not significant. Nadir creatinine alone was associated with 5-year creatinine (OR 10.66, $p < 0.001$) and showed consistently higher c-indices than AUC in predicting creatinine at 1 year (0.87 vs 0.74), 3 years (0.83 vs 0.80), and 5 years (0.76 vs 0.73).

Table 1: Median serum creatinine and data availability at 1, 3, and 5 years of age.

	1 year	3 years	5 years
Median Serum Creatinine, umol/L (IQR)	30 (25-41)	36 (31-53)	43 (38-64)
Number of Patients with Available Creatinine Data (%)	79 (80)	48 (49)	35 (35)

CONCLUSIONS

Although decay parameters were associated with long-term kidney function in boys with PUV, nadir creatinine was superior in prediction. Study limitations include retrospective design, limited data, and lack of inclusion of further risk factors. This study does contribute that decay parameters may be meaningful for future prediction in this population, while corroborating the importance of nadir creatinine.

CYSTATIN C AND CREATININE TRENDS OVER THE FIRST TWO YEARS OF LIFE IN PATIENTS WITH POSTERIOR URETHRAL VALVES

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PURPOSE

The current best predictor of long-term renal function in boys with posterior urethral valves (PUV) is the nadir creatinine level within the first year of life. The role of cystatin C as a secondary renal marker is not well established. We present pilot data on the trends of creatinine and cystatin C in patients with PUV.

MATERIAL AND METHODS

We identified all patients who underwent valve ablation before 5 months of age at a single pediatric institution. Patients were followed in a multidisciplinary clinic, with at least yearly measurements of creatinine and cystatin C. eGFR was calculated at 12 and 24 months using creatinine alone and combined creatinine and cystatin C (CKiD U25 equations). Descriptive statistics are presented.

RESULTS

Fourteen patients were included. The median age at valve ablation was 12 days (range 3-127) and median age at last follow-up was 3.01 years (range 1.03-6.73). In all but one patient, creatinine nadir occurred before a year of life. While creatinine increased in the first two years after nadir, cystatin C continued to decrease, with a nadir between 16 and 30 months (median 25.1 months). Combined eGFR improved between 12 months and 24 months. Combined eGFR was lower than using creatinine alone.

CONCLUSIONS

Creatinine nadir occurs in the first year, while cystatin C declines through the second year. Combined eGFR may provide a more accurate estimate of renal function. Creatinine alone eGFR may overestimate renal function. Further research is needed to understand the implication for long-term kidney function prognosis.

S30: EXSTROPHY 3

Moderators: Rosa Romero (SP), Rosalia Misseri (USA)

Main Programme on Friday 5, September 2025, 17:15 - 18:00

17:15 - 17:18

S30-1 (OP)

CHRONIC KIDNEY DISEASE IN CLASSIC BLADDER EXSTROPHY FOLLOWING PRIMARY CLOSURE AND THEN ISOLATED BLADDER NECK REPAIR

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PURPOSE

We sought to review our data to evaluate for changes in estimated glomerular filtration rates (eGFR) and chronic kidney disease (CKD) status in pediatric patients with classic bladder exstrophy (CBE) that have previously undergone staged repairs with primary closure followed by isolated bladder neck repair (BNR).

MATERIAL AND METHODS

Medical records of patients with CBE (1986-2020) were retrospectively reviewed and included if had undergone staged repairs without bladder augmentation with creatinine measurements obtained prior to 18 years of age. Schwartz formula was used to calculate eGFRs and CKD status determined by nephrology evaluations. Non-parametric statistical analysis was performed.

RESULTS

Twenty-two children (68% male) underwent primary closure (94% immediate neonatal) followed by BNR at median age of 5.1 years. At median follow-up after BNR of 16 years, 16 (73%) were augmented or diverted primarily for urodynamic deterioration or upper tract changes (81%). Median preoperative eGFR was 104 ml/min/1.73 m² at which time no patients had a CKD diagnosis. Ninety-two percent had a decline in eGFR with median change of -22 ml/min/1.73 m² (p=0.01) observed prior to 18 years of age, corresponding to a -2 ml/min/1.73 m² (p=0.04) annual rate of decline. At this time point, 5 patients (23%) had any CKD diagnosis and 1 (5%) had CKD3+ with median age at diagnosis of 14 years; all followed with a nephrologist.

CONCLUSIONS

Renal outcomes data following exstrophy repairs continue to be sobering, with nearly a 2-point annual decline in eGFR following isolated BNR. More attention to the early surveillance of renal function following exstrophy repair is needed.

LONG-TERM FOLLOW-UP OF RENAL FUNCTION IN PATIENTS WITH BLADDER EXSTROPHY AND IDENTIFICATION OF RISK FACTORS FOR ITS DECLINE.

Yesica QUIROZ MADARRIAGA ¹, Paula IZQUIERDO ², Rocio JIMENEZ ², Erika LLORENS ², Juan Carlos OSORIO ², Monica FURLANO ³ and Anna BUJONS ²

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PURPOSE

The exstrophy-epispadias complex (EEC) is a rare spectrum of genitourinary malformations, with treatment evolving from cystectomies and ureterosigmoidostomies to bladder augmentation and bladder plate reconstruction. The long-term impact of these interventions on renal function remains unclear. This study seeks to identify risk factors for renal function deterioration in EEC patients undergoing lower urinary tract reconstructions.

MATERIAL AND METHODS

A prospective database of 176 EEC patients at our institution was retrospectively analyzed. Patients with incomplete follow-up were excluded. Data on demographics, EEC type, renal malformations, glomerular filtration rate (GFR), lower urinary tract reconstruction, UTIs, VUR, urolithiasis, and renal transplantation were collected. Descriptive statistics, logistic regression, and Cox analysis were performed.

RESULTS

124 patients were included, 58% male. 85.5% were born with bladder exstrophy, 12% had epispadias and 2.5% had cloacal exstrophy. 51.6% of patients had urinary reconstruction using segments of the gastrointestinal tract (GT) (enterocystoplasty, ureterosigmoidostomies, colonic conduit), 33.9% had their native bladder and 14.5% had non-continent reservoirs (NCR) such as ureterostomies or ileal conduits. 44.4% of the patients presented a decrease in GFR in an average of 16.9 years with an average decrease of 22ml/min/1.73 m². In the survival analysis, the median time for deterioration of patients with native bladder, reconstructions with GT and NCR was 36, 27 and 14 years respectively, with a HR of 3.3 (95% CI 1.5-7.03) for NCR, with a statistically significant impact on the decrease in GFR (p 0.0016). Only 6(4.8%) patients required renal transplantation during follow-up.

CONCLUSIONS

The urinary reconstruction in patients with EEC significantly impacts long-term renal function. It is important to maintain rigorous surveillance, particularly in those with NCR as they are the most prone to upper urinary tract deterioration. Multicenter studies with larger cohorts are necessary to identify more reliable prognostic factors in this population.

VAGINOPLASTY IN FEMALE BLADDER EXSTROPHY-EPISPADIAS COMPLEX: AN IN-DEPTH ANALYSIS OF OPERATIVE TECHNIQUE, OUTCOMES, AND COMPLICATIONS AT A HIGH-VOLUME CENTER OF EXCELLENCE

Logan GALANSKY, Andrew GABRIELSON, Joseph CHEAIB, Victoria MAXON, Catherine ROBEY, Chad CRIGGER, John GEARHART and Heather DI CARLO

Johns Hopkins, Urology, Baltimore, USA

PURPOSE

Transitional care for bladder-exstrophy epispadias complex (BEEC) includes genital reconstruction to improve sexual function and cosmesis as patients mature into adulthood. We evaluated our institutional experience with vaginoplasty for female patients with BEEC.

MATERIAL AND METHODS

We conducted a retrospective review of BEEC patients undergoing vaginoplasty from 2000-2024. Post-operative outcomes analyzed included vaginal stenosis requiring re-operation (VS), urinary tract infection (UTI), surgical site infection (SSI), dehiscence, rectal injury, fistula, and pelvic organ prolapse (POP).

RESULTS

We identified 240 female BEEC patients with 54 (22.5%) undergoing vaginoplasty. Median age was 15.6 years old. Median follow-up was 55.2 months. The majority of cases were perineal flap vaginoplasty (88.9%). Nylon suture was most commonly used (46.3%), with PDS used in 22.2% of cases. Post-operative complication rates were VS 14.8%, UTI 3.7%, SSI 7.4%, dehiscence 3.7%, rectal injuries 0%, fistula 0%, and POP 12.9%. The 90-day post-operative complication rate was 20.4% and the lifetime complication rate was 33.3% (Table 1). There was no significant association between reconstruction method and VS ($p=0.2$) or between perineal flap vaginoplasty and any complication outcome (OR 1.87, 95% CI [0.26-13.7], $p=0.5$). PDS use was significantly associated with VS on univariable analysis (OR 4.75, 95% CI [1.02-23.1], $p=0.042$) and multivariable analysis when adjusting for reconstruction method (OR 5.83, 95% CI [1.06-32.3], $p=0.043$) (Table 2).

CONCLUSIONS

We believe this is the largest reported cohort of BEEC patients undergoing vaginoplasty to date. While perineal flap reconstruction can achieve excellent functional and cosmetic outcomes, VS is the most common complication. Use of PDS was associated with VS, suggesting that other suture types may be more advantageous for successful surgical outcomes, but further investigation into the clinical significance of this finding is warranted.

PERCUTANEOUS CYSTOLITHOLAPAXY AND OPEN CYSTOLITHOTOMY IN EXSTROPHY-EPISPADIAS COMPLEX: A COMPARATIVE APPROACH TO BLADDER STONE MANAGEMENT

Jason YANG, David HEAP, Victoria MAXON, Catherine ROBEY, Mahir MARUF, Chloe MICHEL, Heather DI CARLO, John GEARHART and Chad CRIGGER

Johns Hopkins University, Urology, Baltimore, USA

PURPOSE

Exstrophy-epispadias complex (EEC) patients often present with attenuated fascia. Currently, there is no direct comparison of outcomes between percutaneous cystolitholapaxy and open cystolithotomy in this specific patient population. Thus, we sought to evaluate the therapeutic efficacy and associated morbidity of both surgical approaches in EEC patients.

MATERIAL AND METHODS

Patients who underwent either their first percutaneous cystolitholapaxy or open cystolithotomy between 2003-2023 were retrospectively identified using an IRB-approved institutional database. Data were collected on operative times, length of stay, stone-free rates, stone size, recurrence rates, and both intraoperative and postoperative complications.

RESULTS

Among 66 patients, 39 (57.58%) underwent percutaneous cystolitholapaxy, and 27 (42.42%) underwent open cystolithotomy. Median stone sizes were comparable between groups (4.00 vs. 4.50 cm, $p=0.36$). The percutaneous approach resulted in significantly shorter operative times (126.00 vs. 203.00 minutes, $p<0.0001$) and reduced hospital stays (1.00 vs. 3.00 days, $p=0.0003$) relative to the open approach. Notably, both techniques achieved a 100% stone-free rate ($p>0.99$). There were no differences in recurrence ($p=0.11$) and cumulative incidence (HR 0.76, 95% CI 0.39-1.48, $p=0.38$) between groups. Postoperative complications revealed a significantly higher incidence of vesicocutaneous fistulas in the open surgery group, with a rate of 22.22% compared to 0.00% in the percutaneous group ($p=0.0038$).

CONCLUSIONS

Percutaneous cystolitholapaxy provided significant advantages for EEC patients, including shorter operative times and reduced hospital stays, with equivalent stone clearance. Moreover, open cystolithotomy carried a higher risk of vesicocutaneous fistula formation. These findings suggest percutaneous approaches may offer a safer and more efficient alternative for managing bladder stones in EEC patients.

AUGMENTATION CYSTOPLASTY AND CONTINENT CATHETERIZABLE CHANNELS IN THE BLADDER EXSTROPHY-EPISPADIAS COMPLEX: A 20-YEAR EXPERIENCE

Victoria MAXON, Carolyn IM, Catherine ROBEY, Chad CRIGGER, Heather DI CARLO and John GEARHART
Johns Hopkins University, Baltimore, USA

PURPOSE

To determine risk factors for complications after augmentation cystoplasty (AC) with continent catheterizable channel (CCC) in the EEC.

MATERIAL AND METHODS

An IRB approved institutional database of 1515 exstrophy-epispadias patients was reviewed retrospectively. Patients that had primary augmentation performed at our institution between 2003-2023 were included. Gender, race, primary closure outcome, bowel segment choice for augmentation and stoma, preoperative bladder capacity, bladder neck status, age at augmentation, 30- and 90-day complications, number of stomal revisions, and length of longer term follow-ups were reviewed.

RESULTS

157 patients met final inclusion criteria. The patients included 148 (94.3%) classic bladder exstrophy, 6(3.8%) male epispadias and 3(1.9%) female epispadias. The mean age at time of AC was 11.3 years with a median follow up of 6.46 years. There was no significant difference in the length of bowel harvested by the ileum and colon groups ($p=0.0836$) or closure outcome ($p=0.3013$). There was increased usage of Monti stoma in patients with an ileum AC ($p=0.0117$). Closure outcome did not influence the rate of 30- and 90-day complications ($p=0.9607$, $p=0.5085$) or stoma choice ($p=0.7364$). There was no significant difference between the ileum and colon augment groups in terms of 30- and 90-day complications ($p=0.6419$, $p=0.8889$ respectively). Patients with a history of primary successful closure had a shorter hospital stay ($p=0.0042$) but there was no difference in hospital stay between the ileum and colon groups ($p=0.6632$).

CONCLUSIONS

Bowel segment choice for augmentation cystoplasty does not influence the risk for complications in the EEC population. History of a failed primary closure leads to a longer hospital stay after AC, but there is no increased risk for complications.

★ NANTES SINGLE-STAGE CLOSURE WITH KELLY RSTM IN MALE BLADDER EXSTROPHY

Hortense ALLIOT ¹, Sadaf KODWAVWALA ², Thomas LOUBERSAC ¹, Bachir AHMED ², Sajid SULTAN ², Philip RANSLEY ² and Marc-David LECLAIR ³

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PURPOSE

Bladder exstrophy (BE) represents one of the most complex congenital anomalies encountered in pediatric urology. Its management demands a meticulous balance between achieving urinary continence, preserving renal function, and providing an acceptable cosmetic and functional outcome. The surgical approach to BE has evolved significantly over decades, yet the challenges remain profound.

In the late 1970s, Justin Kelly introduced a radical soft-tissue reconstruction technique (RSTM), emphasizing meticulous dissection and reconstruction of pelvic musculature to support urinary continence and anatomical alignment. While widely regarded as a cornerstone in bladder exstrophy management, the technique requires exceptional surgical precision and expertise, limiting its adoption to select centers worldwide.

There has also been a recent worldwide trend toward delayed closure of BE (as opposed to immediate neonatal closure) recognizing the haemodynamic, hormonal, metabolic, and psychologic advantages.

Building on Kelly's foundational principles, our team has developed a novel strategy that incorporates a delayed closure approach in combination with Kelly's RSTM.

MATERIAL AND METHODS

A 10 week-old boy with primary bladder exstrophy underwent a Single-stage reconstruction, combining delayed closure with Kelly RSTM. The technique includes ureters reimplantation, corpora and soft-tissue release from the pelvic bones, and bladder closure, cervicoplasty and urethroplasty, and penile reconstruction.

In this video, we present a step-by-step demonstration of our approach, highlighting key technical modifications with drawings and figures.

RESULTS

The follow-up was uneventful, with normal healing at 21 months postoperatively with no bladder nor abdominal wall dehiscence.

CONCLUSIONS

Combination of Kelly RSTM with the concept of delayed closure represents a new paradigm in BE reconstruction, aiming to optimize bladder growth, enhance tissue compliance, and improve long-term functional outcomes while addressing the limitations of immediate neonatal closure.

S31: LOWER URINARY TRACT RECONSTRUCTION 1

Moderators: Dana Weiss (USA), Raimund Stein (GER)

Parallel Programme on Friday 5, September 2025, 08:00 - 08:45

08:00 - 08:03

S31-1 (OP)

CLINICAL AND MENTAL WELL-BEING INDICES AMONG CHILDREN UNDERGOING SELF-CATHETERIZATION COMPARED TO CHILDREN USING A "MIC-KEY BUTTON"

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BACKGROUND AND PURPOSE

The "Mic-key" button (MB) is an alternative to intermittent catheterization (IC).
The study purpose is to describe complications associated with MB, and to compare quality of life (QOL) with IC.

MATERIAL AND METHODS

We retrospectively collected demographic and clinical data among MB children during 2015-2023, and administered self-report questionnaires relating to QOL of children who performed IC versus MB.

RESULTS

Our MB cohort included 33 children (24 boys), median age of 4.5 years (range 0.4-19), and median MB duration of 24 months (7 days - 90 months). For the mental well-being data, 37 parents were queried: 18 IC and 19 MB. 18 children aged 7-18 years filled out the questionnaires themselves (5 IC, 13 MB). During follow-up, 22 (68%) of the MB group suffered from symptomatic urinary tract infections, with common pathogens being *Pseudomonas* (14, 43%) and *E. coli* (7, 22%). Other complications included cutaneous granulomas (5, 15%), dilation of the opening tract (2, 6%), leaks (2, 6%), and bladder stone formation (2, 6%). Parent reports showed significance in hierarchical regression ($F(7,29)=5.39$, $p<.001$), indicating that as age decreased and difficulty in emptying the bladder lessened, QOL increased. Reports from children showed that QOL of adolescents ($M=61.2$) was significantly worse compared to that of younger children ($M=76.9$; $T(15)=2.2$, $P<.05$).

CONCLUSIONS

MB use was associated with complications, especially urinary tract infections, but QOL was similar to IC. In terms of QOL, adolescents are more adversely affected by bladder-emptying, and thus should be targeted for intervention.

LONG TERM OUTCOME OF CONTINENT CATHETERIZABLE URINARY CHANNEL: A REPORT FROM DEVELOPING COUNTRY

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PURPOSE

The purpose is to evaluate the long-term outcome and complications of continent catheterizable urinary channel in children from a developing country setting with low socioeconomic and educational level.

MATERIAL AND METHODS

Retrospective analysis of medical records of children who underwent CCC between 2002 and 2023. For the analysis children are divided into two groups on the basis of channel type i.e. appendico-vesicostomy or Monti. Data was analyzed on SPSS 20. Kaplan Mayer survival graph was used for long term survival (complications) analysis.

RESULTS

228 channels were formed with mean age at surgery 8.6 \pm 3.4 years. M:F 1.6:1. Diagnoses included Neurogenic bladder-37%, PUV-33% & EEC-19%. Appendix used in 89% and ileal-monti in 19(11%). Stoma was created in right iliac fossa in majority of the cases using VQZ technique. Overall complication rate was 19.5% which were Clevien-Dindo-Grade IIIb. Of them 18/43 required open surgical revision of stoma/channel. No statistically significant differences in complications and surgical revision were noted when comparing appendix and ileal monti ($p=0.76$ and 0.42 respectively) 50 % of all the complications were noted in the first 2 years and 25% after 5 years of follow-up. Difficult catheterization was the most common(17/43). Stoma related complications included stenosis(7) mucosal prolapse(7). Channel related complications included stenosis(8), fistula(4) and incontinence(2). Channel incontinence seen in Monti and channel fistula in appendicovesicostomy. Our survival analysis (Kaplan-Meier) evaluating the whole cohort complication free time was 157 \pm 6 months (95% CI 145-169.6). On a time to event analysis there were no statistically significant differences in complications rate comparing the use of appendix vs Monti ($p=0.32$). The mean follow-up period is 8.5 \pm 4.7 years.

CONCLUSIONS

In a developing country setting with a low socio-economic and educational-level it is possible to successfully perform clean intermittent catheterization using cheap nelaton-catheter through continent catheterizable channel with small complications rate even in the long term.

TAILORED SURGICAL TACTICS IN DEFINITIVE SALVAGE OF LEAKING MITROFANOFF CHANNELS (MC) IN LOW-PRESSURE RESERVOIRS AND BLADDERS

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PURPOSE

Intractable Leakage is a frustrating complication after construction of MC. Even after multiple sessions, unsatisfactory outcomes are often reported with endoscopic injection of bulking agents. Herein, we present diverse surgical tactics envisioned as a definitive solution to this problem, as dictated by the conduit length, girth, trajectory, blood supply, reservoir nature and local tissue conditions, and further optimized by intraoperative testing for leakage and ease of catheterization.

MATERIAL AND METHODS

Twenty-two patients (age range 1.5-15.5 years, median 10.88) with 22 Leaking MC (11 appendix, 8 Monti, 3 tapered ileum, prior 13 failed attempts of endoscopic injection in 9) were operated after assuring patient compliance, reservoir/bladder low-pressure status, and adequate capacity by a catheterization diary and urodynamic testing. Following cystoscopy/mitrofanoffscopy and intraoperative assessment of the conduit-reservoir unit, The anti-reflux tactics culminated in MC reimplantation in the intestinal portion of the reservoir and customized as: simple Shanfield reimplant(3/22), seromuscular trough-enforced Shanfield(9/22), reservoir wrap-enforced Shanfield(7/22) and Y-V advancement with a seromuscular/ detrusor trough in(3/22). Concurrent procedures involved, MC remodeling(1), skin revision/relocation for stomal stenosis (3), and add-on patch augment(1). Success was defined by an easy, non-painful catheterization with leak-proof intervals more than 4 hours and no upper tract deterioration sustained beyond 6 months after the procedure.

RESULTS

Follow-up ranged 0.5-7.5 years(median 2.88,IQR 3.25). Successful outcome was achieved in 19/22 children (86%). Two re-developed leakage (2 and 7 months), while one developed a proximal long stricture (3 months) necessitating take-down of MC in all, and replacement by tapered ileum MC implanted in a serosal-lined trough created partially by an add-on ileal patch eventually reaching dryness in all.

CONCLUSIONS

The diverse tactics employed herein for rescue of leaking MC, strictly customized for each conduit-reservoir unit, were robust and durable in attaining a leak-proof status in most children following a single intervention with significant enhancement of their lifestyle.

TOTAL CHANNEL SUBSTITUTION FOR MANAGEMENT OF A LEAKING APPENDICOVESICOSTOMY CONTINENT CUTANEOUS CATHETERIZABLE CHANNEL (CCCC) IN CHILDREN: A NOVEL TECHNIQUE. A DETAILED STEP BY STEP VIDEO

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PURPOSE

Leaking CCCC is a significant and frustrating complication which may need more than one revisional surgery for management. Moreover, some patients are still incontinent after these surgeries. Total channel substitution is required in case of complete disruption of the continence mechanism. However, treatment options are limited. The aim of this video is to illustrate a new outlet mechanism suitable for correction of incontinence post appendicovesicostomy CCCC in children. Initially it was described for urinary conversion in cases of urethral recurrence following cystectomy and orthotopic urinary diversion for bladder cancer.

MATERIAL AND METHODS

We present a case of 11-year-old boy with diagnosis of neuropathic bladder due to meningomyelocele. At age of 6 years old, He underwent augmentation ileocystoplasty and bladder neck reconstruction with appendicovesicostomy CCCC which was done outside our institution for a complaint of total urinary incontinence. He presented to us with urinary incontinence via the urethra with a leaking CCCC. Pouchogram revealed accepted capacity. The operative decision was bladder neck closure with revision of CCCC. Key surgical steps are described in the video. Bladder neck closure was done through transvesical approach. Total channel substitution was done using spiral monti tube with serous lined extramural tunnel continence mechanism through longitudinal opening of anterior wall of pouch only. A 6 cm. ileal segment was used.

RESULTS

No major complications were recorded. Patient was discharged after 3 days. The pouch was kept drained for 3 weeks before training by intermittent catheter clamping. After one year of follow up, the channel is still continent with normal upper tract sonographically.

CONCLUSIONS

The proposed technique is a feasible option for management of a leaking appendicovesicostomy CCCC in children. It is a simple procedure, time saving and allows using a short ileal segment in this challenging cohort of patients.

★ ENHANCED RECOVERY AFTER SURGERY (ERAS) IN PEDIATRIC UROLOGY PATIENTS UNDERGOING COMPLEX LOWER URINARY TRACT RECONSTRUCTION: A MULTI-CENTER, PROSPECTIVE OBSERVATIONAL STUDY

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PURPOSE

Enhanced recovery after surgery (ERAS®) is a multidisciplinary framework to standardize perioperative care. Pediatric Urology Recovery After Surgery Endeavor (PURSUE) is a multi-center study of ERAS in patients undergoing complex lower urinary tract reconstruction. We hypothesized ERAS in this population would achieve ≥75% compliance while reducing length of stay and opioid use without an increase in complications or other balancing measures.

MATERIAL AND METHODS

From 2017-2022, 8 centers implemented ERAS for pediatric patients undergoing catheterizable channel creation, bladder augmentation, and/or bladder neck procedures. The uniform ERAS protocol contained 20 process measures covering pre-, intra-, and postoperative phases of care. Prospectively enrolled patients were propensity matched to recent historical controls prior to ERAS implementation and outcomes were compared.

RESULTS

153 ERAS patients and 153 historical controls were matched successfully and included with a median age of 10.2 (IQR 7.6–13.7) and 10.4 (IQR 8.0–14.6) years, respectively ($p=0.49$). Median protocol compliance increased from 8 to 16 measures between historical and ERAS cohorts ($p<0.001$). Median length of stay decreased from 8.0 to 5.3 days ($p<0.001$). Postoperative opioid use decreased 74% without an increase in maximum pain scores. Complication rates at the patient level decreased from 72.5% to 60.1% ($p=0.011$) with no differences in 90-day emergency room visits, readmissions, or reoperations.

CONCLUSIONS

ERAS is a highly effective at standardizing perioperative care in pediatric urology patients undergoing complex lower urinary tract reconstruction. ERAS was associated with better outcomes of reduced length of stay, lower postoperative opioid use, and lower complication rates.

08:27 - 08:30

S31-6 (OP)

CLINICAL OUTCOMES OF ROBOTIC VERSUS OPEN CATHETERIZABLE CHANNELS IN A PEDIATRIC POPULATION - A 10 YEAR RESTROSPECTIVE REVIEW

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PURPOSE

Recent literature has demonstrated the feasibility of robotic catheterizable channel creation as it offers reduced morbidity with equivalent clinical outcomes and complication rates compared to traditional open techniques. Our aim was to compare the outcomes of robotic versus open catheterizable channel creation over a 10—year period.

MATERIAL AND METHODS

A retrospective review was completed of all patients with neurogenic bladders who underwent robotic and open catheterizable channel creation from 2014 - 2024. Baseline patient demographics were collected and intra-operative and post-operative outcomes were compared using Fischer's exact and Wilcoxon rank-sum tests.

RESULTS

A total of 189 patients were identified (64 robotic and 125 open), with a median follow-up time of 4.0 years (IQR 1.8-6.8 years). Patients who underwent robotic channel creation were significantly older (9.3 vs 6.1 years, $p=0.0001$) and had lower rates of previous abdominal surgery (29.7% vs 69.6%, $p<0.0001$). Patients who underwent a robotic channel creation had a significantly longer median operative time (340.0 vs 214.5 minutes, $p=0.007$). There was no significant difference in 30-day complication rates (32.8% vs 39.5%, $p=0.37$), or surgical revision rates (28.1% vs 19.2%, $p=0.16$) for robotic versus open channel creation. Patients who received robotic channel creation had significantly lower post-operative narcotic usage (0.4 vs 0.7mg/kg morphine equivalents, $p=0.049$), and shorter hospital stays even when excluding patients who underwent a concurrent augment or Monti creation (5.0 vs 7.0 days, $p=0.015$).

CONCLUSIONS

Robotic catheterizable channel creation is a safe and feasible option compared to the open technique with significantly shorter hospital stays and similar functional outcomes and complication rates.

ORAL MUCOSA INLAY GRAFTS FOR STOMA CHALLENGES: ONE FOR THE TOOLBOX

Tatjana HEISINGER-HEIDLER, Ilna ROSOKLIJA, Theresa MEYER and Elizabeth B. YERKES

Ann & Robert H. Lurie Children's Hospital of Chicago, Pediatric Urology, Chicago, USA

PURPOSE

Stenosis is a common complication of cutaneous, catheterizable channels. Conservative management can address intermittent skin level concerns, but persistent difficulties or discomfort may require revision. When surrounding skin is suboptimal, oral mucosa grafts are a valuable alternative. We aim to describe our experience, postoperative observations and outcomes with this technique.

MATERIAL AND METHODS

A single institution, retrospective case series of patients with suprafascial channel revisions incorporating oral mucosa inlays between 2007 and 2024 was done. Patient and stomal characteristics were reviewed and longitudinal clinical and surgical outcomes were assessed.

RESULTS

We identified 11 patients who received oral mucosa inlay following: Mitrofanoff appendicovesicostomy(5), Monti-Yang ileovesicostomy(3), appendicocostomy(3). 9 were female with a median age of 11.1 years (range 4.6-17.2 years) at the time of surgery. All had stenosis or hooding that limited ease of access to the channel, one patient had a sinus tract from catheter trauma. Stomas were in the right lower quadrant(6), umbilicus(4), and midline incision(1). As experience progressed, we incorporated one or more of the following: deep radial incision through the scar into healthy channel; excision of surrounding scar; mobilization of the suprafascial channel. Postoperatively, a bolster dressing was used for one week and the catheter stayed for 2 more weeks. Patients were told to apply bland ointment and massage the tissue daily. With a median follow-up of 38 months (range 14-193 months) post-grafting, 3 patients (27%) required additional procedures due to persistent catheterization difficulties, while 2 (18%) experienced transient challenges, managed conservatively with stent and steroids. At most recent follow-up, all catheterized without issues.

CONCLUSIONS

In our experience, oral mucosa inlay is a viable option for stoma revision. Autologous grafting of non-keratinized and highly vascularized mucosa is ideal, especially with poor surrounding skin. Full excision of hypertrophic scar, as well as wider grafts and scar excision in the umbilicus may enhance success.

EDUCATIONAL COMMITTEE SESSION - Beyond the Film: The Imaging Revolution in Pediatric Urology

Moderators: Ursula Tonnhofer (AU), Anja Lingnau (GER)

Parallel Programme on Friday 5, September 2025, 09:20 - 10:00

09:20 - 09:30

Does X-ray belong to History?

Dr Sibel Tiryaki (Türkiye)

09:30 - 09:40

Nuclear medicine vs. MRI: Is there a gold standard?

Prof. Anton Staudenherz (Nuclear medicine) and Prof. Janina Patsch (Radiology) (Austria)

09:40 - 09:50

Is AI the future of imaging?

Anne-Françoise Spinoit (Belgium)

09:50 - 10:00

Discussion

S32: LAPAROSCOPY/ROBOTICS

Moderators: Mohan Gundeti (USA), Ciro Esposito (IT)

Parallel Programme on Friday 5, September 2025, 10:00 - 10:40

10:00 - 10:03

S32-1 (OP)

OUTCOMES OF ADJUSTING AIRSEAL® INSUFFLATION PRESSURES IN PEDIATRIC UROLOGIC ROBOT-ASSISTED LAPAROSCOPIC SURGERY

Sydney DELOR ¹, Nicole RONCZKOWSKI ¹, Bradley MORGANSTERN ² and Bruce RAMSHAW ³

1) Medical College of Georgia at Augusta University, Augusta, USA - 2) Children's Hospital of Georgia, Pediatric Urology, Augusta, USA - 3) Caresyntax, Larkspur, USA

PURPOSE

The AirSeal® Continuous Pressure Insufflator is designed to maintain stable intraperitoneal pressure and enhance visualization during laparoscopic surgery, potentially minimizing operative complications. We previously demonstrated AirSeal's safety in pediatric urologic surgery for patients under 20 kg. It is thought that lower insufflation pressures may reduce perioperative pain, leading us to hypothesize that they would result in less variability in perioperative vital signs. Here, we investigate AirSeal outcomes at lower insufflation pressures, comparing 12 mmHg and 8 mmHg.

MATERIAL AND METHODS

This mixed retrospective and prospective study analyzed robot-assisted laparoscopic pyeloplasty cases performed at 12 mmHg (2018 to 2021, n equals 24) and 8 mmHg (2021 to 2024, n equals 29). Pre-, intra-, and post-operative variables, including vitals, pain management, length of stay, and complications, were assessed using Student's t-tests or Mann-Whitney U analyses as appropriate.

RESULTS

The 8 mmHg group had a shorter length of stay and lower complication rates and severity, though these differences were not statistically significant (p equals 0.45). Significant intraoperative differences were observed in diastolic blood pressure, peak airway pressure minimum and variability, and heart rate maximum and variability (p less than 0.05). Importantly, no complications were reported due to AirSeal use in either group.

CONCLUSIONS

Our findings suggest AirSeal may be beneficial in cases favoring lower insufflation pressures, especially in smaller patients. While intraoperative differences were observed, their clinical significance remains unclear. Our work is ongoing to further evaluate AirSeal's safety and efficacy in pediatric urology and assess the impact of intraoperative parameter adjustments.

ROLE OF SURGICAL SIMULATION IN IMPROVING EFFICIENCY OF URETERAL STENT INSERTION DURING PEDIATRIC ROBOTIC-ASSISTED PYELOPLASTY

Lauren PONIATOWSKI, Courtney WEYAND and Nicolas FERNANDEZ

Seattle Children's Hospital, Pediatric Urology, Seattle, USA

PURPOSE

Pediatric robotic-assisted pyeloplasty is a frequently performed procedure that requires teamwork across operating room roles. The intraoperative bedside ureteral stent insertion step was identified as requiring high-level coordination of skillsets between the console surgeon, bedside assistant, surgical technologist and circulating nurse. The objectives were to design a workflow for developing a surgical simulation intervention based on a clinical goal and evaluate the effect of utilization of surgical simulation on time for ureteral stent insertion in the clinical setting.

MATERIAL AND METHODS

The simulation session utilized team-based simulation training elements of facilitator-guided, post-event structure with addition of within-team brainstorming and problem solving. During the simulation intervention, the procedural approach was refined at each iteration. Time for completion of the ureteral stent insertion step in the clinical setting was evaluated pre and post-simulation intervention.

RESULTS

Procedural changes created as a result of the surgical simulation included an objective guide for amount of wire inserted, clarification of the roles of the bedside assistant and surgical technologist, guidance on concomitant completion of procedural steps in each role, reference chart for stent length for circulating nurse and surgical warm-up video for team review preop. The average time for stent insertion decreased from 14 minutes pre-simulation to 8 minutes post-simulation (not statistically significant).

CONCLUSIONS

Surgical simulation utilizing a simulation workflow and novel debrief structure incorporating team-based problem solving allows for procedural improvements. When applied to the ureteral stent insertion step of pediatric robotic-assisted pyeloplasty, there were trends toward increased OR efficiency.

DEMONSTRATING THE SAFETY AND EFFICACY OF THE VERSIUS ROBOTIC SYSTEM IN PAEDIATRIC UROLOGY- INITIAL FINDINGS FROM A MULTICENTRE STUDY AND QUANTIFYING LEARNING CURVE

David FAWKNER-CORBETT ¹, Stephen GRIFFIN ¹, David KEENE ², Pankaj MISHRA ³, Tamas CSERNI ², Massimo GARRIBOLI ³, Sharon MOHAN KUNNATH ³, Ionica STOICA ³ and Ewan BROWNLEE ¹

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PURPOSE

Versius surgical robotic system(CMR Surgical) requires smaller incisions with a modular, fully wristed design. Evidence of its efficacy in children is required.

We report initial safety and efficacy of this system in a range of paediatric urological procedures alongside quantification of a learning curve.

MATERIAL AND METHODS

As part of an ongoing prospective, multi-centre, multi-surgeon safety and efficacy study of the Versius system (CA-00533/NCT06539442), this is an interim analysis of cases performed, case mix, demographics, and complications. Post operative outcomes were recorded alongside operative times to quantify the learning curve for this system.

RESULTS

To date,52 procedures have been successfully performed using the Versius system (7months, 3 centres, 6 paediatric urologists). Cases included pyeloplasty (n=34, 2 redo), ureteric reimplantation(n=7), excision of urachus(n=4), nephrectomy/nephroureterectomy(n=3), mitrofanoff (n=2) and ileal conduit(n=2). Median age was 10 years (range 3mn-17.2yr). There have been no safety issues with the device. There have been two conversions due to patient anatomy (one to laparoscopic, one to open).

With regards to pyeloplasty, median length of stay was 2 days (range 1-8, LOS 1day n=17). Across all centres median total operative time was 194 minutes (range 115-379). Operative time for pyeloplasty showed a reduced trend that approached significance comparing early months with later months (197(Standard deviation[SD] 68)minutes month 1-2, vs 178(SD 57)minutes months 4-7, p=0.068).

CONCLUSIONS

First experience with the Versius robot in paediatric urology has demonstrated it to be safe and effective across multiple centres. The average learning curve appears to be 8 cases when adapting to this approach.

CLINICAL OUTCOMES OF LAPAROSCOPIC TRANSCUTANEOUS EXTRAPERITONEAL REPAIR OF PEDIATRIC HYDROCELE: A 10 YEARS OF EXPERIENCE

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1) Keimyung university school of medicine, Dongsan Hospital, Urology, Daegu, REPUBLIC OF KOREA - 2) Samsung Medical Center, Sungkyunkwan University School of Medicine,, Department of Urology, Seoul, REPUBLIC OF KOREA

PURPOSE

This study presents a modified technique for laparoscopic transcutaneous extraperitoneal (LTE) repair of pediatric hydrocele, alongside an analysis of clinical outcomes over ten years of experience.

MATERIAL AND METHODS

A prospective, single-arm cohort study was initiated in June 2014. Pediatric patients with hydrocele underwent LTE repair utilizing a J-shaped bent needle at our institution from June 2014 to May 2024. The procedure involved the insertion of a 30° laparoscope through a 3-mm umbilical incision to explore the patency of the processus vaginalis. The patent processus vaginalis was then closed extraperitoneally using two J-shaped bent needles (18 and 20 gauge spinal needles) with a 3-0 polyester suture.

RESULTS

Over the ten-year study period, 428 patients with 509 hydroceles underwent LTE repair. Of these, 386 patients with 459 hydroceles, all with at least one year of follow-up, were included in the analysis. The mean age of the patients was 30.4 months (range: 19-105 months), and the mean follow-up duration was 29 months (12-52 months). The overall success rate was 99.1% (455/459 hydroceles). Most patients exhibited an open internal inguinal ring, categorized as slit-like, small, or widely open. Six patients had a closed internal inguinal ring.

Most of patients underwent high ligation alone, while a subset had scrotal aspiration; the success rates between these groups were same. The four cases of recurrence occurred early in the study and were associated with procedures performed without an inguinal incision. Subsequent modifications, including a small 2-mm incision and deep placement of the tie knot, eliminated recurrence.

CONCLUSIONS

The LTE repair technique is safe and effective for the management of pediatric hydrocele. The use of laparoscopy is critical for the accurate diagnosis and treatment of pediatric hydrocele, ensuring high success rates and low recurrence.

COMPARISON OF SAME DAY DISCHARGE VERSUS INPATIENT HOSPITALIZATION AFTER UPPER URINARY TRACT ROBOTIC RECONSTRUCTION IN PEDIATRIC UROLOGY

Veerain GUPTA ¹, Brendan FRAINEY ², Megan STOUT ², Lauren CORONA ², Douglass CLAYTON ², John THOMAS ² and Cyrus ADAMS ²
1) Vanderbilt University, Department of Urology, Nashville, USA - 2) Vanderbilt University, Department of Pediatric Urology, Nashville, USA

PURPOSE

Same-day discharge (SDD) following robotic-assisted urologic procedures is increasing. However, no studies have compared outcomes for SDD and inpatient (IP) robotic-assisted operations in pediatric patients. This study aims to compare clinical outcomes between SDD and IP for robotic-assisted laparoscopic pyeloplasty (RALP) and ureteroureterostomy (RUU) in children.

MATERIAL AND METHODS

We reviewed patients who underwent RALP and RUU at our pediatric hospital from 2018 to 2024. We compared 30-day Clavien-Dindo complications, hospital readmissions, unplanned phone calls and ED/clinic visits, length of stay (LOS), opioid utilization and re-interventions in SDD and IP.

RESULTS

A total of 164 patients were included (30 SDD, 134 IP) with 146 (89%) RALP and 18 (11%) RUU. Median LOS was 461 minutes for SDD and 1787 minutes for IP (p <0.001). Median follow up was 142 days for SDD and 402 days for IP (p <0.001). Preoperative patient characteristics were not statistically different. There were no significant differences in post-operative phone calls, unplanned visits, complications, readmissions, or re-interventions (Table 1). In both groups, all complications with Clavien-Dindo grade 1-2. Inpatient opioid use was lower in SDD (40% vs 62%, p=0.028), however discharge opioid prescription rates were similar (67% SDD vs 60% IP, p=0.567).

	IP (n=134)	SDD (n=30)	p-value
Length of stay, minutes (median (IQR))	1787(1599, 1956)	461(393, 499)	<0.001
30-day complications (n,%)	23 (17.2%)	5 (16.7%)	0.948
30-day readmissions (n,%)	10 (7.5%)	2 (6.7%)	0.880
Post-operative phone calls (n,%)	68 (50.7%)	15 (50%)	0.941
Unplanned ED/Clinic visits (n,%)	26 (19.4%)	5 (16.7%)	0.729
Inpatient opioid use (n,%)	83 (61.9%)	12 (40%)	0.028
Re-interventions (n,%)	3 (2.2%)	1 (3.3%)	0.725

CONCLUSIONS

SDD following RALP and RUU demonstrates comparable outcomes to IP management with reduced inpatient opioid use. SDD should be considered for pediatric patients undergoing RALP or RUU. Long-term outcome follow-up is necessary.

TAPERED URETERAL REIMPLANTATION IN CHILDREN: ROBOT-ASSISTED LAPAROSCOPIC COMPARED TO OPEN APPROACH

Jamie MICHAEL ¹, Edward GONG ², Ashley TALTON ², Rachel SHANNON ², Ilina ROSOKLIJA ², Emilie JOHNSON ² and Bruce LINDGREN ²

1) Northwestern Medicine, Urology, Chicago, USA - 2) Ann & Robert H Lurie Children's Hospital of Chicago, Pediatric Urology, Chicago, USA

PURPOSE

Evidence increasingly supports robot-assisted laparoscopic (RAL) techniques in complex urologic reconstruction. Our study compares outcomes of children who underwent RAL tapered ureteral reimplantation with those who had open repair at a freestanding pediatric hospital.

MATERIAL AND METHODS

We conducted a retrospective cohort study of children who underwent RAL or open tapered ureteral reimplantation between 2011-2023. We assessed complications, radiographic improvement (decrease in hydronephrosis or resolution of reflux), and reoperation rates. Statistical analysis included chi-square/Fisher's exact for categorical variables and Mann-Whitney U for continuous variables.

RESULTS

Of 79 patients identified, 44 underwent RAL and 35 underwent open tapered reimplantation. The RAL group was older (1.95 vs. 1.26 years, $p=0.008$) and more male-dominant (80% vs. 66%, $p=0.20$). Indications for surgery were similar: 64% of the RAL cohort and 51% of the open cohort underwent surgery for obstruction, and 34% of the RAL group and 49% of the open group for vesicoureteral reflux. RAL procedures had longer operative times (median 285 vs. 218 minutes, $p<0.001$), but lower blood loss ($p=0.007$) and opioid use ($p=0.014$). No significant differences were found in complications or reoperation rates. Radiographic improvement in obstruction was significantly higher in the RAL group (100% vs. 81.3%, $p=0.049$), though no significant difference was observed in reflux.

CONCLUSIONS

RAL tapered ureteral reimplantation is a safe and effective alternative to open surgery in children. While RAL procedures had longer operative times, they were associated with reduced blood loss and opioid use. RAL also showed better radiographic improvement for obstruction, making it a viable approach for pediatric urologic reconstruction.

S33: NEUROGENIC BLADDER 1

Moderators: Simona Gerocarni Nappo (IT), Scott Wang (USA)

Parallel Programme on Friday 5, September 2025, 15:00 - 15:45

15:00 - 15:03

S33-1 (OP)

QUALITY OF LIFE IMPROVES WITH IMPROVED CONTINENCE IN PEOPLE WITH SPINA BIFIDA

Konrad SZYMANSKI¹, Renee SHAVNORE², Joshua ROTH², Benjamin WHITTAM², Pankaj DANGLE², Shelly KING², Kirstan MELDRUM², Martin KEAFER², Mark CAIN², Richard RINK² and Rosalia MISSERI²

1) Riley Children's Health at IU Health, Pediatric Urology, Indianapolis, USA - 2) Riley Children's Health at IU Health, Indianapolis, USA

PURPOSE

No prospective studies have demonstrated that improved continence among people with spina bifid (SB) improves health-related quality of life (HRQOL). We aimed to determine if changes in urinary or bowel incontinence (UI, BI) correlate with HRQOL changes among people with SB.

MATERIAL AND METHODS

Children (8-17 years old) and adults with SB completed clinic questionnaires at routine appointments 3-24 months apart at our center (2018-2024). HRQOL questionnaire: QUALAS (lowest HRQOL: 0, highest: 100). Non-parametric tests and mixed effects linear regression were used.

RESULTS

135 individuals (52% female, 81% shunted) participated at 23.8 years old (median) during 259 follow-up intervals. Initially, 74% reported UI, 38% reported BI (median baseline HRQOL: 80). At median 12 months, 14% developed new incontinence (5% UI, 10% BI), 21% reported incontinence resolution (11% UI, 13% BI).

HRQOL improved with resolution of either UI or BI (+10, median), worsened after new UI or BI developed (-11) and did not change when incontinence persisted (0, $p=0.0001$). When baseline HRQOL was 0-84, 81% of individuals reported ≥ 10 -point HRQOL improvements after incontinence resolution, versus 37% when it persisted (absolute difference: 44%, $p<0.001$, number needed to treat: [NNT] 3). At baseline HRQOL 85-100, NNT was 12.

Both resolved UI and BI were independently associated with improved HRQOL (+9.3 and +10.3, $p\leq 0.004$), new UI and BI with worsened HRQOL (-10.0 and -9.8, $p\leq 0.03$). Sex, shunt, ambulatory status, age, catheterizing independently, follow-up length and treatments were not associated with additional HRQOL changes ($p\geq 0.16$).

CONCLUSIONS

We present the first evidence that continence changes correspond to HRQOL changes among children and adults with SB. Greater improvement occurs in those with lower baseline HRQOL, which includes bothersome incontinence.

PSYCHOMETRIC EVALUATION OF SEXUAL KNOWLEDGE AND SELF-EFFICACY COMPONENTS OF THE SPARKS SURVEY FOR ADULTS WITH SPINA BIFIDA

Betsy HOPSON ¹, Donald LEIN ², Jeffrey BLOUNT ², Brandon ROCQUE ², Nataliya IVANKOVA ², Courtney STREUR ³ and Carmen TONG ²

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PURPOSE

Challenges in accessing comprehensive sexual and reproductive health (SRH) information and care leave many individuals with spina bifida (SB) vulnerable to unmet SRH needs, risking unfulfilling sexual experiences and increasing susceptibility to coercion and abuse. Accurate tools are essential to measure SRH knowledge and self-efficacy in adults with SB. This study evaluates the internal consistency and construct validity of parts of a newly validated SRH survey assessing SRH knowledge and self-efficacy in partner and provider discussions.

MATERIAL AND METHODS

The SRH survey, recently validated for content, was distributed via REDCap with support from the National Spina Bifida Association (SBA) on social media, including SBA's Facebook and Adult Advisory Committee. Responses were de-identified, and each participant received a unique survey ID. Internal consistency was assessed using Cronbach's alpha, and exploratory factor analysis (EFA) examined scale structures. Statistical analyses were conducted in SPSS.

RESULTS

Seventy-nine participants completed the SRH survey. Most respondents were female (76.0%). Participants' ages ranged from 19 to 77 years (mean = 40.62, SD = 12.884) and 87.3% identified as non-Hispanic, White. Both the self-efficacy scale for partner discussions ($\alpha = 0.912$, 5 items) and provider communication ($\alpha = 0.958$, 8 items) had excellent internal consistency. EFA supported construct validity, with a single-factor structure explaining 75.1% of variance for partner communication and 78.0% for provider communication, indicating that each set of items measures a cohesive underlying construct of self-efficacy within its respective communication domain. Cronbach showed low consistency ($\alpha = 0.444$, 11 items) and exhibited low response variability of the SRH knowledge questions

CONCLUSIONS

This study demonstrates strong internal consistency and validity for SRH self-efficacy scales in partner and provider communication among adults with SB. Limited variability in SRH knowledge responses suggests high baseline knowledge, indicating a possible need to refine knowledge assessment for broader applicability.

INCREASED SURGICAL CARE UTILIZATION IN INDIVIDUALS WITH SPINA BIFIDA COMPARED TO CONTROLS IN CALIFORNIA: A POPULATION-BASED ASSESSMENT FROM 2005-2017

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PURPOSE

To evaluate surgical care utilization among individuals with Spina Bifida (SB) compared to the general population and identify factors associated with surgical care utilization.

MATERIAL AND METHODS

Using California's Department of Health Care Access and Information database, individuals with SB were identified and matched 1:5 by birth year to controls. All inpatient and ambulatory surgical encounters from 2005-2017 were analyzed. Primary outcomes included the mean number of surgeries per individual, identified by CPT-4 and ICD-9/10 codes and categorized by organ system. Secondary outcomes included surgical-related length of stay and total charges. Multivariable logistic regression assessed factors associated with ≥ 2 surgeries.

RESULTS

SB individuals underwent more surgeries than controls (4.5 vs. 2.2, $p < 0.001$), with higher incidence of multi-organ system surgeries (58.3% vs. 25.1%, $p < 0.001$). Rates of neurological (11.3% vs. 3.6%) and genitourinary surgeries (6.8% vs. 2.8%) were higher, but gastrointestinal (11.7% vs. 16.9%) and obstetrical/gynecological surgeries (5.2% vs. 17.7%) were lower. SB individuals had longer surgical-related hospital stays (23.3 vs. 7.2 days, $p < 0.001$) and higher average charges (\$290,000 vs. \$98,000, $p < 0.001$). SB was associated with over a threefold increased likelihood of ≥ 2 surgeries (aOR 3.16, 95% CI 3.04-3.29). Female sex (aOR 1.55, 95% CI 1.45-1.66), mixed ethnicity (aOR 2.80, 95% CI 2.39-3.27), and higher comorbidity (aOR 1.36, 95% CI 1.33-1.39) increased the likelihood of ≥ 2 surgeries, while Black race (aOR 0.85, 95% CI 0.74-0.99), non-private insurance (aOR 0.89, 95% CI 0.82-0.97), and lower socioeconomic status (aOR 0.87, 95% CI 0.81-0.94) decreased the likelihood of ≥ 2 surgeries.

CONCLUSIONS

SB individuals undergo more frequent and complex surgeries than the general population, with longer hospital stays and higher costs. Multiple sociodemographic factors influence surgical care utilization, highlighting the need for enhanced access to surgical resources.

COMPARISON OF RENAL FUNCTION PRESERVATION IN SPINA BIFIDA: AUGMENTATION CYSTOPLASTY VERSUS BOTULINUM TOXIN INJECTION

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Cincinnati Children's Hospital Medical Center, Pediatric Urology, Cincinnati, USA

PURPOSE

Augmentation cystoplasty has been utilized for many years in children with neurogenic bladder to preserve renal function in the setting of a hostile bladder. While its use continues, in recent decades, the utilization of bladder botulinum toxin injection (BTI) has increased in this same population; however, a comparison of renal function preservation has not been done. In this study we aim to compare GFR preservation in patients who underwent augmentation cystoplasty versus BTI.

MATERIAL AND METHODS

Pediatric patients with spina bifida were retrospectively identified between 2011 and 2023 from time of augmentation cystoplasty or BTI at a single institution. Baseline characteristics of these two study groups, augmentation cystoplasty versus BTI, were compared. The primary outcome was a Kaplan-Meier analysis of CKD progression compared between the two groups with GFR calculated by the cystatin-C CKiD U25 formula.

RESULTS

The final cohort was 57 patients, 26 who had undergone augmentation cystoplasty and 31 who had undergone BTI. Median follow up time overall was 7.0 years (IQR 4.6-8.8 years). Patients in the BTI group were older at time of index surgery 12.1 years (IQR 8.6-14.3 years) vs 8.7 years (IQR 6.5-10.7 years); $p=0.01$, and preoperatively were more likely to have neurogenic detrusor overactivity on urodynamics, 61% vs 31%; $p=0.03$. Progression of CKD stage was observed in both groups, $n=8$ for augmentation cystoplasty and $n=12$ for BTI. This was not statistically significant by log-rank test; $p=0.25$.

CONCLUSIONS

There was no difference in progression of CKD between patients with spina bifida who underwent augmentation cystoplasty or BTI.

15:19 - 15:26

Discussion

CLINICAL EXPERIENCE WITH MIRABEGRON IN PEDIATRIC PATIENTS WITH SPINA BIFIDA UNDER 3 YEARS OF AGE

Ioana FUGARU, Brian VANDERBRINK, Katie MUELLER, Andrew STRINE and Michael DAUGHERTY
Cincinnati Children's Hospital, Department of Urology, Cincinnati, USA

PURPOSE

Mirabegron suspension, a beta-3 agonist [B3], has been approved in the United States of America for use in pediatric patients older than 3 years old in 2021. We sought to evaluate the safety, tolerability and impact on urodynamic studies of the introduction of B3 in the management of neurogenic bladder for children younger than 3 years old with spina bifida.

MATERIAL AND METHODS

A retrospective study was performed at our institution with spina bifida patients younger than 3 years old treated with off label use of B3. Patients were seen for the first outpatient urological visit at 3 months of age, and subsequently underwent clinical and urologic evaluation at various timepoints. Patient demographics, clinical information and investigation results were extracted from the medical record.

RESULTS

18 patients received B3 at a median age of 24 months (min: 10; max: 33 months). Three patients were primarily treated with B3, 10 patients were switched to B3 due to intolerable side effects of antimuscarinics [AM] (AM to B3) and 5 patients received it as adjunct therapy (B3+AM). In the group AM to B3, 7/10 (70%) of patients maintained stable compliance after switching to B3, and 1 (10%) patient had improved bladder compliance. After switching to B3, all ten AM to B3 patients had preserved bladder capacity. Two patients experienced return of detrusor overactivity after discontinuation of AM while only on B3. There were no side effects reported by families after initiation of B3 in our cohort.

CONCLUSIONS

Spina bifida patients with neurogenic bladder younger than 3 years old may benefit from additional therapy with beta-3 agonist, particularly those experiencing intolerable side effects from antimuscarinics.

PEDIATRIC PATIENTS WITH NEUROGENIC BLADDERS TOLERATE AWAKE INTRAVESICAL BOTULINUM TOXIN INJECTION IN THE CLINIC

Katemanee BURAPACHAISRI ¹, Alex JANG ², Debbie GOLDBERG ³ and Hillary COPP ²

1) *University of California, San Francisco, School of Medicine, San Francisco, USA* - 2) *UNIVERSITY OF CALIFORNIA, SAN FRANCISCO, Urology, San Francisco, USA* - 3) *UNIVERSITY OF CALIFORNIA, SAN FRANCISCO, Epidemiology and Biostatistics, San Francisco, USA*

PURPOSE

Minimal data exists regarding awake cystoscopic injection of botulinum neurotoxin (BoNT) in pediatric patients with neurogenic bladders. We assess the tolerability of awake bladder BoNT injections in children with neurogenic bladders in a pediatric clinic.

MATERIAL AND METHODS

Retrospective chart review was conducted from 01/01/2018 to 09/16/2024 for all pediatric patients with neurogenic bladders who received awake bladder BoNT injections in a freestanding pediatric clinic. Baseline characteristics, procedural details, patients' tolerability, and subsequent awake injections were collected.

RESULTS

We identified 42 patients (21 male, 21 female, 4-24 years old) and a total of 153 awake bladder BoNT injection encounters. The median age at first awake injection was 10.5 (IQR 7.1), with the youngest at 2-years-old. Twelve patients had cognitive delay and 7 had behavioral or mental health conditions. Thirty-six patients (86%) tolerated their first awake injection well. Of these patients, 26 (72%) had subsequent awake injections. The median time between injections was 4.9 months (minimum 3.1, maximum 17). The median number of awake injections per patient was 3 injections (minimum 1, maximum 13). Those who tolerated their first awake injection well but did not have subsequent injections were because they lacked therapeutic response (4), underwent or are awaiting urinary diversion (3), were lost to follow up (2), or died due to unrelated causes (1). Six patients (14%) poorly tolerated their first awake injection due to anxiety or pain and did not have further awake injections.

CONCLUSIONS

Pediatric patients with neurogenic bladders can tolerate awake bladder BoNT injection in the pediatric clinic from a young age.

IMPACT OF ANORECTAL MALFORMATIONS ON LOWER URINARY TRACT FUNCTION: A RETROSPECTIVE STUDY

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PURPOSE

Traditionally, patients with high anorectal malformations are considered to have a worse associated urological functional prognosis and are actively managed in pediatric urology units. This study aimed to evaluate lower urinary tract (LUT) function in patients with ARM.

MATERIAL AND METHODS

We conducted a retrospective cohort study of ARM patients followed by the Multidisciplinary URIMAR clinic (Pediatric Colorectal and Urology) from 2017 to 2024. Demographic and clinical data, as well as current bladder function, were collected from medical records. Patients with cloacal malformations were excluded.

Patients were divided into groups according to the presence of dysraphism and ARM height. Bivariate analyses were performed using LUT symptom variables (DVISS), urodynamic tests (both invasive and non-invasive), and treatment requirements.

RESULTS

Out of 108 children with ARM followed at our centre, 72 (66.7%) were assessed in the URIMAR clinic: 23 high, 18 medium, 14 low, 3 unknown height, and 14 with cloacal malformations. No significant differences were found among the study groups regarding the prevalence of LUT symptoms, urodynamic abnormalities, or treatment requirements (Table 1).

Table 1.

	Dysraphism(15)	Non -dysraphism(23)	p (X2)
AbnormalDVISS			0,552
Yes	46,7% (7)	56,5% (13)	
No	53,3% (8)	43,5% (10)	
Urodynamicabnormalities			0,616
Yes	69,2% (9)	60,9% (14)	
No	30,8% (4)	39,1% (9)	
Need for pharmacological treatment			0,069
Yes			
No	33,3% (5)	10,7% (3)	
	66,7% (10)	89,3% (25)	

	Low ARM	IntermediateARM	High ARM	p (X2)
AbnormalDVISS				0,392
Yes	30,8% (4)	44,4% (8)	55% (11)	
No	69,2% (9)	55,6% (10)	45% (9)	
Urodynamicabnormalities				0,501
Yes		64,7% (11)	75% (15)	
No	54,5% (6) 45,5% (5)	35,3% (5)	25% (5)	
Need for pharmacological treatment				0,512
Yes	7,1% (1)	22,2% (4)	17,4% (4)	
No	92,9% (13)	77,8% (14)	82,6% (19)	

CONCLUSIONS

All patients with ARM are at risk of lower urinary tract dysfunction. Therefore, urological follow-up is required regardless of the type of malformation or associated spinal anomalies.

15:37 - 15:45

Discussion

S34: STONES 2

Moderators: Sherry Ross (USA), Sherjeel Saulat (PAK)

Parallel Programme on Friday 5, September 2025, 16:15 - 17:05

16:15 - 16:18

S34-1 (OP)

CLINICAL FEATURES OF UROLITHIASIS PATIENTS WITH SLC25A5 MUTATION

Youquan ZHAO and Jun LI

Beijing friendship hospital, Capital medical university, Urology, Beijing, CHINA

PURPOSE

This study aims to investigate the association between the SLC25A5 gene and the development of urolithiasis in the population.

MATERIAL AND METHODS

The study employed a cohort design, with patients divided into two groups: urolithiasis group and healthy control group. Whole exome sequencing (WES) was used to obtain all exonic sequence information, including SLC25A5 gene. Several mutation function prediction tools were used to identify possible pathogenic mutation sites in SLC25A5. The study used the propensity score matching method to compare clinical data differences between patients carrying potential pathogenic sites of SLC25A5 without known pathogenic genes and healthy subjects not carrying SLC25A5 hotspot mutations and known gene mutations, to investigate changes in clinical characteristics.

RESULTS

A total of 319 patients were enrolled in the study, comprising of 211 patients with stone groups and 108 patients in the healthy control group. Single nucleotide polymorphisms (SNPs) and insertion/deletion (INDELs) mutations at specific sites on the X chromosome of the SLC25A5 gene were identified by WES. A total of four mutation sites specific to patients with stones were identified, all of which were SNPs. These were SLC25A5:uc004erh.4:exon2:c.G597T:p.K199、SLC25A5:uc004erh.4:exon3:c.G707C:p.R236P、SLC25A5:uc004erh.4:exon4:c.T845C:p.M282T and SLC25A5:uc004erh.4:exon4:c.G846A:p.M282I. Among the mutated sites, SLC25A5:uc004erh.4:exon3:c.G707C:p.R236P was identified as a highly probable pathogenic mutation site with a high frequency of 3.79%. Furthermore, we studied the clinical characteristics of children carrying these mutations and found their correlation with urinary metabolism, stone composition and clinical features.

CONCLUSIONS

The mutation site SLC25A5:uc004erh.4:exon3:c.G707C:p.R236P is a potential pathogenic mutation in the SLC25A5 gene. It may be a hotspot mutation in the Chinese population, but its specific mechanism requires further verification.

KIDNEY STONE PREVALENCE IN LYSOSOMAL STORAGE DISEASES: A RETROSPECTIVE STUDY HIGHLIGHTING ADULT-ONSET PREDISPOSITION

Busra ACUN ¹, Ebru CANDAN ², Sibel TIRYAKI ³, Ali TEKIN ³ and İbrahim ULMAN ³

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3) Ege university, Pediatric urology, Izmir, TÜRKİYE

PURPOSE

Lysosomal storage diseases (LSDs) result from the accumulation of specific compounds in lysosomes, due to lysosomal hydrolase deficiencies. While renal dysfunction is known to occur in LSDs, their role in stone formation has not been clearly established. Metabolic abnormalities associated with these conditions are likely to predispose individuals to stone formation. Despite this, the prevalence of urolithiasis in this unique patient population remains underreported. This study aimed to evaluate the frequency of kidney stones in patients with LSDs.

MATERIAL AND METHODS

A retrospective review of patients with confirmed LSDs who were followed up at our institution was conducted. Clinical records, imaging results, and metabolic evaluations were analyzed to identify cases of urolithiasis. Data on age, gender, type of LSD, presence of stones, and treatment history were collected and assessed.

RESULTS

A total of 405 patients were followed with a diagnosis of LSDs. Kidney stones were identified in 11 (2.7%). Among these, six patients had Gaucher disease (9%), four had Fabry disease (10%), one had MPS-2 (5%), and one had MPS-4 (3%). Looking at the age of first detection, all patients had their first kidney stone diagnosed in adult age. The average age of patients diagnosed with kidney stones was found to be 32 years old. None of the patients with kidney stones required surgical treatment.

CONCLUSIONS

Our findings suggest that the prevalence of kidney stones in patients with LSDs seems to be slightly higher than in the general population. But it also shows that stone formation in LSDs predominantly occur later in life and remain insignificant, underscoring the importance of increased awareness among adult healthcare providers.

HYPOCITRATURIA IS ASSOCIATED WITH LOW CONSUMPTION OF B2 AND B12 VITAMINS IN CHILDREN WITH UROLITHIASIS

Larisa KOVACEVIC, Hong LU, Dushan KOVACEVIC, Zain AMER and Yegappan LAKSHMANAN

Children's Hospital of Michigan, Pediatric Urology, Detroit, USA

PURPOSE

We analyzed the relationship between intake of vitamins B, C and D and hypocitraturia in children with urolithiasis.

MATERIAL AND METHODS

We performed a single center, retrospective analysis in all children with renal and/or ureteral calculi seen in the past ten years. Based on two-day dietary records, the intake of vitamins B, C and D were calculated by using ESHA Research Food Processor computer program, and compared between children (1) with stone and hypocitraturia as single metabolic abnormality, and (2) with stone and either hypercalciuria, renal hyperoxaluria alone or in combination or no metabolic abnormality. Independent t-tests were used for statistical analysis in between groups.

RESULTS

Dietary diaries were completed by 91 children with urolithiasis. Results of dietary analysis are expressed as ratios of patient measured value versus recommended dietary intake for age, and are presented in the Table. Children with hypocitraturia had a significantly lower intake of vitamin B12 and nearly significant lower intake of vitamin B2 compared to children with no hypocitraturia. Urinary citrate was positively correlated with vitamin B2 intake ($r = 0.234$, $p = 0.025$).

	With Hypocitraturia (N= 24, 12 females)	No Hypocitraturia (N= 67, 45 females)	P-value
Age (years)	14.6 ± 2.84	12.6 ± 3.5	0.012
Vitamin C*	0.78 ± 0.67	1.34 ± 1.45	0.076
Vitamin D**	0.18 ± 0.14	0.21 ± 0.2	0.53
Vitamin B2*	1.19 ± 0.74	1.52 ± 0.84	0.096
Vitamin B12**	1.11 ± 0.83	1.78 ± 1.51	0.044

Results are presented as mean ± SD; * mg; **mcg

CONCLUSIONS

Children with urolithiasis have a low dietary intake of vitamin D irrespective of their metabolic cause. Hypocitraturia is associated with low consumption of B2 and B12 vitamins. Supplementation of these vitamins may be helpful in children with hypocitraturic stones. This intervention may have a prophylactic and therapeutic role in pediatric renal stones.

RENAL TUBERCULOSIS AND RENAL STONE DISEASE IN CHILDREN: IS THERE A LINK?

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SINDH INSTITUTE OF UROLOGY AND TRANSPLANTATION (SIUT), PHILIP G.RANSLEY DEPARTMENT OF PAEDIATRIC UROLOGY, Karachi, PAKISTAN

PURPOSE

The renal stone disease leads to pyonephrosis and non-functioning kidneys and so do the renal tuberculosis. The study aims to evaluate the aetiology of non-function kidneys in biopsy-proven renal tuberculosis, presenting features, operative findings and outcome.

MATERIAL AND METHODS

Retrospective review of the medical records of the children who underwent nephrectomy for non-functioning kidneys between 2003-2022 and have renal tuberculosis in the histopathology. For analysis, they are divided into two groups: Group-I with stone-disease and Group-II no-stone-disease. Data reviewed for presenting symptoms, lab parameters, operative findings and outcome. Data was analyzed in SPSS-v.20. p-value < 0.05 was considered significant.

RESULTS

92 children had renal-tuberculosis in histopathology of non-functioning kidney, 80% had stone disease and 20% had non-stone disease including VUR or PUJO with pyonephrosis or small non-functioning kidney.

	Group-I Stone-disease(n=74)	Group-II No-stone-disease(n=18)	p-value
Age(years)	9.39+/-3.19	11.2+/-3.8	0.03
Weight(kg)	21.7+/-7.2	24.4+/-7.6	0.20
M:F	50:24	8:10	0.06
Presenting symptoms	65(87.8%)	15(83.3%)	0.69
Flank Pain			
LUTs	13(17.6%)	12(66.7%)	0.0001
Cutaneous Sinus formation	19(25.7%)	1(5.6%)	0.10
Lab Parameters	10+/-2.0	9.8+/-2.19	0.61
Hb(gm%)			
ESR	62.9+/-37.8	71.2+/-41.9	0.55
Creatinine	1.0+/-1.5	1.15+/-1.82	0.84
Sterile pyuria	60(81%)	11(61%)	0.22
Operative findings			
Pyonephrosis	51(68.9%)	8(44.4%)	0.06
Psoas abscess	19(26.5%)	2(11.1%)	0.22
Colo-renal fistula	4(5.4%)	1(5.6%)	1.0

Postoperative-complications			
Wound infection	5(16.7%)	1(14.3%)	0.32
Collection in renal bed	4(13.3%)	0	
Sinus formation	1(3.3%)	0	

CONCLUSIONS

In our renal tuberculosis population, majority is with renal stone disease. LUTs were more common in non-stone-disease group whereas cutaneous sinus were more common in stone-disease group. One needs to consider tuberculosis in the differential diagnosis of patient who presents with pyonephrosis with renal stone disease especially in Tuberculosis endemic and stone endemic countries. Still it needs to understand more about renal tuberculosis and renal stone, Is it a coincidence or a co-relation?

16:27 - 16:42

Discussion

16:42 - 16:45

S34-5 (OP)

IMPACT OF URETERAL STENT DWELL TIME AFTER PRIMARY URETEROSCOPY IN PEDIATRIC PATIENTS

Cassie HULME, Rajiv KARANI, Paul CAMPBELL, Joseph RANDALL, Mickey DAUGHERTY, Brian VANDERBRINK, Eugene MINEVICH, Pramod REDDY, William DEFOOR and Andrew STRINE
Cincinnati Children's Hospital Medical Center, Pediatric Urology, Cincinnati, USA

PURPOSE

The optimal duration of ureteral stent dwell time following primary ureteroscopy in pediatric patients is unknown. We sought to explore the association of ureteral stent dwell time to office calls, emergency department visits, readmissions and complications in pediatric patients within 30 days following primary ureteroscopy.

MATERIAL AND METHODS

We performed a retrospective cohort study of patients less than 18 years who underwent primary ureteroscopy and ureteral stent placement for the treatment of urolithiasis from 2011 to 2023. Ureteral stent dwell time was defined as the time from primary ureteroscopy to the date of stent removal. In the 30 days following ureteral stent removal, the number of office calls, emergency department visits, readmissions, and complications were assessed. Multivariate analysis was performed to control for age, sex, stone size, and stone location.

RESULTS

A total of 84 patients undergoing primary ureteroscopy and ureteral stent placement were included. The median age was 16.1 years (IQR 13.8 – 17 years), and the median ureteral stent dwell time was 4 days (IQR 3 – 6 days). Patients who called the office within 30 days of stent removal (n=35) trended toward a shorter stent dwell time than those who did not call the office (n=53) (4.5 days vs 6.5 days, p=0.057). On multivariate analysis, stent dwell time of less than 5 days was significantly associated with a telephone call within 30 days of stent removal

(OR 2.96, 95% CI 1.15-8.17). Patients without an extraction string had significantly longer stent dwell times (13 days vs 4 days, $p < 0.001$).

CONCLUSIONS

Ureteral stent dwell time of less than 5 days was significantly associated with a telephone call within 30 days of stent removal. Use of a stent extraction string did not impact the rate of telephone calls, emergency department visits, readmissions, or complications.

16:45 - 16:50

S34-6 (VP)

LAPAROSCOPY-ASSISTED MINI-ECIRS IN PAEDIATRIC ECTOPIC PELVIC KIDNEY: A STEP-BY-STEP VIDEO

Otilia Eva BLAIN¹, Javier RUIZ¹, Felicitas LOPEZ IMIZCOZ¹, Nicolas ROSIERE¹, Juan Pablo CORBETTA², Danel ALBERTI¹, Leandro ASEN¹, Carol BUREK¹, Yesica GOMEZ¹, Ignacio ARENAS¹, Cristian SAGER¹ and Santiago WELLER¹

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PURPOSE

The incidence of ectopic kidney is 1 in 2200 to 3000, with the pelvic region being the most common location. Affected patients often present abnormal rotation and hydronephrosis, predisposing them to nephrolithiasis. Surgical treatment is usually challenging due to the abnormal location and anatomy, which limit the use of standard treatment options.

This video describes a step-by-step minimally invasive procedure for the management of nephrolithiasis in a paediatric ectopic pelvic kidney using laparoscopy-assisted mini-ECIRS.

MATERIAL AND METHODS

A 2-year-old boy with recurrent urinary tract infections presented with nephrolithiasis. CT confirmed an ectopic right pelvic kidney, with a 19 x 5 mm stone in the renal pelvis and a 7 x 2 mm stone in the proximal ureter. Due to the patient's age, pre-stenting was performed. Retrograde ureteropyelography revealed a high ureteral insertion and an abnormal renal axis. Three weeks later, flexible ureteroscopy showed an abnormal calyceal arrangement, with the larger stone in the posterior-inferior calyx near the ureteropelvic junction, which could not be fragmented or mobilized.

Under laparoscopic and endoscopic vision, with fluoroscopic guidance, an anteroinferior calyx puncture was performed. A transparietal stay suture, including the posterior peritoneum, allowed progressive dilation and with a 12Fr nephroscope, dusting was performed. The operative time was 180 minutes. The patient was discharged after 4 days without complications.

CONCLUSIONS

This video describes the first laparoscopy-assisted mini-ECIRS performed in a paediatric ectopic pelvic kidney. This approach provides an option for patients with anomalies related to abnormal kidney ascent, where conventional retrograde intrarenal surgery is technically unfeasible.

16:50 - 17:05

Discussion

STONES AROUND THE WORLD

Moderators: Kostas Kamperis (DEN), Naima Smeulders (UK)

Parallel Programme on Friday 5, September 2025, 17:05 - 18:05

17:05 - 17:45

Interactive case-based demonstration of the metabolic work-up, challenges and novel therapies, and including presented abstracts.

Case discussants: Arianna Mariotto, Sherjeel Saulat, Francisco Reed, Dogan Hasan Serkan, Alexander Cho, Alfredo Berrettini, Greg Tasian

17:45 - 17:48

SW-1 (OP)

LUMASIRAN TREATMENT IN PEDIATRIC PATIENTS WITH PRIMARY HYPEROXALURIA TYPE 1 (PH1): REAL-WORLD DATA FROM ITALIAN PEDIATRIC NEPHROLOGY UNITS

Michele GNECH ¹, Francesca TARONI ², Livia AMATO ³, Licia PERUZZI ⁴, Dario Guido MINOLI ⁵, Eduje THOMAS ¹, Germana LONGO ⁶, Francesca BECHERUCCI ⁷, Gabriele MALGERI ⁸, Maria Michela D'ALESSANDRO ³, Claudio LA SCOLA ⁹, Diletta Domenica TORRES ¹⁰, Barbara RUGGIERO ¹¹, Giovanni MONTINI ¹² and Alfredo BERRETTINI ¹

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PURPOSE

PH1 is a genetic disease caused by increased renal excretion of calcium oxalate, chronic renal failure, urolithiasis, nephrocalcinosis and systemic oxalosis. Until 2020 the therapy were dialysis and liver-kidney transplantation. Then Lumasiran, an RNA interference reducing hepatic oxalate production by targeting glycolate oxidase, has been approved for the treatment. The aim of this study was to evaluate the efficacy of Lumasiran in a pediatric population in a routine clinical setting.

MATERIAL AND METHODS

We conducted a retrospective observational multicentric study. Inclusion criteria: pediatric patients with genetic diagnosis of PH1 treated with Lumasiran. The efficacy of Lumasiran was evaluated testing oxaluria, oxalemia, kidney function and ultrasonographic (US) data every 6 months (M).

RESULTS

17 patients were enrolled. All patients received also supportive therapy (hydration, pyridoxine, urinary alkalinisation).

Oxalemia was below the limit of supersaturation and oxaluria was reduced > 25% from baseline to M (month) 6 in patients in conservative treatment. In 5 patients oxaluria was variable after M12 without symptoms. US showed at start urolithiasis or nephrocalcinosis in 7 patients respectively, urolithiasis and nephrocalcinosis in 1 and was normal in 2 (prenatal diagnosis). At the last follow-up. US was unmodified in 16 patients. One patient with prenatal diagnosis developed nephrocalcinosis at M3 and nephrolithiasis at M12. Renal function remained stable except one patient who started dialysis after 20 months of treatment.

No adverse effects were reported.

CONCLUSIONS

This study provides real-world evidence on the use of Lumasiran for the treatment of PH1. Lumasiran is today the only therapeutic option with real impact on the management of PH1 and shows a good tolerability profile.

17:48 - 17:51

SW-2 (OP)

★ LONG-TERM EFFECTS OF LUMASIRAN ON KIDNEY STONES AND NEPHROCALCINOSIS IN PATIENTS WITH PRIMARY HYPEROXALURIA TYPE 1

Gregory TASIAN ¹, Jeffery M. SALAND ², John C. LIESKE ³, Julien HOGAN ⁴, Yaacov FRISHBERG ⁵, Martin COENEN ⁶, Richard WILLEY ⁷, Mary CALLANAN ⁸, Cristin KASPAR ⁹, Desi MURPHY ⁸ and Sally-Anne HULTON ¹⁰

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INTRODUCTION

In primary hyperoxaluria type 1 (PH1), recurrent kidney stones and nephrocalcinosis (NC) can decrease eGFR leading to kidney failure. Lumasiran, the first RNAi therapeutic for PH1, effectively lowers urinary oxalate in pediatric and adult patients. We evaluated the effect of lumasiran long-term treatment on kidney stones and medullary NC in patients with PH1.

METHODS

Phase 2 open-label extension (OLE) study (patients ≥ 6 years of age) collected kidney stone–related adverse events (AEs), and medullary NC grade was not assessed. In Phase 3 trials ILLUMINATE-A (≥ 6 years) and ILLUMINATE-B (< 6 years), kidney stone event (KSE) rates and NC grade were exploratory endpoints.

RESULTS

Phase 2 OLE study, 14 kidney stone AEs occurred in 5/20 patients during lumasiran treatment. In ILLUMINATE-A, the historically reported KSE rate per person-year was 3.19, while observed rate during treatment was 0.47. Among placebo-crossover patients, rates remained stable (0.54). 21/39 (54%) patients had no KSEs during treatment and 7/39 (18%) had 1 KSE. In ILLUMINATE-B, the historical KSE rate was 0.24, and the observed KSE rate during treatment was 0.12; 14/18 (78%) patients had no KSEs during treatment and 3/18 (17%) had 1 KSE. NC grade improved in 16/20 (80%) patients in ILLUMINATE-A, and in 12/14 (86%) patients in ILLUMINATE-B.

CONCLUSIONS

Long-term lumasiran treatment was associated with reduced kidney stone–related AEs in the Phase 2 OLE study and low KSE rates plus decreases in NC grade in ILLUMINATE-A and ILLUMINATE-B. These are clinically relevant outcomes that are consistent with urinary oxalate reduction while on lumasiran.

17:51 - 18:05

Discussion

S35: LOWER URINARY TRACT 2

Moderators: Giovanni Mosiello (IT), Isabel Casal Beloy (SP)

Main Programme on Saturday 6, September 2025, 08:00 - 08:50

08:00 - 08:03

S35-1 (OP)

ARTIFICIAL INTELLIGENCE-BASED ANALYSIS OF UROFLOWMETRY PATTERNS IN CHILDREN: A MACHINE LEARNING PERSPECTIVE

Faruk ARSLAN ¹, Omer ALGORABI ², Yusuf Sait TURKAN ², Ersin NAMLI ², Onur Can OZKAN ³, Tufan TARCAN ³, Selcuk YUCEL ³ and Cagri Akin SEKERCI ³

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PURPOSE

In the literature, the studies have highlighted a weak agreement among experts in interpreting uroflowmetry patterns. The study aims to assess the impact of machine learning (ML) models on the interpretation of voiding patterns.

MATERIAL AND METHODS

The study included uroflowmetries of children aged 4–17 years with LUTS. Uroflowmetry patterns were independently interpreted by three pediatric urologist. Discrepancies in interpretations were jointly re-evaluated, and a consensus was reached. Voiding volume, duration, and flow rates were converted into numerical data. Eighty percent of the dataset was used as training data for ML, while there maining 20% was reserved for testing. Five different ML models were employed for classification: Decision Tree, Random Forest, CatBoost, XGBoost, and LightGBM. The models that most accurately identified each pattern were determined.

RESULTS

A total of 500 (221 boys (44.2%) and 279 girls (55.8%); 9.17 ± 3.41 years) uroflowmetries were included. In the initial assessment, 311 tests (62.2%) were interpreted similarly by the observers, while 189 tests (37.8%) were interpreted differently by at least one observer (Fleiss'Kappa=0.608). Of the samples used for ML training, 253 (50.6%) exhibited a bell-shaped pattern, 52 (10.4%) tower, 103 (20.6%) staccato, 40 (8%) intermittent, and 52 (10.4%) plateau. The highest accuracy was achieved with XGBoost ($85.00\% \pm 2.90$), while the lowest accuracy was observed with the Decision Tree ($81.80\% \pm 1.47$)(Table 1).

Voiding Patterns	Highest Accuracy	Accuracy rate (%)	Lowest Accuracy	Accuracy rate (%)
Bell Shaped	XGBoost	90,91	Decision Tree	85,77
Tower	Random Forest	73,08	Decision TreeXGBoostLightGBM	63,46
Staccato	CatBoost	83,50	LightGBM	79,61
Intermittent	XGBoost LightGBM	100	Random Forest	95
Plateau	XGBoost	71,15	LightGBM	61,54

CONCLUSIONS

High accuracy rates were observed for ML models in terms of interpreting uroflowmetry patterns in children. We believe that artificial intelligence models could contribute to the interpretation and standardization of voiding patterns in the future.

08:03 - 08:06

S35-2 (OP)

★ VIDEOFLOW: HOW TO DETERMINE THE UROFLOWMETRY CURVE FROM VIDEO URODYNAMIC IMAGES

Wouter VAN DORT ¹, Peter ROSIER ², Ruud WORTEL ¹, Rogier SCHROEDER ¹ and Laetitia DE KORT ²

1) UMC Utrecht, Pediatric Urology, Utrecht, NETHERLANDS - 2) UMC Utrecht, Urology, Utrecht, NETHERLANDS

PURPOSE

Uroflowmetry is a widely used diagnostic to assess the physiology of the voiding. Unfortunately, this tool cannot be used in very young children, as they are not able to sit on a uroflowmetry toilet. This also reduces the diagnostic value of the urodynamic pressure-flow study in assessing bladder outflow obstruction and bladder contractility in these children. Therefore, other methods for the derivation of the uroflowmetry curve could be helpful. We explored a method to calculate the uroflowmetry curve using standard care video urodynamic studies (VUDS).

MATERIAL AND METHODS

VUDS of 50 patients (48% boy, median age 10 years), able to void on a uroflowmetry toilet were retrospectively included, resulting in 1147 X-ray images. The area of the bladder was manually segmented, and the consecutive images were converted to a uroflowmetry curve, called videoflow. This manual method was enhanced with an AI algorithm, resulting in an automated derivation of the videoflow. Differences between the videoflow and standard uroflowmetry were assessed.

RESULTS

An excellent cross-correlation of 0.98 of the videoflow with the standard uroflowmetry was found. The Qmax was not significantly different ($p=0.874$), with a mean difference of only 0.4%. The mean absolute deviation in Qmax

was 1.3ml/s in the boys and 2.2ml/s in the girls. The AI model performed excellent, with only a 2% deviation from the manual segmentation.

CONCLUSIONS

The videoflow is an accurate method to derive the uroflowmetry curve from a VUDS. If validated in very young children, videoflow will be a potential new tool to assess bladder outflow obstruction in this group. The method could be extended to voiding cystographies, enlarging its potential for clinical use.

08:06 - 08:09

S35-3 (OP)

COMPARISON OF URINE SOUND RECORDINGS AND UROFLOWMETRY RESULTS IN BOYS

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PURPOSE

Uroflowmetry a non-invasive, simple, and low-cost method that can be used in the diagnosis and treatment follow-up of voiding dysfunction. There are difficulties of performing uroflow in the pediatric population. Audiflow or sonouroflow involves analyzing the sound produced by urine hitting the water in the toilet during urination to obtain a uroflow curve.

MATERIAL AND METHODS

In this study, we compared these two methods by recording the sound of urination during the conventional uroflow procedure in male children who had no lower urinary system pathology. The sound recordings were analyzed in the open-source Sonic Visualiser v4.5.2 program, and sound curves were created using the Loudness transformation, which is available under the GNU general license. Then, the curve created was digitally superimposed on the conventional UFM curve using the GIMP program. Thus, a single graph was created that we could evaluate the similarity between the noise graph of the sound recordings and the flow curve of the UFM.

RESULTS

Average age of 7.36 (ranging from 4-14 years), and an average height of 119.4 cm (ranging from 110-165 cm). Although UFM was performed with a urination sound recording for a total of 20 patients, 8 records were excluded from the study due to artifacts caused by unexpected external noises. It was observed that the audiflow curve was similar to the conventional uroflow curve, and the urination time also correlated with the conventional method.

CONCLUSIONS

With its advantages such as being simple, easy, and frequently repeatable, audiflow could be an alternative to conventional UFM.

IS UROFLOW REPRODUCIBLE IN HEALTHY BOYS? A COMMUNITY BASED OBSERVATIONAL STUDY FROM SOUTHERN INDIA

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PURPOSE

To study the reproducibility of uroflowmetry in children aged 5-15 years and to establish the age at which uroflowmetry is representative.

MATERIAL AND METHODS

Of 291 boys screened, Uroflowmetry was done in 247 eligible boys. The flow was repeated at 2 weeks. A total of 227 children were included for analysis. 20 were excluded due to a voided volume less than 50ml and/or an interrupted pattern of flow. The maximum flow rate (Qmax), average flow rate (Qavg), voided volume (vv), time to maximum flow, flow time and voiding time was recorded. The reproducibility of all parameters was assessed using Inter-correlation coefficient (ICC) and correlation using Pearson's coefficient.

RESULTS

Qmax, Qavg showed excellent concordance in boys of 5-15 years [ICC >0.6], implying the flows were reproducible. VV showed excellent concordance in boys of 8-15 years [ICC >0.6], but showed only moderate correlation in 5-7 years [ICC 0.4-0.6] probably due to the wide variation in the voided volumes. Qmax and Qavg showed significant correlation, in all age groups, with voided volume, in first and second flow [Pearson's coefficient: 0.49 & 0.53 for Qmax1 and Qmax2; 0.48 & 0.51 Qavg1 and Qavg2 respectively], implying reproducibility of flow in this age group.

CONCLUSIONS

Uroflowmetry is reproducible in children aged 5-15 years. Qmax and Qavg showed excellent reproducibility and voided volume showed good reproducibility. Qmax shows excellent reproducibility even in the smallest of the age groups studied [5-7 years]

ASSESSING POSTURAL CONTROL AND BALANCE IN INDIVIDUALS WITH PRUNE BELLY SYNDROME THROUGH 3D MOTION ANALYSIS

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PURPOSE

Prune belly syndrome (PBS) has a broad phenotypic spectrum of abdominal wall weakness/laxity secondary to deficient/absent abdominal wall skeletal musculature. Core musculature plays crucial roles in Valsalva maneuvers and balance by providing trunk support, stability and mobility. This study assesses balance and postural control in PBS to enhance their functional outcomes and quality of life (QOL).

MATERIAL AND METHODS

Utilizing 3-D motion capture and force plate technology (3DMCT), the sharpened Romberg (sRom), Pediatric Reach Test (PRT), and Timed Up and Go (TUG) tests were used to assess center of pressure (CoP) and balance. Non-parametric data was analyzed using a Mann-Whitney U test and Spearman's rank-order correlation coefficient.

RESULTS

Typically developing controls (n=14;age 9-35yrs;71% male) and PBS (n=7;age 7-34yrs;86% male) were studied, with no age or sex differences (p=0.681, 0.489). Abdominoplasty status included static (n=2), dynamic (n=1), no surgery (n=3), and unknown (n=1). When compared to controls, PBS subjects had 1)greater tandem stance CoP medial-lateral and anterior-posterior range (p<0.01, p=0.037) and ellipse area (p=0.037) during sRom demonstrating instabilities affecting real-world function, 2)normal dynamic balance, 3)longer TUG completion time (p=0.038) suggesting decreased balance and mobility, and 4)no differences in spinal range of motion across trunk, pelvis, thoracic, or lumbar segments during sitting and standing transitions, suggesting compensations in trunk muscle activation.

CONCLUSIONS

3DMCT quantitatively measures trunk/abdominal wall function, demonstrating the first objective evidence of postural control and balance deficits in PBS. 3DMCT warrants further study to assist judging the need for and outcomes of PBS abdominoplasty surgery and to maximize targeted rehabilitation and QOL.

RUBACE PROFILE OF PEDIATRIC PATIENTS WITH PRUNE BELLY SYNDROME THAT RECEIVED RENAL TRANSPLANTATION

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PURPOSE

Prune Belly Syndrome is a rare malformation characterized by a wide spectrum of phenotypic presentations. Many of these patients will require renal replacement therapy including renal transplantation. To categorize the manifestations of the syndrome in the affected organs, the RUBACE scoring system was created (Wong et al. BJU Int 2019; 123(1): 130-139), which takes into account, in addition to the classic triad (abdominal muscle deficiency, urinary tract dilation and cryptorchidism), extra-genitourinary anomalies.

MATERIAL AND METHODS

Retrospective analysis of pediatric patients from a single institution who received their first renal transplant from 2009 to 2021. From 500 transplants, 22 patients had Prune Belly Syndrome. Independent variables evaluated were sex, age at transplant, weight in kilograms and RUBACE profile at admission (R: renal; U: ureter; B: bladder; A: abdominal; C: cryptorchidism; E: extra-genitourinary). Outcome variables were graft loss and death. Qualitative variables were described as frequencies and continuous variables as medians and interquartile range (IQR). Mann-Whitney U test was performed to compare the results, considering $p = 5\%$.

RESULTS

Two Prune Belly patients died after transplant. RUBACE profile was superior ($22 \pm 22-23$) when compared to patients who survived ($16 \pm 16-19$), with $p=0.05$. This trend was not observed when evaluating renal graft loss ($p=0.13$).

CONCLUSIONS

Renal transplantation in children with Prune Belly Syndrome is unique and has specific challenges. The RUBACE score is discriminatory for patient survival, but not for graft survival.

VITAMIN D AND LUTS: IS THERE A RELATIONSHIP?

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PURPOSE

There are several non-homogeneous studies with conflicting results regarding the relationship between LUTS and vitamin D. This study aimed to explore the relationship between blood vitamin D levels and LUTS in children.

MATERIAL AND METHODS

This prospective descriptive study included children aged 5-18 with LUTS (diagnosed as per DVSS), while healthy children of the same age range from a well-child clinic served as controls. Blood samples were obtained to measure serum vitamin D, calcium, phosphorus, and magnesium levels. Patients completed a two-day bladder diary and were assessed for constipation using the Rome IV criteria and Bristol stool scale. Also, height, weight, and body mass index (BMI) were recorded. Bladder diary data were used to calculate minimum, median, and maximum bladder capacities, as well as voiding frequency. Urgency and urinary incontinence episodes were recorded. DVSS results, including the final quality-of-life question, were documented.

RESULTS

The study included 136 children with LUTS and 108 controls. Median vitamin D levels were similar between the LUTS (17.15 ng/mL [IQR 12.53-22.0]) and control groups (16.60 ng/mL [IQR 12.23-21.28], $p=0.148$). No significant correlations were identified between vitamin D levels and bladder capacity, voiding frequency, wet nights, or DVSS scores. However, children with ≥ 8 voids/day had slightly higher vitamin D levels than those with ≤ 7 voids/day (18.56 ng/mL [IQR 15.10-23.65] vs. 17 ng/mL [IQR 12-21], $p=0.037$).

CONCLUSIONS

Our study showed that vitamin D levels are comparable in healthy children and those with LUTS, thus, there seems to be no relationship between vitamin D and LUTS.

Nuances of starting the robotic surgery process

Moderators: Mohan S. Gundeti (USA)

Parallel Programme on Saturday 6, September 2025, 08:20 - 09:00

08:20 - 09:00

How to start training program?

Why train? Current status of training resources and setting up program

Mohan S. Gundeti, 5 minutes

Training Assessment, Instrumentation and Systems

CK Yeung, 5 minutes

Laparoscopy as Foundation, The Help or obstacle?

Ciro Esposito, 5 minutes

Stepwise approaches to procedures and learning from own and external sources, how to be efficient and safe?

Anne-Françoise Spinoit, 5 minutes

S36: LOWER URINARY TRACT RECONSTRUCTION 2

Moderators: Pramod Reddy (USA), Antonio Macedo (BRA)

Main Programme on Saturday 6, September 2025, 08:50 - 09:40

08:50 - 08:53

S36-1 (OP)

PRUNE- BELLY SYNDROME IN PEDIATRIC POPULATIONS: A SYSTEMATIC CROSS-SECTIONAL STUDY AND ITS IMPACT ON PATIENT AND FAMILY QUALITY OF LIFE

Marie BOUSQUET, Amane-Allah LACHKAR, Alaa EL GHONEIMI, Annabel PAYE JAOUEN and Matthieu PEYCELON

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PURPOSE

Prune-Belly Syndrome[PBS] is a rare congenital disorder characterized by significant clinical heterogeneity, necessitating complex, multidisciplinary management. This study aimed to evaluate functional and quality-of-life[QoL] outcomes in patients with PBS, focusing on nephrological, urological, gonadal, respiratory, and aesthetic dimensions.

MATERIAL AND METHODS

A monocentric, prospective, cross-sectional study was conducted. Multidisciplinary evaluations were performed, including nephrological assessments (glomerular filtration rate[GFR] via serum creatinine and cystatinC), urological analyses (bladder dysfunction assessed by the Dysfunctional Voiding Symptom Score[DVSS] (if ≥ 9) and uroflometry, renal/bladder ultrasound[US], surgical interventions), gonadal evaluations (endocrine markers, testicular volume on US (hypotrophy defined by Z-score < -2), and respiratory assessments (Pulmonary Function Tests[PFT]). QoL was assessed using the Pediatric Quality of Life Inventory[PedsQL™], while the Patient and Observer Scar Assessment Scale[POSAS] and BODY-Q questionnaire evaluated aesthetic outcomes.

RESULTS

12 patients were evaluated at a median (IQR) age of 12.8 years (9.7-15.1). Nephrological assessments revealed significant discrepancies (due to abdominal wall hypoplasia) between creatinine-based and cystatin C-based GFR estimates (97.9 vs. 73.3 mL/min/1.73m², $p < 0.01$). Consequently, chronic kidney disease[CKD] staging differed considerably (36.4% vs. 90.1% at CKD-stage ≥ 2 , $p < 0.01$). Significant post-void residuals were observed in 5 patients (55.6%), with a median (IQR) DVSS of 11.0 (5.8-12.8). Testicular hypotrophy post-orchiopexy was observed in 63% (N=12), with 44.5% (N=4) showing decreased inhibin B levels (median: 121,9 pg/ml), indicative of impaired Sertoli cell function. Respiratory assessments indicated reduced mobilizable lung volumes in 77.9% (N=7), associated with abdominal muscle hypoplasia. Aesthetic outcomes were moderate, and children reported significantly higher QoL scores than their parents.

CONCLUSIONS

This study underscores the need for enhanced gonadal and, for the 1st time, respiratory monitoring as patients transition into adulthood and highlights importance of addressing QoL disparities between patients and their families.

08:53 - 08:56

S36-2 (OP)

INTRAOPERATIVE ONABOTULINUMTOXINA ON POSTOPERATIVE RECOVERY AND MEDICATION USE IN PEDIATRIC BLADDER RECONSTRUCTION

Chad CRIGGER ¹, Jason YANG ¹, Catherine ROBEY ², David HEAP ¹, Victoria MAXON ¹, John GEARHART ¹ and Heather DI CARLO ¹

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PURPOSE

We sought to evaluate the postoperative benefits of OnabotulinumtoxinA (Botox) injections in pediatric patients undergoing bladder reconstruction.

MATERIAL AND METHODS

Pediatric patients who underwent bladder reconstruction between 2018-2024 were identified retrospectively from an institutional database. Bladder reconstruction was defined to include any combination of the following procedures - bladder neck reconstruction, bladder neck transection, Mitrofanoff or Monti catheterizable channel creation, and bladder augmentation. Patients were stratified based on concurrent ureteral reimplantation necessitating ureteral stent placement. Data on postoperative course, medications, and complications were collected.

RESULTS

Among 88 bladder reconstruction patients, 43 (48.86%) received Botox and 45 (51.11%) did not. In patients undergoing bladder reconstruction without ureteral reimplantation necessitating ureteral stents, Botox significantly reduced anticholinergic use (0.11 mg/kg/day, IQR 0.07-0.19 vs. 0.16 mg/kg/day, IQR 0.11-0.21, $p=0.05$). These patients also experienced fewer days to return to feeding (3.00 days, IQR 1.00-4.25 vs. 4.50 days, IQR 3.00-5.75, $p=0.05$) and return to bowel movement (2.00 days, IQR 2.00-3.50 vs. 4.50 days, IQR 3.00-6.00, $p=0.01$). In contrast, patients undergoing bladder reconstruction with concurrent ureteral reimplantation necessitating ureteral stents showed no significant differences in anticholinergic use (0.14 mg/kg/day, IQR 0.06-0.31 vs. 0.19, IQR 0.12-0.25, $p=0.71$). Interestingly, there was a faster return to feeding (4.00 days, IQR 3.00-4.50 vs. 6.00, IQR 4.00-7.75, $p=0.02$). Complication rates were comparable between Botox and non-Botox groups (all $p>0.05$).

CONCLUSIONS

Intraoperative Botox significantly reduced anticholinergic use among pediatric patients who underwent bladder reconstruction without ureteral reimplantation requiring ureteral stents. This demonstrates its potential as an effective adjunct for postoperative recovery in patients undergoing select reconstruction.

★ DOES URETERAL REIMPLANTATION BEFORE ONE YEAR OF AGE CAUSE LONG-TERM LOWER URINARY TRACT DYSFUNCTION?

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INTRODUCTION

Some surgeons avoid ureteral reimplantation under 1y of age due to concerns about irreversible damage to bladder function, although no studies support this. We evaluate whether patients who underwent Cohen's reimplantation for vesicoureteral reflux (VUR) or primary obstructive megaureter (POM) before the age of 1y have increased lower urinary tract dysfunction (LUTD) compared to those operated on later.

MATERIAL AND METHODS

LUTD were assessed in patients operated on between 2000 and 2015 using PLUTSS, ICIQ-SF, and CACV questionnaires. The prevalence of LUTD was compared between the two groups, including a gender-stratified analysis.

RESULTS

We assessed 319 patients, excluding 76. Eighty-three patients were operated on under 1y and 160 after 1y. Mean follow-up was 16y (range:8-25y). Patients operated on under 1y included more males (71%vs45%, $p<0.01$), VUR grade V (59%vs19%, $p<0.01$) and POM (27%vs11%, $p<0.01$), while patients who underwent surgery after 1y showed more pathological results in PLUTSS (11.3%vs2.4%, $p=0.02$) and ICIQ-SF (14%vs6%, $p=0.085$). Females showed higher scores in PLUTSS (13%vs4%, $p<0.01$), ICIQ-SF (18%vs5%, $p<0.01$) and CACV (65%vs44%, $p<0.01$). When stratifying by gender, gender was found to be a confounding factor, with patients who underwent surgery after the age of 1y having higher LUTD due to the higher proportion of women. In multivariate analysis, voiding postponement and low-grade VUR were identified as risk factors for higher PLUTSS scores.

CONCLUSIONS

Cohen ureteral reimplantation before the age of one year does not increase the risk of LUTD. Women have a higher percentage of LUTD than men, regardless of age at reimplantation.

ASSOCIATION BETWEEN BLADDER AUGMENTATION SURGERY PERFORMED UNDER AGE 10 YEARS AND FRACTURES IN CHILDREN WITH SPINA BIFIDA: A STUDY OF THE NATIONAL SPINA BIFIDA PATIENT REGISTRY

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PURPOSE

Bowel substitution in bladder augmentation surgery can lead to metabolic abnormalities and bone demineralization in individuals with spina bifida (SB). The aim of this study is to understand whether patients with SB who had bladder augmentation surgery before 10 years old have higher likelihood of fractures compared to those who had surgery age 10 and after.

MATERIAL AND METHODS

Data was queried from the National Spina Bifida Patient Registry (2009-2021). Demographics, ambulation status and orthopedic data were collected. Patients were split into the young group (age less than 10) and the old group (age 10 and older). Statistical analysis includes chi-square test for comparing fracture percentages, univariable logistic regression for calculating odds ratios, and Kaplan-Meier analysis for time from surgery to fracture.

RESULTS

1167 patients were included; 646 were in the young group and 521 were in the old group (mean age 6.1 vs 14.4 years, respectively). There was statistical difference in ambulation status ($p=0.029$) and preoperative rate of fractures (10% in old group vs. 5% in young group, $p=0.001$). The young group had more fractures after surgery (8.82%) vs. old group (4.8%, $p=0.01$). Odds of fracture are 1.92 times higher in the young group (95% CI : (1.2, 3.17). In time-to-fracture analysis, there is not enough evidence to show a difference between the two groups ($p=0.07$).

CONCLUSIONS

There is potential association of younger age at time of augmentation surgery with fracture in individuals with SB. This suggests that preoperative counseling for augmentation surgery should include discussions regarding postoperative surveillance of bone health.

AUGMENTATION ILEOCYSTOPLASTY IN PEDIATRIC POPULATION WITH BORDERLINE KIDNEY FUNCTION (CKD STAGE III)

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PURPOSE

To study the impact of the baseline renal function on the outcome of AC in children with normal renal function and those children with various degrees of renal function impairment

MATERIAL AND METHODS

A prospective study on 75 children aged from 2 to 14 years old with refractory bladder dysfunction indicated for AC with baseline GFR >30 ml/min for whom augmentation ileocystoplasty were performed between Aug. 2018 and Aug. 2020. GFR was assessed before AC and at 6 to 12 months post AC. Renal function deterioration was defined as progression to a lower CKD stage.

RESULTS

GFR improved in 53 children (74.6%) and deteriorated in 18 children (25.4%). Most of children who had low pre AC GFR (80% of CKD stage IIIa and 100% of CKD stage IIIb) had improved renal function after AC ($P=0.033$, 0.01). Children with CKD stages I and II had lower rates of renal function improvement (55% and 73.9 % respectively) ($P=0.008$, 0.168).

The minimum pre AC GFR in the improvement group was 30 ml/min. There was no statistically significant difference in post operative complications rate between each CKD stage apart from metabolic acidosis rate (Higher in CKD II ($P=0.009$)) and hyperchloremia (Higher in CKD IIIb ($P=0.018$)).

CONCLUSIONS

Augmentation ileocystoplasty didn't lead (on short term follow up) to further renal function impairment in patients with CKD stage III as was previously assumed. Augmentation ileocystoplasty may be considered safe in pediatric population with GFR as low as 30 ml/min.

LONG-TERM CONTINENCE OUTCOMES OF ROBOTIC VERSUS OPEN BLADDER NECK RECONSTRUCTION IN A PEDIATRIC POPULATION

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PURPOSE

Robotic bladder neck procedures may have unique benefits including improved visualization and suturing dexterity when compared to an open approach. We aimed to compare the peri-operative and post-operative outcomes of patients who underwent robotic versus open bladder neck reconstruction with slings over a 10—year period.

MATERIAL AND METHODS

A retrospective review was completed of all patients with neurogenic bladders who underwent robotic and open bladder neck reconstruction with sling creation from 2014 - 2024. Baseline patient demographics were collected and intra-operative and post-operative outcomes were compared using Fischer's exact and Wilcoxon rank-sum tests.

RESULTS

A total of 59 patients were identified (22 robotic and 37 open), with a median age at time of surgery of 6.7 years (IQR 5.5-10.2 years) and median length of follow up of 5.5 years (IQR 2.7-7.5 years). There were no significant differences in patient demographics between the two groups. The robotic group had a significantly shorter length of admission even when excluding those that underwent concurrent enterocystoplasty (5.0 vs 8.0 days, $p=0.037$). There was no significant difference in 30-day complication rates (40.9% vs 37.8%, $p=1.00$), surgical revision rates (22.7% vs 27.0% $p=0.77$), continence rates at 6 months (81.8% vs 73.0% $p=0.54$) or at last follow up (86.4% vs 89.2% $p=1.00$) for robotic versus open bladder neck reconstruction with slings.

CONCLUSIONS

Robotic bladder neck reconstructions are a safe alternative to an open approach as they offer similar short and long-term continence rates with significantly shorter hospital stays.

ROBOTIC PLACEMENT OF ARTIFICIAL URINARY SPHINCTER (AUS) IN 16-YEAR-OLD FEMALE WITH BILATERAL URETERAL ECTOPIA

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INTRODUCTION

AUS is commonly used for neurogenic sphincter insufficiency in pediatric patients, but it has also been successfully applied in congenital conditions like bladder exstrophy or anorectal malformations, with effectiveness rates of 90-87% respectively.

MATERIAL AND METHODS

We present the case of a 16-year-old female with bilateral ureteral ectopia and four prior surgeries. She suffered from severe stress incontinence (SI), requiring 7 pads per day. A robotic AUS placement was decided. The procedure involved opening the bladder-vaginal space and performing a detailed dissection to place the cuff around the bladder neck. A 2cm suprapubic incision allowed for the insertion of a 5mm trocar and externalization of the cuff and balloon tubes. The peritoneum was closed, and a pocket was created in the right labium maiora for the activation pump.

RESULTS

The surgery was successful without complications. The catheter was removed after 6 days, and the AUS was activated after 6 weeks. Post-surgery, the patient no longer had SI and experienced normal voiding without post-void residuals (PVR).

CONCLUSIONS

AUS is an effective treatment for severe SI in pediatric patients. The robotic approach enhances visualization, reduces the risk of injury, and minimizes complications.

S37: LOWER URINARY TRACT 3

Moderators: Marco Castagnetti (Italy), Perviz Hajiyevev (AZ)

Main Programme on Saturday 6, September 2025, 09:40 - 10:40

09:40 - 09:43

S37-1 (OP)

SAFETY, TOLERABILITY, AND EARLY OUTCOMES OF MIRABEGRON IN OPTIMIZING BLADDER FUNCTION IN CHILDREN WITH CHRONIC KIDNEY DISEASE AND POST-KIDNEY TRANSPLANTATION

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PURPOSE

The use of mirabegron in pediatric patients with CKD and kidney transplant (KT) requires caution due to complex comorbidities, potential drug interactions, and hypertension risks. Herein we evaluate safety, tolerability, and outcomes of mirabegron in children with CKD and post-KT with refractory voiding dysfunction (rVD).

MATERIAL AND METHODS

We reviewed pediatric patients receiving mirabegron for rVD. Data collected included demographics, underlying diagnoses, bladder capacity (via uroflowmetry or videourodynamics), lower urinary tract symptoms (LUTS), mirabegron dosing, adverse effects, creatinine, and Tacrolimus levels. Paired t-tests compared pre- and post-treatment outcomes.

RESULTS

Thirteen pediatric patients (mean age $133 \pm [MR1] [JR2] 52$ months, 61% female) were included. All received extended-release mirabegron (25-50 mg/day). It was well-tolerated, with no serious adverse effects or hypertension. Two patients with pre-transplant hypertension became normotensive post-transplant. Mirabegron significantly improved LUTS, with 69% reporting partial or complete symptom resolution. Bladder capacity significantly increased, rising from $46.7 \pm 24.9\%$ to $84.3 \pm 29.5\%$ of the expected bladder capacity for age (% EBC) ($p < 0.01$). No significant changes were observed in eGFR ($p = 0.98$) or Tacrolimus levels ($p = 0.85$).

CKD stages N (%)			
1		3 (23)	
2		3 (23)	
3a		-	
3b		1 (7.7)	
4		1 (7.7)	
5		5 (38.6)	
Kidney transplant recipients N (%)		5 (38.6)	
Duration of treatment		30.7 (11-40)	
Median (IQR) months			
	Pre-Mirabegron	Post-Mirabegron	p value
Bladder volume	46.7 ± 24.9	84.3 ± 29.5	<0.01
%EBC			
(mean ± SD)			
PVR ml	8.2 ± 17.2	6.1 ± 7.8	0.70
(mean ± SD)			
eGFR	89.5 ± 38.3	89.2 ± 38	0.98
Tacrolimus level	5.6 ± 1.2	5.8 ± 1.9	0.85
(N = 5)			
On target	3/5	5/5	

CONCLUSIONS

Mirabegron is safe and well-tolerated in pediatric CKD and post-KT patients with rVD. Early outcomes suggest significant improvements in LUTS and bladder capacity, with low risk of hypertension. Further studies are needed to confirm these findings and assess long-term outcomes.

INTRAVESICAL BOTULINUM TOXIN FOR THE TREATMENT OF NON-NEUROGENIC DETRUSOR OVERACTIVITY RESISTANT TO MEDICAL TREATMENT

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INTRODUCTION AND OBJECTIVE

The use of intravesical Botulinum Toxin (BTX) for the treatment of idiopathic detrusor overactivity has been extensively studied in adults. However, studies involving paediatric populations are limited. The aim of this study is to evaluate the effectiveness of BTX injections in children with non-neurogenic detrusor overactivity (DO) resistant to anticholinergic and to analyze potential predictive factors of success.

MATERIAL AND METHODS

We retrospectively reviewed clinical files of all children affected by non-neurogenic detrusor overactivity resistant to medical therapy, treated with intradetrusor BTX injections between November 2011 and November 2021. All patients failed medical treatment with anticholinergic (oxybutynin, tolterodine, solifenacin) and underwent urodynamic studies before treatment with BTX.

We analyzed the following parameters: sex, age at first treatment, urgency before treatment, frequency, comorbidities, bladder capacity vs expected bladder capacity (BC/EBC), post void residual (PCR), and cystometrogram parameters (bladder compliance, cystometric capacity, end fill pressure and max pressure DO). Treatment outcomes were classified as either a complete response or no response.

RESULTS

A total of 69 children were included, 38 girls (55%) and 31 boys (45%); presenting symptoms were day-time urinary incontinence, urgency, frequency in 100%, 97%, 88,4%, respectively.

Median age at first BTX injection was 11.6 years (8-16 years). Age at last follow up was 15,4 years (8-20).

Overall success rate was 46/69 (67%) after a median of 2 BTX injections.

No significant differences were found between responders and non-responders in relation to the variables analyzed. No significant associations could also be identified at the multivariate analysis.

CONCLUSIONS

Botox injection is a potentially effective adjuvant therapy in the treatment of children with non-neurogenic, drug-resistant overactive bladder (OAB). None of the variables analyzed proved to be statistically significant. Further studies and multicenter collaboration are needed to draw more meaningful conclusions.

REFRACTORY OVERACTIVE BLADDER: WHAT IS THE NATURAL HISTORY?

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PURPOSE

Overactive bladder (OAB) refractory to anti-cholinergics is a challenging condition and requires paediatric urology services and specialist nursing support for years. After transition to adult services, progression remains unclear. This study evaluated long-term outcomes.

MATERIAL AND METHODS

48 patients/parents who had participated in a RCT 10 years earlier and had urodynamically proven refractory OAB with day time wetting were invited to complete a questionnaire.

RESULTS

Median age at presentation with OAB was 7.0 years(range:3.0–15.0). All were refractory to anti-cholinergics and underwent urodynamic study (UDS) a median of 2.0 years later. After confirmation of bladder overactivity, interventions included anti-cholinergics only(5), Botulinum toxin(32), or Mirabegron(11) as a single or combined therapy.

The telephone questionnaire was completed by participants at a current median age of 18.0 years(range:15.0–23.0).

20 patients (41.7%) were symptom-free, and 14 patients (29.2%) had some urgency with no significant impact on quality of life. Another 3(6%) had mild OAB symptoms.

11 had moderate-to-severe OAB symptoms but only 6 were taking medication (4 under adult services). 42 patients (87.5%) were off medication. 39 patients (81.3%) expressed great satisfaction with paediatric urology/nursing services.

CONCLUSIONS

Despite an often long and frustrating journey in refractory OAB, long term outcome is encouraging with 77% patients having complete or near complete symptom resolution. 23% have persistent significant symptoms but half do not seek appropriate help, highlighting the need for a robust transition pathway. Moreover, the high satisfaction rate with our paediatric urology services demonstrates the importance of a patient-centred, multidisciplinary approach.

PREDICTIVE FACTORS FOR FULL RESPONSE IN STRUCTURED GIGGLE INCONTINENCE TREATMENT

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PURPOSE

We aimed to compare the treatment options for giggle-incontinence (GI) and identify the factors associated with full response (FTR) to a structured treatment.

MATERIAL AND METHODS

The data of patients treated for GI in our outpatient clinic between 2010 and 2024 were evaluated. The patients who did not achieve a FTR and required methylphenidate administration as the next step were analysed in two groups. Patients in Group 1 received standard urotherapy and anticholinergic treatment, while those in Group 2 received standard urotherapy and biofeedback therapy.

RESULTS

A total of 123 patients were included in the study, Group 1 n=61 and Group 2 n=62

Initially characteristics of patients with full response with partial and non-responders, multivariate analysis revealed that admission at post pubertal age ($p < 0.05$), female gender ($p < 0.001$), and a positive family history ($p < 0.05$) were significantly associated with full response for both Group 1&2. However, no significant association was found with BMI, IBSS, constipation or nocturnal enuresis.

As the second outcome, response to methylphenidate treatment were evaluated for both groups, no significant differences were observed in the percentage of full responders between the two groups at 1, 3, and 6 months. However, at the 12-month follow-up, the percentage of full responders in Group 2 was significantly higher compared to Group 1 ($p < 0.01$).

CONCLUSIONS

For treatment of GI, postpubertal age, female gender, and a positive family history were found to be associated with a complete treatment response both for anticholinergics and biofeedback.

In refractory GI cases where methylphenidate was added to the treatment, a history of biofeedback therapy was associated with long-term full treatment response.

INTRAVESICAL BOTOX AS AN EFFECTIVE THERAPY FOR ISOLATED GIGGLE INCONTINENCE IN CHILDREN

Eliza SZWARCBERG, Chris KIMBER and Kiarash TAGHAVI

Monash Children's Hospital, Department of Paediatric Urology, Clayton, AUSTRALIA

PURPOSE

Giggle incontinence is a bladder storage disorder characterized by uncontrolled voiding during or immediately after laughter. The study aimed to determine the efficacy of intravesical Botox injections in the management of children with giggle incontinence.

MATERIAL AND METHODS

A retrospective review was performed of children who received intravesical botulinum toxin-A for giggle incontinence over a six-year period. All children experienced complete bladder emptying during/immediately after laughter, with or without the presence of related voiding disorders. Severity was classified as: mild (more than once monthly, less than twice per week), moderate (more than once per week, not daily), severe (at least daily). Outcomes were characterised as: "no response" (0-49% reduction in number of episodes), "partial response" (50-99% reduction), "complete response" (100% reduction).

RESULTS

The study analysed 17 children who underwent 34 injection procedures. Median age at first treatment was 11 years (range 6-17). Mean number of treatment cycles was 2.1 (range 1-5 injection procedures). Median time between treatment cycles was 14 months (IQR 7-24). Breakdown of treatment response according to severity and associated symptoms are presented below.

Pre-op Severity	No response	Partial response	Complete response	
Moderate	3 (23%)	2 (15%)	8 (62%)	13
Severe	0	1 (25%)	3 (75%)	4
	3 (18%)	3 (18%)	11 (65%)	17

Table 1: Treatment response according to severity of giggle incontinence prior to initial injection procedure

	No response	Partial response	Complete response	
No related voiding disorder	2 (50%)	0	2 (50%)	4
Presence of related voiding disorder	1 (8%)	3 (23%)	9 (69%)	13
	3 (18%)	3 (18%)	11 (65%)	17

Table 2: Treatment response according to presence of a related voiding disorder

CONCLUSIONS

The present study is the first case series to confirm intravesical Botox injection as an effective, well-tolerated management option for children with giggle incontinence.

EFFECTIVENESS OF INDIVIDUALIZED PELVIC FLOOR MUSCLE REHABILITATION PROGRAM IN CHILDREN WITH LOWER URINARY TRACT DYSFUNCTION

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PURPOSE

Lower urinary tract dysfunction(LUTD) is common in children.Pelvic floor muscle(PFM) function contributes to its pathophysiology. This study aimed to investigate the effectiveness of an individualized pelvic floor muscle rehabilitation(PFMR) program on symptoms,uroflowmetry parameters and pelvic floor muscle activity(PFMA) in children with LUTD.

MATERIAL AND METHODS

The study included 145 children(73 girls/72 boys, mean age 8,77) diagnosed with LUTD through non-invasive evaluations. Children were evaluated with the Dysfunctional Voiding and Incontinence Symptom Score(DVISS),uroflowmetry and PFMA measurement before and after treatment. All patients received an individualized PFMR program combined with standart urotherapy.

RESULTS

The average number of sessions was 11,81(range 3-27). Treatment started with twice-weekly sessions for 3 weeks, then weekly for 4 weeks, followed by monthly sessions until full recovery.Significant improvements were seen in PFM functions(relaxation, contraction, and functional contraction amplitudes)($p=0.0001$)(Table). The average DVISS dropped from16,52 to 1,41($p=0,0001$) and average postvoiding residual urine(PVR) decreased from 29,86 ml to 7,17 ml after treatment($p= 0.0001$).

The average resting activity of the PFM before treatment was positively correlated with higher PVR($p=0,0001$). Children with higher average functional contraction amplitude before treatment had lower PVR values both before and after treatment($p=0,030$; $p=0,031$). Children with higher pre-treatment DVISS scores required more sessions($p=0.048$).

Table:Comparison of parameters before and after treatment

	Before Treatment	After Treatment	p value
PFM rest average(μ V)	3,09 \pm 1,73	1,17 \pm 0,68	0,0001
PFM work average(μ V)	5,32 \pm 2,62	9,46 \pm 3,55	0,0001
PFM functional contraction amplitude(μ V)	2,20 \pm 2,52	8,30 \pm 3,55	0,0001
Total DVISS score	16,52 \pm 7,01	1,41 \pm 2,88	0,0001
PVR(ml)	29,86 \pm 37,36	7,17 \pm 8,70	0,0001

CONCLUSIONS

Individualized PFMR is an effective method for improving symptoms, PFMA and reducing PVR in children with LUTD. Increased pelvic floor resting activity before treatment may contribute to higher PVR. PFM functions determined by PFMA measurement should guide rehabilitation program selection.

10:18 - 10:21

S37-7 (OP)

AT-HOME BIOFEEDBACK DEVICE FOR PEDIATRIC PATIENTS WITH LOWER URINARY TRACT DYSFUNCTION

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PURPOSE

Biofeedback is a successful treatment option for pediatric patients with urinary issues secondary to pelvic floor dysfunction. Ambulatory biofeedback sessions pose a hefty time commitment for patients and caregivers, especially for those who must repeatedly travel long distances for care. Unfortunately, this prohibits many patients from attempting biofeedback therapy. The goal was to develop an intuitive, portable, non-invasive pediatric biofeedback device with ability to communicate data in real-time to a web-based application for at-home use.

MATERIAL AND METHODS

An engineering and clinical team jointly produced a novel biofeedback device for pediatric patients by developing design specifications and system diagrams for the device. We identified eight user need components and eleven engineering design requirements. Considerations for portability, reliability, technical complexity, form factor, responsivity, cost, and clinical accuracy were prioritized.

RESULTS

A high-fidelity, fully functioning device prototype was developed that addressed our key design components. Verification of eleven engineering requirements was performed, as was validation of eight user needs, all of which passed. The final prototype design included a portable, simple, cost-efficient housing unit integrated with a responsive, kid-friendly user interface. The housing unit was printed with PLA resin and encompassed a

microcontroller, signal processor, Bluetooth chip and battery. A downloadable, web-based, executable file was designed to consolidate EMG electrode data transmitted via Bluetooth into an interactive game for children.

CONCLUSIONS

We developed a novel pediatric biofeedback device consisting of a portable housing unit and web-based user-friendly interface. Our device has the potential to augment ambulatory biofeedback sessions as well as expand access to biofeedback therapy for children who may benefit. Future studies will assess patient usability and treatment efficacy of the device in both clinical and at-home settings.

10:21 - 10:24

S37-8 (OP)

CLINICAL CHARACTERISTICS OF CHILDREN WITH NON-FUNCTIONAL PELVIC FLOOR

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PURPOSE

The absence of any action of pelvic floor muscle is called non-functional pelvic floor (NFPF). It can be detected by physical examination or electromyographic measurements of pelvic floor muscle activity (PFMA). We investigated the clinical characteristics of children with lower urinary tract dysfunction (LUTD) and NFPF.

MATERIAL AND METHODS

A total of 250 children (147 male/103 female, mean age 8,6) with LUTD were evaluated using non-invasive methods. When PFMA was measured, if the EMG value did not change when relaxation and contraction were asked, that is, the average contraction(work-avg) and relaxation(rest-avg) activities were equal and there was no pelvic floor muscle movement in the physical examination, NFPT was diagnosed. Patients were categorized by their voiding patterns. Patients were divided into two groups as those with average rest/work activity above and below 2 µV in PFMA measurement.

RESULTS

NFPF was detected in 79 patients(31,6%). The mean DVISS was 16,2 for patients with NFPF and 14,7 for those without NFPF(p=0,041). The frequency of NFPT was %52,5 in intermittent, %42,9 in staccato and %18,8 in continuous voiding pattern. Rest/work avg. was below 2 µV in 19 of these patients(24,1%) and above 2 µV in 60(75,9%). Pelvic floor muscle rehabilitation(PFMR) was planned starting with manual approaches and relaxation exercises for patients with rest/work activity above 2 µV. Patients with rest/work activity below 2 µV were directly included in the program to gain functionality.

CONCLUSIONS

NFPF is common in children with LUTD. As the voiding pattern worsens, the frequency of NFPF increases. The majority of these patients need a rehabilitation program that begins with a focus on relaxation, while some need a rehabilitation program that directly focuses on gaining functionality. It should be diagnosed through pelvic floor

muscle evaluation and treated with an individualized PFMR program based on the evaluation results. We recommend that these cases be defined as “Frozen Pelvic Floor”.

10:24 - 10:27
S37-9 (OP)

EARLY ADJUNCTIVE THERAPIES IN THE MANAGEMENT OF REFRACTORY BLADDER AND BOWEL DYSFUNCTION IN CHILDREN: ENHANCING CLINICAL OUTCOMES

Adree KHONDKER, Lisa WANG, Mandy RICKARD, Mirriam MIKHAIL, Abby VARGHESE, Beverly MIRANDA, Michael CHUA, Rodrigo ROMAO, Joao PIPPI SALLE, Max FREEMAN, Armando LORENZO and Joana DOS SANTOS
The Hospital for Sick Children, Urology, Toronto, CANADA

PURPOSE

Urotherapy and constipation management are primary treatments for BBD, but 20-50% of children remain symptomatic despite treatment (refractory BBD [rBBD]). Herein, we aim to identify predictors of symptom improvement and evaluate supplementary strategies for managing rBBD.

MATERIAL AND METHODS

We reviewed children with rBBD from 2020 to 2024. Data on baseline characteristics, interventions (urotherapy, conservative adjuncts [pelvic floor physiotherapy and biofeedback], bowel and urological medications), and symptom improvement ($\geq 50\%$ reduction) were collected. Multivariable logistic regression analyzed the association between each treatment and symptom improvement, adjusting for age, sex, mental health comorbidities, and toilet-training age.

RESULTS

130 patients (61% female, median age 11 years) were included, with a median follow-up of 5 months[MR3]. Most patients adhered to urotherapy (55%) or conservative adjuncts (56%). Symptom improvement was observed in 62 patients (48%). In adjusted analyses, both urotherapy (OR 2.4, 95% CI 1.2-5.1) and conservative adjuncts (OR 2.2, 95% CI 1.0-4.5) were associated with symptom improvement. Early toilet training (< 2 years) was linked to an increased risk of refractory BBD (OR 1.25, 95% CI 0.53–2.90), though not statistically significant.

Variable (N = 130)		Value (Median, IQR or N, %)
Age at toilet training (months)		36 (24, 36)
Comorbid Mental Health (%)		51 (39%)
Symptom Improvement		62 (48%)
Treatment	Adjusted Odds Ratio	p-value
Urotherapy (alone)	2.4 (1.2, 5.1)	0.02
Conservative Management Adjuncts (physiotherapy, biofeedback, home education, neurostimulation)	2.2 (1.0, 4.5)	0.04
Bowel Medications (PEG, Ex-Lax, Enema, Bisacodyl)	1.0 (0.4, 2.2)	0.93

Urological Medications (Solifenacin, Oxybutynin, Mirabegron, Tamsulosin)	0.6 (0.2, 1.4)	0.56
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CONCLUSIONS

Adherence to urotherapy and timely use of conservative adjunctive therapies significantly improve outcomes in children with refractory BBD, emphasizing the importance of early, personalized treatment.

10:27 - 10:40
Discussion

S38: LOWER URINARY TRACT 4

Moderators: Gunay Ekberli (TR), Yazan Rawashdeh (DEN)

Main Programme on Saturday 6, September 2025, 11:30 - 12:15

11:30 - 11:33

S38-1 (OP)

DEVELOPMENT AND VALIDATION OF THE RILEY BLADDER QUALITY OF LIFE QUESTIONNAIRE (RIBQQ) FOR CHILDREN WITH LOWER URINARY TRACT DYSFUNCTION

Konrad SZYMANSKI ¹, Benjamin WHITTAM ², Hannah DILLON ², Shelly KING ², Joshua ROTH ², Martin KAEFER ², Brandon COCKRUM ¹, Pankaj DANGLE ¹, Kirstan MELDRUM ¹, Richard RINK ², Mark CAIN ² and Rosalia MISSERI ²

1) Riley Children's Health at IU Health, Pediatric Urology, Indianapolis, USA - 2) Riley Children's Health at IU Health, Indianapolis, USA

PURPOSE

Existing health-related quality of life (HRQOL) questionnaires used for children with lower urinary tract dysfunction (LUTD) were developed without children's input and lack LUTD specificity and sensitivity to changing symptoms. We aimed to develop and validate a child-centered bladder-specific HRQOL questionnaire.

MATERIAL AND METHODS

We drafted an 18-question pilot questionnaire using a comprehensive item generation/refinement process with children with LUTD, parents and providers. It was administered to children 8-17 years old attending LUTD clinics and healthy controls (2023-2024). Final questions were determined by clinical relevance, high factor loadings and psychometrics. At baseline and at 3 months, children also completed the 13-item symptom questionnaire (Vancouver Nonneurogenic Lower Urinary Tract Dysfunction/Dysfunctional Elimination Syndrome Questionnaire, VQ), 20-item Pediatric Incontinence Questionnaire (PinQ, physician-developed bladder-specific HRQOL) and 10-item Kidscreen-10 questionnaire (generic quality of life). Non-parametric tests, factor analysis and linear regression were used.

RESULTS

Median age of 172 children was 12 years old (44% males), similar to the 32 controls ($p \geq 0.12$). Face and content validity of the 10-question Riley Bladder Quality of Life Questionnaire (RIBQQ) were established by children, parents, and experts. Internal consistency and test-retest reliability were high (Cronbach's $\alpha = 0.85$, ICC = 0.80). Correlations were moderate with VQ ($r = -0.45$), strong with PinQ ($r = -0.81$) and low with Kidscreen ($r = 0.29$). Individuals would appreciate RIBQQ differences of $\geq 10/100$ points. RIBQQ scores were lower among children with LUTD than controls (medians: 50 vs. 100, $p < 0.0001$) and correlated with LUTD severity (very mild: 66, mild: 57.5, moderate: 37.5, $p < 0.0001$).

For 89 children providing 3-month follow-up data (20 implemented LUTD therapies), VQ improved by a median 1 point ($p = 0.01$) and RIBQQ by 2.5 ($p = 0.03$), without significant changes in PinQ and Kidscreen ($p \geq 0.22$). After

adjusting for baseline symptom severity and their impact on HRQOL (baseline RIBQQ), RIBQQ scores increased with symptom improvement at 3 months (RR=2.63, p=0.01).

CONCLUSIONS

RIBQQ is a short, valid HRQOL questionnaire for children with LUTD and may be the preferred method of assessing clinical change.

11:33 - 11:36

S38-2 (OP)

THE BABITT QUESTIONNAIRE FOR EVALUATION OF BOWEL AND BLADDER FUNCTION IN CHILDREN WHO ARE INTRODUCED TO ASSISTED INFANT TOILET TRAINING - CONTENT VALIDITY AND FEASIBILITY

Anna LEIJON ¹, Terese NILSSON ², Ulla SILLÉN ³, Anna-Lena HELLSTRÖM ⁴, Linda VIXNER ⁵ and Barbro HEDIN SKOGMAN ²

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PURPOSE

The ongoing BABITT study (Bowel and Bladder function in Infant Toilet Training) is a randomized controlled trial investigating whether assisted infant toilet training reduces the prevalence of functional bowel and bladder disorders in children up to 4 years of age. The aim of this present observational study is to construct, assess content validity and evaluate feasibility of the questionnaire used in the BABITT study.

MATERIAL AND METHODS

The questionnaire was developed in three consecutive steps. Step 1, outlining based on literature review and expert panel discussions. Step 2, validation for relevance and simplicity by content validity index (CVI) using 4-point Likert scales. With dichotomized data, an index level more than or equal to 0.78 was considered as acceptable. Step 3, the respondent burden was analysed and a pilot phase allowed for evaluation of feasibility.

RESULTS

In Step 1, the Rome IV criteria and ICCS frameworks were selected for items comprising the primary outcomes in the BABITT study. After the final assessment round in Step 2, the item-level content validity index (I-CVI) was excellent, ranging from 0.88 to 1.00 in most items, in all domains, for both relevance and simplicity. In the pilot phase Step 3, the response rate was 95% and the parents' acceptance of replying to the questionnaire was satisfactory.

CONCLUSIONS

A web-based questionnaire was developed to evaluate parent-reported bladder and bowel function in children who are introduced to assisted infant toilet training. The BABITT questionnaire emerged as valid and feasible in its context.

11:36 - 11:47

Discussion

11:47 - 11:50

S38-3 (OP)

CANNABIS USE IS ASSOCIATED WITH LOWER URINARY TRACT SYMPTOMS IN PEDIATRICS PATIENTS - A LARGE CLAIMS DATABASE STUDY

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PURPOSE

To investigate whether cannabis use disorder (CUD) is associated with the diagnosis of lower urinary tract symptoms (LUTS) in pediatric patients.

MATERIAL AND METHODS

This retrospective cohort study queried the TriNetX Research Network, a claims database with records from over 140 million patients and 100 healthcare organizations, for previously healthy male and female patients under 18 years of age with or without a diagnosis of CUD. Propensity-score matching was conducted matching for demographic factors and comorbidities associated with LUTS. The primary outcomes were new diagnoses of all-cause LUTS, pelvic pain, overactive bladder (OAB), dysuria, or urinary tract infection (UTI) among patients with prior CUD compared to controls without CUD.

RESULTS

We identified 4,859,819 male (12,099 with CUD, 4,847,720 without) and 4,274,461 female (12,349 with CUD, 4,262,112 without) patients for inclusion. After propensity-score matching, there was 11,840 male and 11,810 female patients in each arm with median ages of 15.6 and 15.5 years, respectively.

At 5 year follow up, significant increases in new diagnoses of pelvic pain (OR 2.3 [95% CI 1.8-2.9], $p < 0.01$), OAB (OR 1.6 [95% CI 1.9-2.7], $p < 0.01$), dysuria (OR 1.2 [95% CI 1.1-1.5], $p = 0.01$), and UTI (OR 1.8 [95% CI 1.5-2.1], $p < 0.01$) were observed among female patients with CUD compared to controls.

At 5 years follow up, significant increases in new diagnoses of pelvic pain (OR 3.8 [95% CI 2.4-5.9], $p < 0.01$), dysuria (OR 1.4 [95% CI 1.1-1.8], $p = 0.02$), and UTI (OR 1.7 [95% CI 1.2-2.6], $p < 0.01$) were observed in male patients with CUD compared to controls.

CONCLUSIONS

We observed significant increases in first-time LUTS diagnoses in pediatric patients with CUD compared to matched controls. Further investigation of how cannabinoids impact the urinary tract and pelvic floor is warranted.

11:50 - 11:53

S38-4 (OP)

SCHOOL PERFORMANCE AND COMORBIDITIES IN CHILDREN WITH FECAL INCONTINENCE

Britt BORG¹, Betina TRABJERG², Julie Werenberg DREIER², Søren RITTIG¹, Anders BREINBJERG¹, Jakob CHRISTENSEN², Kristian JUUL³, Per Hove THOMSEN⁴ and Konstantinos KAMPERIS¹

1) Aarhus University Hospital, Child and Adolescent Medicine, Aarhus N, DENMARK - 2) Aarhus University, National Centre for Register-Based Research, Business and Social Sciences, Aarhus V, DENMARK - 3) Ferring Pharmaceuticals, R&D, TA Urology, Kastrup, DENMARK - 4) Aarhus University Hospital, Child and Adolescent Psychiatry, Aarhus N, DENMARK

PURPOSE

To investigate whether fecal incontinence in children is associated with performance on standardized school tests.

MATERIAL AND METHODS

In a register-based nationwide matched cohort study of children born in Denmark between 1997 and 2008, we identified 3413 children with fecal incontinence (ICD-10 codes from health registers) and matched on sex and age with 34130 reference children.

Mean difference (Δ) in test scores between children with fecal incontinence and children without fecal incontinence on standardized National School Tests in language and mathematics were estimated applying multiple linear regression adjusting in for relevant confounders. In sub-analyses, we investigated the influence of mental disorders.

RESULTS

We identified 3,413 children with fecal incontinence (70 % boys), median age at treatment onset was 7.0 years [IQR 5.9 to 8.5]. Children with fecal incontinence had lower test scores than matched reference children, e.g., 6th grade mathematics $\Delta_{\text{basic adjusted}}$ -9.3 [95% CI -10.4 to -8.3], $\Delta_{\text{fully adjusted}}$ -4.9 [95% CI -5.9 to -4.0]. Prevalence of psychiatric disorder was high in children with fecal incontinence e.g., 23.7 % in 8th grade compared to 5.9 % of reference children. Children with fecal incontinence and most types of psychiatric disorder scored substantially lower than the reference children, most notably was ADHD, e.g., in 6th grade mathematics tests $\Delta_{\text{fully adjusted}}$ -13.2, [95% CI -16.4 to -10.0].

CONCLUSIONS

In this nationwide register-based study, children with fecal incontinence scored lower in tests of school performance compared to matched reference children even after adjustment for confounders. The prevalence of clinically diagnosed MD was high in children with fecal incontinence, and highly associated with low school

performance. Healthcare professionals, teachers and parents need to be extra mindful of children with fecal incontinence, and are urged to acquire the right support for children with fecal incontinence, including referral for evaluation of psychiatric disorder even at small suspicion, as the prevalence is immense.

11:53 - 11:56

S38-5 (OP)

THE VALUE OF URINARY CA19-9 LEVEL IN THE DIFFERENTIAL DIAGNOSIS OF NEUROGENIC AND NON-NEUROGENIC LOWER URINARY TRACT DYSFUNCTION IN CHILDREN

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PURPOSE

Urinary CA19-9 is associated with hydronephrosis and renal pelvis diameter and may indicate kidney damage in obstructive uropathies. This study hypothesized that urinary CA19-9 could serve as a biomarker for neurological deficits in children with LUT symptoms. The aim was to compare CA19-9 levels in children with neurogenic and non-neurogenic LUT dysfunction.

MATERIAL AND METHODS

50 children (25 neurogenic, 25 non-neurogenic) with LUT dysfunction and 15 healthy controls were prospectively included. Urinary CA19-9 was analyzed using ELISA, and creatinine levels were measured in spot urine samples. For the neurogenic group, DMSA, USG, VCUG, and UD parameters were recorded. UUT damage (VUR, hydronephrosis, or renal scarring) was assessed.

RESULTS

The mean age was 9.26 years (range: 1-17). Urinary CA19-9 levels were 77.34 U/ml cre in the neurogenic group, 58.63 U/ml cre in the non-neurogenic group, and 48.21 U/ml cre in controls ($p < 0.001$). No significant differences were found in subgroup analyses of the neurogenic group. Similarly, no correlations were observed between CA19-9 levels and voiding frequency, bladder capacity, Qmax, or symptom scores in the non-neurogenic group.

Evaluation of Parameters of the Neurogenic Group

	Ca19-9 U/ml cre Median (min-max)	P value
UUT Damage		0,27
Present (n:13)	70,05 (44,21-102,15)	
Absent (n:12)	80,74 (41,73-107,84)	
DLPP (cm H2O)		0,174

> 20 (n:9)	77,66 (57,3-107,84)	
≤ 20 (n:7)	61,29 (41,73-83,52)	
Compliance (ml/cm H ₂ O)		0,117
< 10 (n:17)	75,78 (41,73-107,84)	
≥ 10 (n:6)	91,79 (60,96-102,15)	

Correlation Analyses of the Neurogenic Group

(n:25)	Ca19-9 U/ml cre
Voiding Frequency	0,533
Bladder capacity (ml)	0,691
Qmax (ml/s)	0,936
Symptom Score	0,858
Quality of Life Score	0,110

CONCLUSIONS

CA19-9 levels were significantly higher in children with neurogenic LUT dysfunction. Further studies are required to explore its role in assessing UUT damage and UD parameters.

11:56 - 12:15

Discussion

S39: ENURESIS

Moderators: Sonia Pérez Bertólez (SP), Allon van Uiter (NL)

Main Programme on Saturday 6, September 2025, 12:15 - 13:20

12:15 - 12:18

S39-1 (OP)

★ FLUOXETINE, SELECTIVE SEROTONIN REUPTAKE INHIBITOR, VERSUS DESMOPRESSIN IN PRIMARY MONOSYMPTOMATIC NOCTURNAL ENURESIS

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PURPOSE

Tachyphylaxis was a major problem of selective serotonin reuptake inhibitor (SSRI) drug as fluoxetine, like other anti-enuresis medications. To evaluate the efficacy of fluoxetine 20 mg, SSRI, versus the standard treatment, desmopressin 0.2 mg, in primary monosymptomatic nocturnal enuresis (PMNE) treatment.

MATERIAL AND METHODS

This was a single-blinded randomized clinical trial. Children ≥ 7 years old on urotherapy and still had severe PMNE were screened for eligibility. Children were maintained on 20 mg of fluoxetine or desmopressin 0.2 mg orally once daily in for 3-months. The primary outcome for this trial was to measure the efficacy of both drugs in nocturnal enuresis frequency decrease at three month. The secondary endpoints were treatment-related side effects and nighttime arousal.

RESULTS

The baseline parameters were comparable between Fluoxetine group (N = 29) and Desmopressin group (N = 28). The response to treatment at 1-month as non-responders (NR), partial responders (PR), complete responders (CR) were 69%, 24.1%, 6.9% versus 57.1%, 32.1%, 10.7% in fluoxetine and desmopressin groups, respectively (p=0.65). At 3rd month, the NR, PR, CR were 69%, 31%, 0% versus 57.1%, 32.1%, 10.7% in fluoxetine and desmopressin groups, respectively (p=0.18). Nighttime arousal was better in fluoxetine (41.4%) versus (14.3%) in desmopressin group, p=0.02, at the 1st month, decreased in a fluoxetine (31%) versus (14.3%) in desmopressin group p=0.13, at the 3rd month.

CONCLUSIONS

Fluoxetine 20 mg was non-inferior to desmopressin 0.2 mg for the management of PMNE. Fluoxetine improved nighttime arousal significantly at the 1st month. This improvement became insignificant at the 3rd month.

THE USE OF ADJUNCT ALPHA-2 AGONISTS FOR DDAVP REFRACTORY NOCTURNAL ENURESIS: A RETROSPECTIVE MULTI-INSTITUTIONAL REVIEW

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PURPOSE

Desmopressin (DDAVP) is widely recognized as the first-line medical treatment for nocturnal enuresis (NE). There is recent work that shows that use of Alpha 2 Agonist may be useful for nocturnal enuresis. Additionally, recent literature points to the locus Coeruleus as a critical area in nocturnal enuresis. Norepinephrine is secreted by LC and it is NE that is raised in the brain with alpha 2 Agonists. Aim of our study was to evaluate the effect of combination therapy for refractory patients to single therapy with DDAVP by adding an Alpha 2 Agonist.

MATERIAL AND METHODS

A retrospective chart review of the combined database of 2 institutions for patients with NE was performed. All patients who were initially prescribed DDAVP monotherapy for NE, followed by an alpha 2 agonist, either Guanfacine (G) or Clonidine (C), were included. Effectiveness was examined by comparing pre-and post-treatment wet nights per week and Vancouver Symptom Scores (VSS).

RESULTS

46 patients were identified who were prescribed either G or C in combination with DDAVP after failed monotherapy. Of these patients, the average age was 11.46 years, with 34 males and 12 females. Average wet nights per week while on DDAVP alone was 4.6, which decreased to an average of 3.1 after DDAVP and an alpha 2 agonist. In the 31 patients who were compliant with dual therapy, 32.3% (10) of patients had a complete response (0/7 nights wet), 35.4% (11) had a partial response (<4/7 nights wet), 32.3% (10) had no response. The average pretreatment VSS was 3.8 compared to a posttreatment VSS of 2.9.

CONCLUSIONS

Patients started on a combination of DDAVP and C or G after failed monotherapy had a complete response 32% of the time, with some benefit to treatment at a rate of 68%. Our findings with imipramine and these results with alpha 2 agonists shed further evidence that frontal lobe norepinephrine levels are the likely mechanism to correct refractory NE.

ONABOTULINUMTOXINA FOR PEDIATRIC NON-MONOSYMPTOMATIC ENURESIS: A SAFE AND EFFECTIVE ALTERNATIVE?

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PURPOSE

Non-monosymptomatic enuresis (NME) is commonly associated with overactive bladder (OAB) and lower urinary tract dysfunction. Standard management includes urotherapy, anticholinergics, and desmopressin, yet a subset remains refractory. OnabotulinumtoxinA (BoNT-A) has been proposed for refractory OAB, but its efficacy in pediatric NME remains unclear. This study evaluates the clinical outcomes and safety of intradetrusor BoNT-A in refractory NME.

MATERIAL AND METHODS

A prospective database of 1,495 NME patients treated between 2017 and 2024 was reviewed. Refractory patients were defined as those with persistent nocturnal enuresis despite ≥ 6 months of full medical therapy with confirmed adherence, monitored via an electronic medication dispensing tracker. All underwent urodynamic studies, and those with OAB were offered intradetrusor BoNT-A injections. Treatment response was classified as complete (absence of nocturnal leaks), partial ($\geq 50\%$ improvement), or no response ($< 50\%$ improvement).

RESULTS

Of the 1,495 patients, 15 were refractory, with a pre-treatment PdetMax of 55.4 cmH₂O. After the first injection, 46% (7/15) achieved complete resolution, 46% (7/15) had partial response, and one patient (6%) did not respond. Three complete responders required a second injection, and one needed a third. Among partial responders, one required two additional injections. Follow-up urodynamic studies in 80% showed a PdetMax decrease to 22.5 cmH₂O before the second injection. The median interval between injections was 18 months (8-35 months) and 11 months (6-24 months) for third injections. No adverse events or complications were reported.

CONCLUSIONS

BoNT-A is a safe and effective option for refractory pediatric NME, achieving 94% symptom relief. Further studies are needed to define its role in pediatric enuresis management.

★ VAGINOPLASTY USING A MODIFIED MCINDOE TECHNIQUE WITH EXTRACELLULAR MATRIX AND 3D-PRINTED MOULD: A STEP-BY-STEP VIDEO

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PURPOSE

The primary surgical technique in our institution for vaginoplasty in Rokitansky Syndrome (RS) has been coloplasty. We present a modified McIndoe technique, incorporating a graft of decellularized porcine small intestinal submucosa (SIS) with a 3D-printed mold to facilitate graft placement.

MATERIAL AND METHODS

We present a novel technique performed in a 17-year-old female patient with RS. It involved a SIS extracellular matrix positioned on a 3D-printed polylactic acid mold designed to prevent graft contraction and maintain both width and depth.

Surgical Technique: The vesico-rectal space was dissected meticulously, ensuring careful avoidance of the urethra and rectum. A vaginal canal measuring 9 cm in length and 4 cm in diameter was created. A 3D-printed vaginal mold, covered with a sterile condom, was inserted with the graft, sutured at its free edges positioned around the mold. It was then secured to the introitus circumference with interrupted non-absorbable sutures.

RESULTS

Four days postoperatively, the mold was removed, revealing a vital and adherent graft. Daily vaginal dilations were initiated. At first the vaginal canal exhibited adequate length but a minor constriction in its distal third, which was resolved by adjusting the size of the dilators. Aesthetic outcomes were satisfactory. A two-month vaginostomy demonstrated a 9 cm neovagina with favorable diameter and early re-epithelization.

CONCLUSIONS

This modified McIndoe technique with SIS graft demonstrated excellent aesthetic results with minimal scarring and invasiveness. The integration of 3D printing technology facilitated the creation of customized molds, enhancing surgical precision. Long-term follow-up will assess functional and aesthetic outcomes.

CAUSAL BIDIRECTIONAL RELATIONSHIPS BETWEEN BEHAVIOUR/EMOTIONAL PROBLEMS AND ENURESIS: A TWO-SAMPLE MENDELIAN RANDOMIZATION STUDY

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PURPOSE

Cross-sectional studies provide strong evidence for comorbidity between enuresis and behaviour and emotional problems, but the direction of the relationships is unclear. In this study we examined evidence of bidirectional causal relationships between enuresis and behaviour/emotional problems.

MATERIAL AND METHODS

We performed bidirectional two-sample Mendelian Randomization using publicly available GWAS summary statistics to examine evidence for causal bidirectional relationships between enuresis and depression, anxiety, attention deficit hyperactivity disorder (ADHD), ADHD and comorbid disruptive behaviour disorders (DBD), and neuroticism score. Sample sizes ranged from 83,566 to 1,035,760 participants of European ancestry. Causal estimates were calculated using the inverse variance weighted (IVW) method and additional sensitivity analyses were conducted to evaluate the validity of the causal relationships.

RESULTS

Genetic liability to ADHD (IVW OR 1.16, [95% CI 1.02-1.30]) and depression (OR 1.34[1.17-1.53]) increased the odds of enuresis. Genetically predicted neuroticism score also increased the odds of enuresis (OR 1.17[1.04-1.32]). Genetic liability to enuresis increased the odds of ADHD (OR 1.11[1.00-1.22] and ADHD/DBD (OR 1.28[1.03-1.59]) but there was no causal effect of enuresis on anxiety, depression, or neuroticism score. Sensitivity analyses were not always concordant with the IVW estimates and results should be interpreted with caution.

CONCLUSIONS

Our findings suggest causal effects of ADHD, depression, and neuroticism on enuresis. Enuresis may also have a causal effect on ADHD and ADHD/DBD. Limitations include the lack of generalisability to other ethnicities, partial sample overlap in some of the exposure and outcome GWAS, and lack of discrimination between enuresis subtypes in the enuresis GWAS.

RELATION BETWEEN CHILDREN'S PSYCHOLOGICAL STRESS DUE TO NOCTURNAL ENURESIS AND TREATMENT RESULTS: A SINGLE-CENTER PROSPECTIVE COHORT STUDY

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PURPOSE

The treatment of nocturnal enuresis(NE) has been focused on alleviating the symptoms. NE is closely related to mental well-being, and it can result in feelings of shame, anxiety, and low self-esteem, potentially leading to personality development disorders during adolescence. Therefore, proactive treatment for NE is necessary from the age of 5 onwards to foster healthy personality development. This study aimed to determine the effect of psychological stress due to NE on the outcome of treatment in children.

MATERIAL AND METHODS

We collected data on 257 children with NE(mean age, 7.8 ± 2.0 years). An interview was performed with a questionnaire to evaluate the presence of psychological stress (shame, upset, anger, depression, and fear) with parents and children, together. Based on the child's statements, we grouped patients into two groups; with or without psychological stress for NE (the stress group and the non-stress group). All patients were treated in the same standard way. Treatment results were assessed with an enuresis diary.

RESULTS

In the stress group, shame (50.6%), disappointed (40.5%), and anxiety (41.4%) were common. The other conditions, such as mean age, height, weight, BMI, and gender were similar in stress group (206 cases, 80.2%) and non-stress group (51 cases, 19.8%). The severity and type of NE were also similar in both groups. Moreover, the response rate at 3 months and final visit showed statistically no significant differences in both groups ($p=0.528$ and 0.826). However, the proportion of children with complete response was observed to be higher in the non-stress group at final visit ($p=0.205$).

CONCLUSIONS

Although almost 80% of children had psychological stress on NE, this psychological stress on NE in children before treatment did not affect treatment outcomes.

COMORBIDITIES OF CHILDREN WITH NOCTURNAL ENURESIS IN THE ABCD DATASET

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PURPOSE

Nocturnal enuresis (NE) often co-occurs with other mental health conditions, such as anxiety disorders and ADHD, though the prevalence and comorbidity patterns remain unclear. The largest studies on continence problems and mental health issues have been conducted with cohorts of around 7000 patients (Joinson et al., European Urology, 2023; 84: 463-470). This study aims to analyze a large-scale dataset in excess of 10,000 patients to identify mental health diagnoses that co-occur with NE.

MATERIAL AND METHODS

Using the Adolescent Brain Cognitive Development (ABCD) dataset, we formed two groups: one with NE and one control group without NE. We excluded children with incomplete clinical data, severe brain conditions, a history of parental drug use, drug use during pregnancy, symptoms of encopresis, daytime wetting, constipation, or parental mental health issues. Data was collected from patients with reported bedwetting, as reported by parents. Mental health comorbidities were identified using the parental KSADS interview. Chi-squared tests were performed, with results corrected for multiple comparisons.

RESULTS

A total of 1,672 9 YO patients with nocturnal enuresis (NE) were identified, along with 9,586 control participants. Our findings indicate that NE significantly co-occurs with social anxiety (NE = 65; CTL = 631 OR=0.57), phobias (NE = 526; CTL = 3,654, OR=0.75), ADHD (NE = 152; CTL = 1,272, OR=0.65), and self-injurious behavior (NE = 50; CTL = 599, OR=0.46) (all $p < 0.001$).

CONCLUSIONS

These findings of co-occurring mental health issues along with our prior findings on the same cohorts neurocorrelates is suggestive that NE is an extension of the symptoms of the these aforementioned neuropsychiatric diagnosis. This underscores the importance of improving diagnostics and raising awareness that NE patients may be at increased risk for neuropsychiatric diagnosis and may need in some cases targeted therapy to address the underlying problem and not just NE.

SLEEP AND NEUROCOGNITIVE FUNCTIONING IN NOCTURNAL ENURESIS

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PURPOSE

The aim of the current study was to investigate whether sleep quality and neurocognitive functioning is impaired in children with nocturnal enuresis compared to continent reference children

MATERIAL AND METHODS

Children with NE (n=60) were clinically assessed for NE and for inclusion and exclusion criteria. Children participated in neurocognitive assessment as well as sleep assessment (i.e., polysomnography), while parents completed questionnaires and voiding diaries during daytime and nighttime. Neurocognitive assessment was carried out prior to sleep assessment at baseline before treatment onset for NE. Continent controls were included for comparison and multiple linear regression was used.

RESULTS

Sleep:

Children with NE had a significantly higher mean CAi compared to reference children, $\Delta_{adj.}$: 2.1 /hour [95% CI 0.5 to 3.6] and more N1 sleep (% of total sleep time), $\Delta_{adj.}$ was 5.0 % [95% CI 2.5 to 7.5], $p < 0.05$.

Neurocognitive functioning:

Children with NE recalled significantly fewer digits backwards compared to children in the reference group $\Delta_{adj.}$: -0.6 and 95% CI (-0.9;-0.2), $p < 0.05$. Furthermore, children with NE tended towards lower mean accuracy on the 2-back task than children in the reference group, $\Delta_{adj.}$: -0.08, 95% CI (-0.16;0.0), $p = 0.06$. Finally, parent ratings on the WM subscale of the CHEXI were significantly higher in the NE group compared to the reference group, $\Delta_{adj.}$: 6.0 and 95% CI (2.1;9.8), $p < 0.05$, indicating more WM impairment in children with NE.

Children with NE had a significantly higher percentage of choices involving a small reward than children in the reference group, $\Delta_{adj.}$: 29.2 %; 95% CI (16.3;42.2), $p < 0.05$.

CONCLUSIONS

Children with NE were found to have more cortical arousals and N1 sleep compared to reference children, but group differences were not found with respect to PLMi and sleep apnea. Children with NE had lower working memory function and made more impulsive choices compared to children in the reference group.

TREATMENT OUTCOME OF NIGHTTIME CONCENTRATION ABILITY IN NOCTURNAL ENURESIS: A SINGLE-CENTER PROSPECTIVE COHORT STUDY

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PURPOSE

Loss of circadian rhythm in nocturnal ADH is a primary cause of nocturnal enuresis (NE). The nocturnal ADH effect is measured by the gap in urine specific gravity (SG) between first-morning and daytime urine. This study evaluates treatment response in NE based on the SG gap before treatment.

MATERIAL AND METHODS

We analyzed 256 children with NE (mean age 7.9 ± 2.1 years), dividing them into two groups based on SG: normal group (first-morning urine SG > daytime urine SG, 156 cases) and abnormal group (first-morning urine SG \leq daytime urine SG, 100 cases). All patients were treated with urotherapy and pharmacological treatment. Enuresis frequency and response rates were assessed at 3 months, 6 months and at the end of treatment.

RESULTS

SG differences (first-morning urine SG - daytime urine SG) between groups were significant (normal: 0.010 ± 0.007 vs. abnormal: -0.007 ± 0.006 , $p < 0.001$). Enuresis frequency before treatment was 4.7 ± 1.9 times/week (normal: 4.8 ± 1.9 vs. abnormal 4.4 ± 1.9 times/week, $p = 0.127$). At 3 months, enuresis frequency was lower in the abnormal group (normal: 2.9 ± 2.5 vs. abnormal 2.2 ± 2.2 times/week, $p = 0.121$), with a better treatment response (normal $47.2 \pm 37.0\%$ vs. $56.2 \pm 31.4\%$, $p = 0.092$). At 6 months, the abnormal group showed significantly lower frequency (normal: 2.0 ± 2.2 vs. abnormal: 1.2 ± 1.7 times/week, $p = 0.025$) and higher response rate (normal: $63.2 \pm 33.0\%$ vs. abnormal: $73.3 \pm 24.9\%$, $p = 0.057$). At the end of treatment, no significant difference was observed in frequency (normal: 1.8 ± 2.2 vs. abnormal: 1.3 ± 1.7 , $p = 0.188$) or response rate (normal: $66.3 \pm 36.6\%$ vs. abnormal: $71.8 \pm 30.6\%$, $p = 0.438$).

CONCLUSIONS

Children with NE and a lower first-morning urine SG than daytime urine SG showed a better treatment response, suggesting that a disrupted circadian rhythm of nocturnal ADH may improve treatment outcomes. Larger studies are needed to further investigate the etiology.

S40: NEUROGENIC BLADDER 2

Moderators: Josine Quaedackers (NL), Alice Faure (FR)

Main Programme on Saturday 6, September 2025, 15:25 - 16:05

15:25 - 15:28

S40-1 (OP)

CUMULATIVE ANTIBIOTIC EXPOSURE IN THE PEDIATRIC SPINA BIFIDA POPULATION

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PURPOSE

Spina Bifida (SB) is a common congenital condition often requiring frequent antibiotic use, but cumulative antibiotic exposure in pediatric SB population remains underexplored.

MATERIAL AND METHODS

This retrospective cohort study utilized MarketScan insurance claims data (2013 - 2021) to compare cumulative antibiotic exposure in SB patients (ages 0-17) with age-matched controls. Cohort selection criteria included a diagnosis of SB in cases with 5:1 age-matched controls. Infections linked to antibiotic use were categorized by organ systems.

RESULTS

The cohort of 11,478 SB cases and 50,852 controls included 47% males in the SB group and 50% in controls. SB patients had 1.4 times higher antibiotic use than controls (mean: 8.1 vs. 6.0 prescriptions; $p < 0.0001$) and 1.6 times higher repeat courses within one week (2.8 vs. 1.8; $p < 0.0001$). Among prescriptions, 95 - 96% were tied to documented infections. SB patients were more likely to receive antibiotics for urinary system infections (32% vs. 8%; $p < 0.0001$), while controls more frequently received antibiotics for upper respiratory infections (64% vs. 55%, $p < 0.0001$) and otitis media (32% vs. 29%, $p < 0.0001$). Antibiotics for SB patients were more commonly prescribed in non-urgent ambulatory care settings (18% vs. 2%; $p < 0.0001$), whereas controls more frequently received antibiotics in urgent care settings (5% vs. 1%; $p < 0.0001$).

CONCLUSIONS

Pediatric SB patients experience significantly higher antibiotic exposure, primarily for urologic infections, and are at increased risk for repeat dosing. Future work will evaluate variabilities in antibiotic utilization and identify improvement strategies.

WITHDRAWN: DOES VIDEO-URODYNAMICS INCREASE THE INCIDENCE OF SYMPTOMATIC URINARY TRACT INFECTIONS AND ANTIBIOTIC USAGE WHEN COMPARED TO VOIDING CYSTOURETHROGRAM ALONE?

CHARACTERIZATION OF THE URINARY AND INTESTINAL MICROBIOME IN CHILDREN AND YOUNG ADULTS WITH SPINA BIFIDA: A MULTI-CENTER STUDY

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PURPOSE

Improving care for urinary tract infections (UTI) in spina bifida (SB) patients requires a better understanding of the resident microbiome. This study aims to characterize the composition and diversity of the urinary and intestinal microbiomes in patients with SB.

MATERIAL AND METHODS

Patients ages 0-30 with SB were enrolled prospectively between 10/2023 to 1/2025 from two SB clinics. Catheterized urine and stool samples were obtained. Expanded quantitative urine culture (EQUC) and 16S rRNA amplicon sequencing were performed on these specimens. Descriptive analyses of demographic, clinical and EQUC data were performed. Sequencing reads were bioinformatically decontaminated prior to analysis.

RESULTS

Ninety-nine subjects met inclusion with a mean age of 7.1 (range 0-27) years old. Fifty-one (50.5%) subjects were male and 91 (92%) had a diagnosis of myelomeningocele. Fifty-four (54.5%) participants performed clean intermittent catheterization and 23 (23%) had a culture-proven UTI within the past year. Of the 128 urine samples obtained, 104 (84.4%) had bacterial growth on EQUC. Bacterial DNA was detectable in 28/30 (97%) urine specimens and 28/28 (100%) stool samples on amplicon sequencing. Escherichia genera was present in 20/30 (67%) of urine specimens and was the dominant genera in 50% of samples. Subjects with a history of prior UTI had greater abundance of Escherichia in the stool than those without a history of UTI ($p < 0.05$). Subjects on CIC had greater abundance of Staphylococcus spp. in the urine relative to those not on CIC ($p < 0.05$).

CONCLUSIONS

Individuals with SB have high rates of bacteria present on both EQUC (84%) and amplicon sequencing (97%), but little diversity in their urobiome. Escherichia is abundant within the urine of individuals with SB and significantly more abundant in the stool of individuals with prior UTI.

15:34 - 15:44

Discussion

15:44 - 15:47

S40-4 (OP)

DIAGNOSTIC TEST CHARACTERISTICS OF RENAL ULTRASOUND FINDINGS FOR BLADDER HOSTILITY IN SPINA BIFIDA

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PURPOSE

Spina bifida (SB) can cause neurogenic bladder dysfunction and renal deterioration. Guidelines recommend renal ultrasound (RUS) for surveillance, but its utility in predicting bladder hostility remains uncertain. We evaluated the diagnostic test characteristics of RUS findings for bladder hostility in youth with SB.

MATERIAL AND METHODS

We conducted a retrospective cohort study of patients with myelomeningocele followed at a pediatric SB clinic who had a RUS within three months of urodynamic studies (UDS). Equal-sized groups of urodynamic-RUS dyads were created by randomly selecting ~100 from each of four UDS risk categories. RUS parameters included hydronephrosis, thinned parenchyma, hypoplasia, and scarring. Bladder hostility was defined as end-fill pressures/detrusor leak point pressures 40cmH₂O or greater. Sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV), and overall diagnostic accuracy (AUC) of RUS parameters for bladder hostility were calculated with adjustment for patient clustering. Sensitivity/subgroup analyses were performed.

RESULTS

397 urodynamic-RUS dyads were included from 205 unique patients. Median age was 8.1 years; 70% had ventricular shunts. Any hydronephrosis demonstrated an overall sensitivity/specificity/PPV/NPV/AUC of 51/56/26/80/54%, respectively, and a sensitivity/specificity/AUC of 67/50/60% in non-ambulatory patients. In sensitivity analyses, high-grade hydronephrosis (SFU 3-4) had a sensitivity/specificity/AUC of 10/94/50%. The presence of any RUS abnormality yielded a sensitivity/specificity/AUC of 50/52/54%. In those with RUS-bladder volume >75% of UDS-bladder capacity, any hydronephrosis conferred a sensitivity/specificity/AUC of 83/47/63%.

CONCLUSIONS

RUS should not be used alone as a screening tool to identify bladder hostility in youth with SB due to limited sensitivity and diagnostic utility. UDS remains an essential tool for surveilling at-risk bladders.

THE SEARCH FOR THE HOLY GRAIL: IDENTIFYING BIOMARKERS TO PREDICT INFECTION PROGRESSION AND URINARY TRACT DETERIORATION IN NEUROGENIC BLADDERS

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PURPOSE

Our objective was to evaluate if certain urine biomarkers could predict future urinary tract deterioration or infection progression in a neurogenic bladder population.

MATERIAL AND METHODS

In 2014, catheterized urine samples were obtained from patients with neurogenic bladders at the time of routine urodynamics or renal ultrasound. These samples were separated into colonized and sterile groups based on lack of symptoms and culture results. ELISAs were performed for BD-1, HIP/PAP, DEF5, LL37, NGAL, IL-6, and Upk3a. Patient demographics from 2015 – 2024 were collected and included progression of infection (incidence of urinary infections, complicated infections requiring hospitalization) and urinary tract deterioration (bladder medication changes, need for surgical intervention, worsening of urodynamics or upper tract imaging).

RESULTS

A total of 86 urine samples were collected and analyzed by ELISA —48 were colonized and 38 were sterile. There was a significantly higher rate of UTIs between the time of urine collection and last follow-up in the colonized group (67% vs 42%, p=0.014). In the sterile group, BD-1 was significantly elevated in patients who had infection progression (671.7 ng/mg vs 298.2 ng/mg, p=0.039) or urinary tract deterioration (397.2 ng/mg vs 139.9 ng/mg, p=0.004). In the colonized group, BD-1 was higher in patients with both infection and bladder progression compared to those without, but not significantly.

Sterile Urine	AMP	Overall	No	Yes	P-value	Metrics
Bladder progression	BD-1	307.33 (123.07, 671.7)	139.97 (37.17, 316.12)	397.20 (303.39,1061.62)	0.004	Median (Q1, Q3)
Infection Progression		307.33 (123.07, 671.7)	298.20 (89.94, 397.20)	671.70 (315.82, 1061.62)	0.039	

CONCLUSIONS

This is the first study to our knowledge that shows the potential power of a biomarker to predict infection and progression of bladder dysfunction in patients with a neurogenic bladder. Specifically, we found BD-1 could potentially be used as a prognostic marker of long-term urinary tract outcomes.

LESS IS MORE: TRANSDISCIPLINARY PROGRAM FOR NEUROGENIC BLADDER AND BOWEL LEADS TO FEWER ANNUAL PATIENT VISITS

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PURPOSE

Successful management of bladder and bowel dysfunction (BBD) in children with congenital/neurological disorders is critical for quality of life. In most institutions, BBD management is fragmented, requiring separate visits involving colorectal surgeons, urologists, and GI/motility. Siloed care leads to multiple appointments and lacks coordination amongst teams, leaving families unsure of who to contact with issues. We hypothesized that creation of a trans-disciplinary clinic for children with BBD would lead to fewer office visits (OV) and ED visits per year.

MATERIAL AND METHODS

A monthly trans-disciplinary clinic Neuromodulation, Bowel, and Urology Alliance (NEBULA) was started with funding from our hospital. NEBULA consisted of attending physicians (colorectal surgeon, urologist, gastroenterologist), nurse practitioners and a nurse coordinator.

We reviewed data from all NEBULA patients seen within the first year of the program. We recorded OVs, ED visits, patient/family phone calls and messages in the year prior to establishing care with the NEBULA program and the year following. Pre-NEBULA and post-NEBULA values were analyzed using Wilcoxon signed-rank test.

RESULTS

Thirty patients were seen in NEBULA. The median number of OVs per year prior to NEBULA was 3 and decreased significantly to 1.7 while in the NEBULA program ($p < 0.001$). The mean number of ED visits pre-NEBULA was 1 which significantly decreased to 0.4 ($p = 0.03$). The median of calls/messages was 7.5 per year pre-NEBULA and this significantly increased to 31 ($p < 0.001$).

CONCLUSIONS

With a dedicated team, coordinated care and resources, the number of patient visits can be decreased. With proper triaging and communication, the frequency of yearly ED visits was decreased.

S41: NEUROGENIC BLADDER 3

Moderators: Maria Escolino (IT), Anil Takvani (IND)

Main Programme on Saturday 6, September 2025, 16:05 - 16:50

16:05 - 16:08

S41-1 (OP)

UROLOGICAL ANOMALIES, UROFLOW PATTERNS AND URINARY CONTINENCE IN CHILDREN WITH CLOSED SPINAL DYSRAPHISM - DATA FROM FOUR YEARS OF A MULTIDISCIPLINARY NEURO-UROLOGY CLINIC

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PURPOSE

Closed spinal dysraphism (CSD) refers to a heterogeneous group of skin-covered congenital spinal anomalies caused by incomplete closure of the neural tube and anomalous development of the caudal cell mass during embryogenesis. The aim of this study was to analyse the relationship between CSD and urological anomalies. Secondary outcomes included assessment of urinary continence and uroflow patterns in this cohort.

MATERIAL AND METHODS

A retrospective review was performed of our database of children attending the National CSD Clinic over a 4-and-a-half-year period (since its inception in June 2020, to January 2025). All baseline urinary tract ultrasounds (USS) and uroflows were reviewed by three paediatric surgeons. Continence and Uroflow patterns were assessed according to the International Children's Continence Society Standardization document.

RESULTS

209 patients attended the CSD Clinic. 16 were excluded (did not meet criteria for CSD). 116(60%) were female. Mean age was 8.6 years. Baseline USS was reviewed in 185(96%). Urological anomalies were detected in 29(15.6%). The most common abnormal USS finding was renal pelvis dilatation in 15(8.1%), followed by ureteric dilatation in 2(1%), horseshoe kidney in 3(1.6%), and crossed fused ectopia in 2(1%). 62(32%) patients had urinary incontinence, with 60(31%) requiring CIC, 40(20.7%) anticholinergic medications and 30(15.5%) rectal washouts. Uroflow was performed in 55% of patients, and was abnormal in 51% of these, with a plateau-shaped curve being the most common abnormality.

CONCLUSIONS

Urological anomalies were identified in 15.6% of children with CSD. 32% of children with CSD are incontinent and require active urological management. Uroflow can be used as a screening test to identify those children with CSD who may require urological management.

COMPARISON OF ESTIMATED GLOMERULAR FILTRATION RATE EQUATIONS AGAINST MEASURED GLOMERULAR FILTRATION RATE IN PEOPLE WITH SPINA BIFIDA: THE PROSPECTIVE RENAL ASSESSMENT IN MYELOMENINGOCELE (PRAM) STUDY

David CHU ¹, Josephine HIRSCH ¹, Lynn HUANG ², Theresa MEYER ¹, Danielle HERRERA ¹, Cameron ARKIN ³, Ilina ROSOKLIJA ¹, Kavita HODGKINS ¹, Susan FURTH ⁴, Diana BOWEN ¹, Tamara ISAKOVA ⁵, Elizabeth YERKES ¹ and Earl CHENG ¹

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PURPOSE

People with myelomeningocele are at high risk for developing chronic kidney disease (CKD). However, current estimated glomerular filtration rate (eGFR) equations are potentially inaccurate in this patient population. We obtained gold-standard measured glomerular filtration rate (mGFR) to identify the best-performing eGFR equations.

MATERIAL AND METHODS

A prospective cohort study was performed from 1/2019 until 12/2024 at a single pediatric center. Participants aged 6 years or older with myelomeningocele completed initial serum laboratory assessment then an iohexol plasma clearance test to calculate eGFR and mGFR, respectively. The performance of fifteen current eGFR equations was compared against mGFR using bias (eGFR-mGFR), accuracy (P30 and P10 reflecting proportions of eGFR within 30 and 10% of mGFR, respectively), correct CKD stage classification, and Bland-Altman plots.

RESULTS

A total of 98 iohexol plasma clearance tests were completed in 77 unique participants. Median age was 15.2 years (range 6.2-32.7), 64% of participants were female, 78% had ventricular shunts, 25% were non-ambulatory, and 23% had a prior bladder augmentation surgery. Median mGFR was 94.3 mL/min/1.73m² (IQR 84.5-110.0) with 37% of the cohort having mGFR<90 mL/min/1.73m². Of the fifteen eGFR equations, the CKiD U25 cystatin-C equation conferred the lowest bias, highest P30 and P10, highest correct CKD stage classification, and visually best Bland-Altman plots in the overall cohort and in subgroups stratified by mGFR=90 mL/min/1.73m².

CONCLUSIONS

In our prospective study with gold-standard mGFR testing, the CKiD U25 cystatin-C equation had the best performance and should be used to assess kidney function in people with myelomeningocele.

DOES HYDRONEPHROSIS AT PRESENTATION AFFECT THE PROGNOSIS OF RENAL FUNCTION IN MYELOMENINGOCELE PATIENTS? A 10-YEAR FOLLOW-UP OF SPINA BIFIDA COHORT

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PURPOSE

We evaluated the impact of hydronephrosis (HN) at presentation on the prognosis of renal function and the occurrence of related urinary problems.

MATERIAL AND METHODS

We retrospectively reviewed spina bifida patients' charts from 2008-2024, who completed at least 10 years of follow-up. Patients' demographics in addition to ultrasound, voiding cystourethrogram, urodynamic studies, kidney function workup and urodynamic data, were collected. Data was collected at the first and last follow-up. Furthermore, we collected prescribed medications, the incidence of UTI and required surgical intervention. The estimated glomerular filtrations rate (eGFR) was calculated using this formula: $GFR = 175 \times \text{Serum Cr}^{-1.154} \times \text{age}^{-0.203} \times 1.212$ (if patient is black) $\times 0.742$ (if female). Thereafter, eGFR was furtherly categorized.

RESULTS

A total of 115 patients were included in this study (64 had no hydronephrosis at presentation, while 51 patients with HN). Of those with HN, 23 (45%) had unilateral low-grade HN (Grade 1 and 2), 6 (11.8%) had unilateral High-grade HN (grade 3 and 4), 13 (25.5%) had bilateral low-grade-HN, 6 (11.8%) had bilateral high-grade HN while the remaining had bilateral High-grade and Low-grade HN. Those presented with HN had significantly higher high-grade VUR (16 patients) compared to 6 patients in the Non-HN group ($p < 0.005$). Moreover, the occurrence of recurrent UTI was significantly associated with HN (4(6.3%) and 13 (25.5%) respectively, $p = 0.004$). No significant difference between both groups in terms of UDS findings, need for surgical intervention and incidence of renal impairment (Table).

Parameter	No-Hydronephrosis n(%)	Hydronephrosis n(%)	P
UDS_Small_Bladder	34(53.1)	23(45.1)	0.39
Detrusor_Overactivity	14(21.9)	17(33.3)	0.16
Hostile_bladder(DLPP>40cmH ₂ O)	25(39)	18(35.2)	0.68
Poor_compliance	30(46.9)	21(41.2)	0.54
Surgical_intervention	11(17.2)	8(15.7)	0.83
eGFR_(G3a-G5)	2 (3.2)	2 (3.8)	0.81

CONCLUSIONS

Patients who had HN at presentation had a higher incidence of high-grade VUR and an elevated risk of recurrent UTI. However, no difference was observed regrading UDS findings or renal impairment risk.

UTILITY OF BLADDER SHEAR WAVE ULTRASOUND ELASTOGRAPHY AS A NON-INVASIVE INVESTIGATION IN CHILDREN WITH NEUROGENIC BLADDER

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PURPOSE

Bladder pathologies including neurogenic bladder (NB) can cause alterations in the tissue elasticity. We aim to evaluate the utility of shear wave elastography (SWE) in children with NB. Also, we intend to evaluate whether SWE measurements correlate with current standard investigations

MATERIAL AND METHODS

This single centre prospective cohort study included patients with NB and healthy controls. During bladder SWE, the Young's modulus of elasticity (YME) was measured along the anterior wall at full-bladder and post-void states. Median SWE measurements were compared between patients and controls. Also, the median SWE values (at both states) were correlated with different upper and lower urinary tract variables from routine baseline investigations including ultrasound, scintigraphy studies, micturating cystourethrogram and urodynamic study

RESULTS

A total of 42 healthy controls and 44 patients were enrolled in the study. At full-bladder state, the median YME was significantly different between patients vs. controls (9.95 vs. 7.5 kPa; $p=0.0006$). Similarly, the median YME at post-void state was significantly higher in patients vs. controls (9.3 vs. 6.8 kPa; $p=0.023$). However, no significant correlation could be established between YME (full-bladder or post-void state) and variables including hydroureteronephrosis, vesicoureteral reflux, kidney scarring, low GFR, bladder capacity, bladder pressure, compliance, uninhibited detrusor contractions

CONCLUSIONS

Children with NB have significantly higher values of YME compared to controls. Therefore, SWE can be a useful screening tool for identifying NB among children with lower urinary tract symptoms. However, the lack of significant correlations between YME and upper or lower-urinary tract variables suggest that SWE cannot replace the current diagnostic and prognostic tools

A SURVIVAL CURVE FOR LOWER URINARY TRACT RECONSTRUCTION ASSOCIATED WITH IN-UTERO MYELOMENINGOCELE REPAIR: RESULTS FROM A PROSPECTIVE ONE-INSTITUTION ANALYSIS SINCE 2011.

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PURPOSE

Lower urinary tract reconstruction represents end-stage bladder function. We assessed a prospective cohort of in-utero operated myelomeningocele patients starting in 2011 to create a Kaplan-Meyer survival curve for non touched bladder versus operated bladder in a timeline according follow up.

MATERIAL AND METHODS

The assessed following parameters: MMC in-utero repair, urodynamic pattern (normal, hypocontractile, incontinent and high risk), initial and final treatment and age at surgical indication. The probability of surgery (event/record) was calculated using the Kaplan-Meier survival curve. The surgical procedure was considered a "census". A "censored case" was considered one in which the surgical approach did not occur.

RESULTS

We found 103 patients with the first evaluation occurring below 12 months of age. Mean age at first evaluation was 3 months and mean follow-up was 39 months. Initial clinical evaluation showed hydronephrosis (n=20 : 19,4%), vesicoureteral reflux (n=18 : 17,5%). Bladder pattern according to the Leal da Cruz classification was: high-risk in 51 (49,5%), incontinent in 23 (22,3%), hypocontractile in 8 (7,8%) and normal in 21 (20,4%). Surgery was performed in 13 patients. The Kaplan-Meyer bladder survival curve showed the average time to be treated by surgery was 42,8 months.

CONCLUSIONS

Despite treatment, we found a high incidence of patients with a high risk pattern (39.8%), an incidence of 12.6% surgery at 42.8 months. After 80 months of follow-up we observed a drop in the survival of untouched bladder to less than 50% at 100 months of follow-up

RENAL FUNCTION AND VIDEOURODYNAMICS FINDINGS OF DETRUSOROTOMIES OVER A 20 YEAR PERIOD: A TWO CENTRE STUDY

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PURPOSE

A recent systematic review has demonstrated that detrusorectomy enhances bladder compliance in pediatric neurogenic bladders. The primary aim of this study was to review the long-term results of the procedure. Secondary aims were to compare the pre and post-operative video-urodynamics (VUDs), renal function and use of anticholinergics.

MATERIAL AND METHODS

Between 10/2004-3/2024, 51 patients, age at surgery 9.6 y (mean), underwent either detrusorectomy (15) or detrusorotomies (36) in two tertiary pediatric urology departments. There were 34 females. All patients had neurogenic bladders, 28(55%) due to myelomeningocele. The procedures were performed by either a sagittal myotomy (29) or sagittal + coronal (22) with an open technique (45) or robotic (6).

RESULTS

Pre and post operative VUD were available in 48 patients. Compliance – ($\Delta V/\Delta P$ 80% at 80% of bladder filling) and bladder capacity were pre-operatively 10 ml/cm H₂O and 190 mls respectively, post-operatively 15.8 ml/cm and 346 mls. Detrusorectomy failed in 12(24%) patients requiring ileocystoplasty and one patient had bladder perforation on two occasions. 46(90%) of the patients were on anticholinergic pre and 41(80%) post-operatively. Most common complications included intra-op mucosal perforation 24(47%), post-op bladder perforation (2), haematoma (2), stones (1), vesicovaginal fistula (1), bleeding (1). Creatinine was normal in 47 patients.

CONCLUSIONS

Detrusorotomy improves bladder compliance and capacity in neurogenic bladders. Intraoperative mucosal perforation occurs in 47% of patients. Other complications may occur in 14% of the patients. A quarter of the patients will require bladder augmentation while 80% of the patients still need anticholinergic medication in the long term.

VD-1 (VD without presentation)

EPISPADIAS REPAIR IN MALES WITH CLOACAL EXSTROPHY: A SERIES OF SIX CASES

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INTRODUCTION

Cloacal exstrophy (CE) is a complex congenital anomaly involving multiple organ systems. Most outcomes are focused on bowel integrity, abdominal wall closure, bladder capacity and dryness. Moreover, males with CE were often thought to have little viable corporal tissue. This case series highlights the potential for an epispadias repair with six male CE patients during their 2nd stage of closure.

MATERIAL AND METHODS

A prospectively maintained database and video archive was used to identify males who underwent a second-stage CE repair following the initial colostomy and bladder plate reapproximation in the first week of life. Corporal dissection was performed in the second stage to reconstruct a phallic structure.

RESULTS

From 2012 to 2023, 12 patients with CE were treated at a single institution, including 8 males, and of these, 6 underwent a second stage CE repair between 12 and 36 months of age combined with staged pelvic osteotomies. Three patients received preoperative testosterone and all six patients tolerated the staged repair with no significant intraoperative or early postoperative complications. The urethral plates were lifted off the dorsal corpora, and the corpora was dissected to the pubic bone to straighten them. The urethral plates were tubularized into a urethra brought out in the perineum, and an epispadias repair was performed to join the corporal bodies and glans.

CONCLUSIONS

The staged surgical repair of CE, incorporating principles of the complete primary repair of exstrophy, offers a safe and effective strategy for addressing both functional and cosmetic needs of boys with CE. Continued investigation into the psychosocial impact of CE repair and subsequent penile augmentation needs further attention and is critical to improving patient-centered care.

A MODIFICATION OF THE DE CASTRO NEOPHALLOPLASTY: THE CONTINUOUS SEARCH FOR IMPROVEMENTS

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PURPOSE

The De Castro neophalloplasty has changed the paradigm of congenital aphallia treatment, avoiding completely the feminizing genitoplasty for true XY males without a penis. We want to present a 9 months old boy with congenital aphallia treated with the latest refinements and modifications in the technique, avoiding a full quadrangular lower abdominal flap but with some new design in the flap.

MATERIAL AND METHODS

Basically, the lower abdominal flap resembles two joined bottles with 3 triangular deflections in each side to produce a zetaplasty in the dorsal aspect of the neophallus and avoid ventral retractions, one of the most seen late complications in his technique. The flap is approximately 12 to 10 cm large. The new format flap design allows an easier and more aesthetical conformation of the glans and the "fake" neomeatus at the tip of the glans. The zetaplasty helps to create a cylindrical phallus and promote a less tension dorsal suture. The triangular mini flaps can be easily joined at the dorsal midline area and can be secured by 4.0 PDS sutures in the derm. The skin is approximated with 5.0 Monocryl sutures.

RESULTS

Patient had an excellent clinical outcome and has now one year of follow-up.

CONCLUSIONS

This new modification seems to improve aesthetic and functional results and has been used with success by the creator of the methods over the last few years.

★ REPAIR OF A BIFID PHALLUS ASSOCIATED WITH PERINEAL DIGESTIVE DUPLICATION

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PURPOSE

Description of the repair of a bifid phallus associated with perineal digestive duplication.

MATERIAL AND METHODS

Video illustration of the surgeries and result of this case.

RESULTS

Result at 6 years old is satisfying with :

- a straight and degloved penis
- a well reconstructed glans and scrotum
- a glanular meatus

CONCLUSIONS

This video illustrate the satisfying repair of a bifid phallus, using a 2-stage urethroplasty.

PRIMARY REPAIR OF PROXIMAL URETHRAL STRICTURE AFTER PERINEAL HYPOSPADIAS REPAIR

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PURPOSE

This video will demonstrate the technique to correct a urethral stricture after perineal hypospadias surgery primarily with mobilization and straightening of the torturous proximal urethra.

MATERIAL AND METHODS

This is a 7 year old boy born with perineal hypospadias and complete penoscrotal transposition status post multistage repair who presents 5 years after his urethroplasty with a slow thin urinary stream. Cystoscopy

demonstrated a short and tight urethral stricture at the penoscrotal junction and the urethra proximal to this being torturous. The urethral stricture was repaired primarily with proximal urethral mobilization, excision of the stricture and straightening out the proximal urethra.

RESULTS

The patient has healed well and has a markedly improved urinary stream that is well directed without spraying at his 7 month follow-up. He is scheduled for yearly follow-ups through puberty with flow studies and physical exam.

CONCLUSIONS

Primary repair of short urethral strictures after hypospadias surgery can be done successfully but long term follow-up is necessary.

VD-5 (VD without presentation)

SECOND STAGE PROXIMAL HYPOSPADIAS REPAIR EMPLOYING QUILTING OF PREVIOUS BYARS FLAPS AND SIS BARRIER LAYER

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PURPOSE

A concern for reconstructive surgeons performing proximal hypospadias surgery using Byars Flaps as ventral skin coverage is the risk of developing a torturous urethra due to poor fixation of the Byars Flaps to the dartos layer as opposed to free grafts which are better fixated. To obviate this concern, we have started to quilt the previously placed Byars Flaps at the second stage urethroplasty in the midline of the ventral penile shaft to fixate the ventral shaft and then perform urethroplasty. This video will demonstrate this technique. Additionally, barrier layers over the neourethras are important to reduce complications such as wound breakdown and fistula. The standard commonly used dartos flaps and tunica vaginalis pedicles may not be available. Toward that end we have been using a bio-degradable scaffold of sub intestinal submucosa (SIS) single layer for this purpose as we will demonstrate in this video.

MATERIAL AND METHODS

This is a 4-year-old male presents for a second stage hypospadias repair after successful first stage proximal urethroplasty with dermal patch graft and Byars Flaps. At surgery the midline of the ventral shaft was quilted with interrupted 7-0 Maxon. Next a 2-layer running subcuticular urethroplasty was performed and covered by single layer SIS.

RESULTS

The patient has healed well and at 7-month follow-up enjoys no complication to date and voids with a full well directed urinary stream. Yearly follow-up with physical exam and flow studies will continue through puberty.

CONCLUSIONS

The technique of quilting the ventral midline of the penile shaft may lessen the risk of tortuosity in the setting of a second stage urethroplasty initially staged with Byars Flaps. SIS is a reasonable alternative to other techniques of tissue coverage. It is easy to do with results thus far being equivalent to other forms of barrier layers in our experience.

VD-6 (VD without presentation)

SECOND STAGE PROXIMAL HYPOSPADIAS REPAIR WITH SIS BARRIER LAYER AND CECIL PROCEDURE

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INTRODUCTION

The incorporation of a barrier layer between the neourethra and skin is critical in hypospadias repair to minimize the risk of postoperative urethrocutaneous fistulae. Native tissues, such as Dartos or tunica vaginalis, are commonly used for this purpose; however, prior surgeries may limit their availability. In such cases, biologic materials such as porcine small intestine submucosa (SIS) may offer a viable alternative.

PATIENT AND METHODS

Video recording is presented of a 28-month-old male undergoing a second stage urethroplasty for proximal hypospadias repair with the use of an SIS graft as a barrier layer status post first stage repair with dermal patch graft orthoplasty, right orchidopexy and hernia repair, and left inguinal hernia repair. A Thiersch-Duplay urethroplasty is performed in two layers over an 8Fr Zaontz stent. A single layer SIS graft is tailored to cover the neourethra and secured to the Dartos fascia. A Cecil repair is also completed to avoid a waist neck skin deformity in the setting of challenging closure due to proximal shaft ventral skin deficiency.

RESULTS

The stent was removed at 1 week, with follow-up evaluations at 3 and 6 months demonstrating appropriate healing, no evidence of urethrocutaneous fistula formation, and a well-directed urinary stream.

CONCLUSIONS

Rich in collagen and growth factors, SIS integrates with host tissues, promoting regeneration, cell adhesion, and tissue repair. For patients with limited native tissue availability, biologic materials like SIS grafts may provide an effective alternative. Cecil technique is an excellent adjunct for providing adequate skin coverage in the setting of ventral skin deficiency.

COMPLEX REPAIR OF CRIPPLE PENIS AFTER MULTIPLE FAILED HYPOSPADIAS REPAIR

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PURPOSE

Repair of failed hypospadias still presents a great challenge due to a lack of available tissue for reconstruction. Special attention should be taken for patients who underwent repair during early childhood and present with complications in young adulthood. We present a one-stage repair of failed severe hypospadias previously treated in childhood.

MATERIAL AND METHODS

We present a 23-year-old patient, who underwent several surgeries due to scrotal hypospadias in childhood. He presents with two defects of the penile urethra, absent distal urethra and moderate ventral curvature. Penile degloving is done and urethral defects are dissected. The neurovascular bundle is partially lifted, and ventral curvature is corrected with plication of the tunica albuginea. Previously created penile urethra is opened longitudinally, and longitudinal dorsal island skin flap, 8.5cm long, is harvested and transposed ventrally by buttonhole maneuver. The flap is joined with a previously opened urethra by two longitudinal running sutures. Additionally, two parallel incisions were made on the glans, and glandial urethra is created. Abundant pedicle of the longitudinal flap is fixed to the tunica albuginea laterally, covering the neourethra, and preventing fistula formation. Reconstruction of the penile skin is performed.

RESULTS

Operative time was 90 minutes with minimal blood loss. Postoperatively, urethral catheter and suprapubic tube were placed. Patient reported good stream without fistula formation, six weeks after surgery.

CONCLUSIONS

Transitional urology gains a growing significance in recent years as more people with congenital urologic conditions are reaching maturity and thriving. Surgical technique in failed hypospadias repair is individualized and should include correction of all deformities.

NON-URETHROPLASTY REPAIR FOR HYPOSPADIAS WITHOUT HYPOSPADIAS VARIANT

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PURPOSE

Hypospadias without hypospadias is a variant characterised by an apical meatus and hypoplasia of the distal urethra and spongiosum with adherent ventral penile skin to the urothelium. The dissection of the ventral penile skin without damaging the hypoplastic urethra can be challenging. Jednak et al. (BJU Int 2001) proposed an alternative surgical approach for such cases to reduce the risks associated with a long and complex urethroplasty. We present a video illustrating the main technical steps of this surgical approach.

MATERIAL AND METHODS

The approach was utilised by a single surgeon in 7 out of 168 cases of distal hypospadias over a 5-year period (4%) where this particular features were present. In the present video, we present the case of 6 years old male child with a wide glandular meatus, hypoplastic distal urethra reaching the midpenile level, deficient ventral foreskin and ventral penile curvature of 30°. In this series, 4 out of the 7 patients had significant curvature assessed intraoperatively.

The initial incision was made laterally and proximally the hypoplastic urethra and extended dorsally at the coronal level. Complete degloving of the penis was performed. The curvature was then corrected with a dorsal plication. The ventral penile skin deficiency was corrected with Byars flaps that were anastomosed to the lateral sides of the skin covering the hypoplastic urethra.

RESULTS

The child went home on the same day without urethral catheter. He had a regular follow up until 2 years after the repair. The penis appear straight on spontaneous erections. Stream valid and with straight direction.

CONCLUSIONS

Urethroplasty without urethroplasty is a suitable technique for the repair of hypospadias variant. It preserves the native urethra, avoids a complex reconstruction, and achieves the 3 main goals of hypospadias repair: apical meatus, correction of the curvature and homogenous distribution of the penile skin during the prepubertal follow up. It remains to understand the possibility of ventral curvature recurrence at puberty.

ROBOTIC ASSISTED NEPHROPEXY IN AN ADOLESCENT

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PURPOSE

Laparoscopic and robotic nephropexy has been well described in the adult population with limited reporting in children or adolescents.

MATERIAL AND METHODS

Our patient is a 14-year-old girl with possible Ehlers-Danlos syndrome presenting with progressive right flank and back pain with prolonged standing. Ultrasound evaluation demonstrated increased renal resistance indices and increased hydronephrosis while standing. Supine and upright intravenous pyelography demonstrated a drop in the location of the kidney of more than 2 vertebral bodies, angulation of the proximal ureter and increased hydronephrosis. Thorough discussion with the family emphasized the limited experience with this procedure in children. Using three port exposure with the DaVinci Xi System, the right kidney lower pole was exposed. Multiple Ethibond® sutures were placed through the renal capsule and retroperitoneal fascial tissues. There was no attempt to manipulate the ureteropelvic junction, which appeared completely normal. She was discharged on post-op day one. No stents or drainage tubes were used.

RESULTS

At one month she stated her symptoms were markedly improved. Upright ultrasound after supine ultrasound demonstrated no movement of the kidney relative to the body wall and liver. At five months follow-up, she continues to be free of her prior symptoms and is very satisfied with the result.

CONCLUSIONS

Symptomatic renal ptosis is uncommon in the adolescent yet seems to be a real entity and in selected cases, robotically assisted nephropexy seems to be a reasonable option for management. Careful preoperative discussion with patient and family is essential.

A FACILITATING MANEUVER DURING LAPAROSCOPIC APPENDICOVESICOSTOMY: CO2 INSUFFLATION VIA FOLEY CATHETER

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INTRODUCTION

During laparoscopic appendicovesicostomy, pneumoperitoneum is maintained through the umbilical trocar, while the bladder is inflated with air via Foley catheter to facilitate detrusorotomy. However, after incising the mucosa, the bladder may collapse, complicating the surgical procedure and the appendicovesical anastomosis. In this study, we describe a simple and facilitating maneuver to maintain bladder distension. We aim to present the maneuver we use as a practical solution to this challenge.

METHOD

A standard laparoscopic approach is followed until a detrusorotomy incision is made on the posterior bladder wall. The bladder mucosa is then incised to perform the appendicovesical anastomosis; however, as a result, the bladder collapses. At this stage, the CO2 insufflation tube is switched from the umbilical trocar to the drainage lumen of the Foley catheter to maintain bladder distension and ensure pneumoperitoneum.

The procedure is completed with the following routine steps: appendicovesical anastomosis, closure of the detrusor over the appendix, fixation of the bladder to the anterior abdominal wall, and creation of an appendix-skin anastomosis for clean intermittent catheterization.

RESULTS

The described maneuver was successfully used in two patients and was found to be effective during laparoscopic appendicovesicostomy.

CONCLUSIONS

CO2 insufflation via Foley catheter after bladder mucosa incision serves as an effective facilitating maneuver that keeps the bladder inflated and maintains pneumoperitoneum during laparoscopic appendicovesicostomy.

ROBOTIC URETERAL REIMPLANT WITH THE POLITANO LEADBETTER TECHNIQUE FOR SECONDARY URETERAL REFLUX

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PURPOSE

This step-by-step video shows a robotic redo ureteral reimplant with the Politano-Leadbetter technique performed for an 6-year old girl with grade V unilateral reflux. This patient was born with ureterohydronephrosis due to an obstructive megaureter, and, at the age of 6 months, underwent an open ureteral reimplant. However, she evolved with ureteral obstruction and pyonephrosis at the age of 4. After discussion with the family, she underwent an endoscopic dilation, which solved the obstruction but developed a grade V reflux, which was the reasoning for this surgery.

MATERIAL AND METHODS

We present a 5-minute video of a robotic ureteral reimplant using the Politano-Leadbetter technique. To our knowledge, this is the first published video of this technique.

RESULTS

We performed the robotic ureteral reimplant without any significant complications. The surgery console time was 90 minutes. The patient was discharged the next day, and the double J stent was removed after 4 weeks. Since then (6-month follow-up), the patient had no urinary tract infection. A voiding urethrocystogram was performed showing ureteral reflux resolution.

CONCLUSIONS

Ureteral reimplant using the Politano-Leadbetter technique is feasible using the robotic system, with low morbidity and short operative time.

★ PNEUMOVESICAL CLOSURE OF A URETEROVESICAL FISTULA FOLLOWING URETERAL TAPERING AND URETERONEOCYSTOSTOMY FOR PRIMARY OBSTRUCTIVE MEGAURETER

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PURPOSE

Ureterovesical fistula is a rare complication of ureteroneocystostomy (UNC). Few studies have described the detailed procedure for correcting ureterovesical fistula following UNC. Pneumovesical UNC is effective in correcting vesicoureteral reflux (VUR) and primary obstructive megaureter (POM). We report a case of pneumovesical closure of a ureterovesical fistula following surgery for POM. To the best of our knowledge, this is the first report of pneumovesical surgery for the closure of a ureterovesical fistula

MATERIAL AND METHODS

A 15-year-old female was referred for recurrent pyelonephritis. She had undergone pneumovesical ureteral tapering and UNC for left POM at the age of 5 years. However, left VUR was detected at the first voiding cystourethrography after UNC; no further intervention was deemed necessary, and the patient was monitored. Follow-up voiding cystourethrography disclosed persistent grade 4 left VUR and static renal scintigraphy showed severe renal scarring on the left kidney. Cystoscopy revealed a normal left neomeatus well placed on the trigone and a ureterovesical fistula at the proximal aspect of the submucosal tunnel. Pneumovesical surgery was performed. The bladder mucosa was incised along the long axis of the ureter around the fistula leaving the neomeatus. The ureter around the fistula was mobilized and isolated. The fistula was closed by suturing in three layers: full thickness of the ureter; bladder muscular layer; and bladder mucosa.

RESULTS

The patient was discharged 5 days after surgery without perioperative complications. She has remained healthy without further pyelonephritis.

CONCLUSIONS

Pneumovesical surgery may be useful for the closure of ureterovesical fistulas.

ROBOT- ASSISTED LAPAROSCOPIC UPPER POLE MOIETY TO LOWER POLE MOIETY URETEROURETEROSTOMY IN A PATIENT WITH CLASSIC BLADDER EXSTROPHY

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PURPOSE

The patient is a 12-year-old female with history of classic bladder exstrophy (CBE) and duplicated left collecting system. She desired continence surgery at age 11. Post operatively, she had persistent low volume urinary incontinence. Investigation was negative for fistula. MRI revealed a possible left ectopic ureter from the upper pole moiety. A nephrostomy tube was placed and antegrade nephrostogram confirmed an ectopic left ureter draining to the vagina. The decision was made to proceed with upper to lower pole ureteroureterostomy.

MATERIAL AND METHODS

IC-Green was injected into the left nephrostomy and the ureter was identified in Firefly view. The ectopic ureter was clipped distally and proximally, then divided. Adequate length was obtained. The proximal clip was cut. A 1cm ureterotomy was made on the recipient ureter. The lateral walls of the new end-to-side anastomosis were closed. A 6 Fr x 28 cm DJ Ureteral stent was inserted percutaneously via a 14 Fr angiocatheter. The position of the stent was confirmed by X-ray. The medial aspect of the anastomosis was then performed, completing this new connection.

RESULTS

She was discharged on post-operative day two with the nephrostomy tube capped and a stoma catheter to drainage. The ureteral stent and nephrostomy tube were removed four weeks later. Subsequent renal ultrasound showed no hydronephrosis in the left upper and lower pole moieties.

CONCLUSIONS

Cross sectional imaging is not routinely performed in pediatric patients prior to continence surgery. In a known ureteral duplication, MRI is useful in determining presence of an ectopic ureter. Robot-assisted surgery is safe and feasible in CBE patients with multiple prior abdominal surgeries.

VASCULAR PRESERVATION IN INTRA-ABDOMINAL ORCHIOPEXY USING A ROBOT-ASSISTED ICG ENHANCED TECHNIQUE

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PURPOSE

Two-stage Fowler-Stephen laparoscopic orchiopexy is the gold-standard for intra-abdominal testicles. Recent literature has shown that robot-assisted two stage orchiopexies have similar success rates. We hypothesize that indocyanin green (ICG) enhances robotic orchiopexy enabling a more precise dissection. We present the results of 9 patients who underwent robot-assisted ICG enhanced orchiopexy.

MATERIAL AND METHODS

Following a conventional robot-assisted approach, we identified the intra-abdominal testicles and proceeded to dissect off the peritoneum. We identified five landmark regions to guide dissection. Two of these regions included preservation of blood supply of small parallel vessels on the peritoneum (spermatic cord and vas deferens). The other three regions were dissected without preserving blood supply. Dissection was extended over the lateral wall of the bladder.

RESULTS

Out of the 9 patients, 4 were single stage procedures and 5 required a second stage. Two were bilateral. An overall total of 11 orchiopexies were performed. No intraoperative complications were identified and all were outpatient procedures. The mean operative time was 120 minutes for second-stage and 172 minutes for single-stage. All patients had bilateral palpable orthotopic testicles on physical exam at 1 month follow up and no signs of testicular atrophy on ultrasound at 3 months follow up.

CONCLUSIONS

Single-stage ICG guided robotic orchiopexy is a promising approach that can increase the success rate and reduce the need for a second anesthetic. A critical modification of the laparoscopic approach is the ability to precisely and safely dissect the peritoneum off of the vas and spermatic cord using ICG.

BLADDER EXSTROPHY AND COMPLEX LITHIASIS. IS THERE A ROLE FOR ROBOTIC SURGERY

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PURPOSE

Pediatric kidney stone management has unique clinical and surgical nuances. Patients with complex anatomies, have a high risk to develop infective recurrent kidney stones. Scarce information is available for the role of robotics in complex anatomies such as bladder exstrophy patients. We hereby present the case of a bladder exstrophy patient with large stone burden to demonstrate the advantage of robot-assisted lithotomy and concomitant ureteral reimplantation.

MATERIAL AND METHODS

Fourteen-year-old female with history of multiple repairs for bladder exstrophy including two closures, bladder neck closure with SIS and Mitrofanoff creation, bladder augmentation with right side ureter and ureteral reimplantation of right-side solitary kidney. Developed anuria and was found to have a 2-cm ureteral stone located at the distal ureter. Initial endoscopic management was unsuccessful given the complex anatomy and stone recurrence. Prior repairs made the open option unfeasible given the risk for fistula formation. Robotic approach was performed, and lithotomy was completed with simultaneous trans-laparoscopic flexible ureteroscopy. Ureteral reimplantation was then performed to reduce the chances of recurrence with a side-to-side uretero-cystostomy.

RESULTS

Procedure was successfully performed. Patient tolerated the procedure and was discharged 3 days later. Ureteral stent was removed 6 weeks after the procedure and 3 months after the patient is stone free with no clinical complications.

CONCLUSIONS

Robot assisted lithotomy is an effective surgical alternative for complex anomalies associated to prior abdominal reconstructions associated to kidney stones. The ability to access the anatomy from an intra-abdominal perspective avoids any potential negative results associated to an open approach.

USE OF ICG IN A ROBOTIC-ASSISTED SURGERY: IDENTIFICATION OF A PROSTATIC UTRICLE, DILATED SEMINAL VESICLE, AND TRANSPLANT URETER

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PURPOSE

Indocyanine green (ICG) has been used in robotic urologic procedures to facilitate fast and effective visualization of anatomic structures, enabling more precise surgical performance. This case evaluates the use of ICG in a complex pediatric robotic-assisted surgery for the identification and dissection of a dilated seminal vesicle and prostatic utricle, as well as the reimplantation of a transplant ureter.

MATERIAL AND METHODS

A 16-year-old male with history of Denys-Drash, bilateral Wilms' tumor, and end-stage renal disease, who previously underwent proximal hypospadias repair, left radical nephrectomy, right partial nephrectomy, and recent renal transplant, presented with recurrent urinary tract infections. Imaging revealed grade III reflux in the transplanted kidney and an enlarged prostatic utricle and dilated seminal vesicle. Given concerns that these structures contributed to urinary stasis and recurrent infection, surgical resection of the prostatic utricle and seminal vesicle as well as reimplantation of the transplant ureter was performed.

RESULTS

Intraoperatively, trans-catheter injection of ICG into the urethra enabled accurate identification and precise dissection of the dilated prostatic utricle, right seminal vesicle, and transplant ureter. The dilated structures were successfully removed en bloc, and the transplant ureter reimplanted. Total operative time was 306 minutes, and no intra- or postoperative complications were observed. No recurrent infections have occurred since surgery.

CONCLUSIONS

Intraoperative use of ICUG proved beneficial in identifying complex anatomy, enabling precise resection of a dilated prostatic utricle and seminal vesicle, as well as reimplantation of a transplant ureter. This technique may improve surgical outcomes and reduce complications in similar cases. Further studies are warranted to optimize its application in pediatric urology.

ROBOTIC-ASSISTED ILEAL CONDUIT URINARY DIVERSION IN A PAEDIATRIC PATIENT - A FEASIBILITY REPORT

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PURPOSE

Implementation of robotic technology to complex reconstructive procedures is an emerging field. Ileal conduit urinary diversion represents a long-term management option in the treatment of neuropathic bladder with incontinence. To date there is no reported application of robotic surgery for this procedure in childhood. This video demonstrates the successful undertaking of a robotic ileal conduit procedure confirming feasibility.

MATERIAL AND METHODS

A 6 year old female (15kg) with a syndromic (GATA2B) neurodevelopmental disorder associated with vesicoureteric reflux and recurrent urinary tract infections, where continuation of clean intermittent catheterisation was not tolerated, underwent a robotic-assisted ileal conduit procedure as part of an ongoing study into the efficacy of paediatric robotic surgery (CA-00533/NCT06539442). The CMR Versius platform was used with operative steps outlined and the operative steps are outlined in video form.

RESULTS

Procedure was completed successfully with a 4 port (1 x 10mm, 2 x 5mm, 1 x 15mm) approach in 6hr 15min (Console time 4hr 41min). 1) Left ureteric mobilisation and spatulation 2) passage of left ureter through mesocolic window 3) right ureteric mobilisation and spatulation 4) bilateral JJ stent insertion 5) formation of ureteric plate (Wallace '66' configuration) 6) ileal resection and side-to-side anastomosis 7) uretero-enteric anastomosis 8) mobilisation and formation of urostomy. Patient recovered well with no post operative opiates and a 4 day length of stay, partly due to establishing feeds after concurrent change to gastrostomy feeding.

CONCLUSIONS

We report the first robotic assisted ileal conduit in a paediatric patient using the Versius platform. Although technically challenging, this procedure is feasible.

PEDIATRIC ROBOT-ASSISTED LAPAROSCOPIC RIGHT PARTIAL NEPHRECTOMY

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PURPOSE

We present a surgical video depicting a pediatric robot-assisted right partial nephrectomy for an incidentally detected Bosniak III cyst.

MATERIAL AND METHODS

We describe a case of a 6-year-old female who presented with abdominal pain and was found to have a Bosniak III right renal cyst on ultrasound. Subsequent MRI re-demonstrated this cystic mass with thick enhancing septations.

The patient is placed in the right flank position with all pressure points padded. The robotic ports are placed as depicted in the image. A grasper is inserted to retract the liver, and the right kidney is identified. Gerota's fascia is incised, and the renal hilum is dissected inferiorly and superiorly. A vessel loop is brought around the hilar vessels. An intraoperative ultrasound is used to identify the mass, and the margins are scored with electrocautery. The hilum is then clamped by cinching the vessel loop and applying a bulldog. The mass is then excised coldly. Renorrhaphy is performed in two layers with running 2-0 PDS suture. The clamp is then released. Hemostasis is confirmed. Nephropexy is then performed.

RESULTS

The patient was discharged home on post-operative day 3. Final pathology revealed a cystic nephroma. The follow renal ultrasound demonstrated a healthy remaining kidney.

CONCLUSIONS

Our video presents a successful pediatric robot-assisted laparoscopic right partial nephrectomy.

A CASE REPORT OF ROBOT-ASSISTED PYELOPLASTY IN CHILDREN: WHAT ABOUT A REDO PROCEDURE? A STEP-BY-STEP VIDEO PRESENTATION

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INTRODUCTION

Robot-assisted (RA) pyeloplasty by the Anderson-Hynes technique is the golden standard for children with ureteropelvic junction (UPJ) stenosis. In redo procedures, modified anatomy might require other techniques and adaptations, seldom reported. This video demonstrates a Heineke-Mikulicz technique in an intra-renal pelvis with scarce pyelum after initial pyeloplasty with pyelum reduction.

PATIENTS AND METHODS

A 15-year-old boy underwent a right-sided pyeloplasty via lumbotomy for asymptomatic UPJ-stenosis after incidental finding. After failure to remove the JJ-stent postoperatively, he presented with his parents for second opinion to get rid of the JJ. Secondary anastomotic stricture of the UPJ was diagnosed, which could not be treated endoscopically. A nephrostomy tube was placed. After a failed attempt to clamp it, A RA redo pyeloplasty was proposed.

The ureter was initially identified and followed upwards into the kidney to identify the UPJ. The latter lies really close to the hilum, with a scarcely dilated pyelum, probably because of previous pyelum reduction. Both ureter and pyelum are suspended with stay sutures. Fibrotic scar tissue is observed at level of the UPJ. Removing the fibrous tissue and broadening of the junction is performed, applying the principle of Heineke-Mikulicz for stenosis. A JJ stent is left in situ for 8 weeks.

RESULTS

The redo pyeloplasty procedure proved its efficiency at follow-up after five months. No more colic-pain was described, and hydronephrosis was fully resorbed on ultrasound.

CONCLUSIONS

In a redo pyeloplasty, variations in technique might be useful, like the Heineke-Mikulicz illustrated here. Using another approach than during the initial procedure plays an important role.

ROBOT ASSISTED LAPAROSCOPIC APPENDICO-VESICAL FISTULECTOMY

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INTRODUCTION

We present robot assisted laparoscopic approach to management of appendico-vesical fistula. 9-year-old male who previously presented with perforated appendicitis, managed conservatively with placement of a 12 Fr transrectal drain and intravenous antibiotics. The family declined interval appendectomy, and the patient experienced no urological symptoms. He re-presented 1 year later with gross hematuria, and recurrent multi-organism bacteruria.

METHODS

A less than 1 cm, discrete soft tissue density with vascular flow was detected by ultrasound. Contrast enhanced MRI and ultrasound with transrectal contrast enhancement were both negative. Cystoscopy revealed a bladder mass on the posterior bladder wall approximately 3 cm cephalad to the trigone. Cold cup biopsy revealed ulceration and granulation tissue, but no malignancy. Cystogram and bilateral retrograde pyelograms were negative. Undiagnosed fistula was still high on the differential.

RESULT

The patient was positioned in dorsal lithotomy with the thighs parallel to the abdomen. Port placement was similar to a robot assisted laparoscopic Mitrofanoff. Three 8 mm ports were placed transversely at the level of the umbilicus 6 cm apart. A 12 mm Airseal was placed in the left upper quadrant at the mid-clavicular line and served as an assistant port. Appendectomy allowed for mobilization of bowel out of the pelvis. The fistulous tract was identified and excised along with a bladder cuff. Repair was performed with omental flap interposition.

CONCLUSIONS

Appendico-vesical fistula is an uncommon complication after conservative management of perforated appendicitis. They may present with gross hematuria, multi-organism urinary tract infection, and vascular bladder mass. Imaging is often negative, and diagnosis is based in a high degree of clinical suspicion. Robot assisted laparoscopy is a reasonable minimally invasive, definitive management strategy.

ROBOT ASSISTED PYELOPLASTY IN AN UNFUSED DISCOID VARIANT KIDNEY-A TECHNICAL DEMONSTRATION

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PURPOSE

Discoid kidney or Pancake kidney is a rare renal fusion anomaly of the kidneys. The discoid kidney are incidentally detected or may present clinically with PUJ obstruction, recurrent infection, calculi. This video presentation demonstrates the technique involved in management of obstruction in an UNFUSED discoid variant kidney with PUJ obstruction.

MATERIAL AND METHODS

This is a case report of 17year old girl presented with right sided flank pain for 2months, she had one episode of UTI earlier, on imaging she was found to have severe hydronephrosis on right and MAG 3 renogram confirmed obstruction with normal function (48%). With preoperative diagnosis of right sided PUJ Obstruction, she was planned for Robotic assisted Laparoscopic pyeloplasty.

RESULTS

Intraoperatively a discoid variant kidney with PUJ obstruction on right side (UNFUSED type) was identified. With standard 3 robotic port and one assistant port, pyeloplasty with DJ stenting was completed (demonstrated in the video). Operative time was 126minutes with negligible blood loss. Catheter removed on POD1. Patient is symptom free and awaiting follow up.

CONCLUSIONS

When anatomical variations are encountered during robotic assisted surgery, we should be cognisant about proceeding with reconstruction by adopting certain technical nuances such as ambidextrous suturing, safe and limited maneuverability of renal parenchyma (as shown in the video) aid in reconstruction with good precision and outcome.

APPLYING ADULT EXPERTISE TO PEDIATRIC ROBOTIC SURGERY THE EXAMPLE OF PEDIATRIC ROBOTIC BILATERAL RETROPERITONEAL NEPHRECTOMIES

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PURPOSE

We present our technique for robotic bilateral retroperitoneal nephrectomies in children that utilized the experience of our adult urology partners. While several surgical options exist (open, laparoscopic, robotic transperitoneal, etc), we hope to emphasize the feasibility of this procedure as well as the benefits of the collaborative nature of this endeavor.

MATERIAL AND METHODS

In this video, we demonstrate our specific technique for robotic bilateral retroperitoneal nephrectomies in the pediatric population in a 11-year-old female with high grade bilateral vesicoureteral reflux, neurogenic bladder, and renal failure with peritoneal dialysis at a tertiary care children's hospital in conjunction with our adult minimally invasive robotic urologic colleagues.

RESULTS

With the small working spaces in pediatric patients, appropriate port placement is especially important.

CONCLUSIONS

Robotic bilateral retroperitoneal nephrectomies are feasible in the pediatric population despite the concerns for limited working space. The retroperitoneal approach avoids entry into the peritoneal cavity, thereby minimizing the risks of bowel injury, ileus, and tumor seeding as well as allowing uninterrupted peritoneal dialysis. It also avoids the need for large incisions, resulting in less postoperative pain and quicker recovery with "hidden" incisions. Collaborating with experienced minimally invasive adult urologists can be invaluable, as their expertise is applicable to the surgical management of complex pediatric cases.

INITIAL EXPERIENCE OF PENUMOVESICOSCOPIC LOWER URINARY TRACT RECONSTRUCTION IN DUPLEX SYSTEM WITH ECTOPIC URETEROCELE

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INTRODUCTION

Lower urinary tract reconstruction for a duplex system with ectopic ureterocele traditionally requires open surgery with ureterocelectomy and bladder neck reconstruction. We report our initial experience of the pneumovesicoscopic approach for lower urinary tract reconstruction in two infants.

PATIENTS AND METHODS

We performed pneumovesicoscopic ureterocelectomy, bladder neck reconstruction, and bilateral common sheath reimplantation in two female infants (12 and 19 months old) with a bilateral complete duplex system and unilateral ectopic ureterocele. Both patients previously underwent transurethral incision of ureterocele at 4 and 1 months of age at other hospitals. They subsequently developed recurrent urinary tract infections requiring surgical intervention. The patients presented with left upper moiety hydronephrosis (Grade 4) and high-grade vesicoureteral reflux. The procedure was performed using 5 mm telescope and 3 mm laparoscopic instruments.

RESULTS

Operative time was 245 and 265 minutes, respectively. There were no perioperative complications. At the 6-month follow-up, the first patient showed complete resolution of hydronephrosis with normal post-void residual (12 ml/60 ml estimated bladder capacity). The second patient maintained stable upper tract dilation with acceptable post-void residual (34 ml/90 ml). No postoperative complications including febrile urinary tract infection were observed during follow-up periods.

CONCLUSIONS

Our initial experience indicates that pneumovesicoscopic lower urinary tract reconstruction is technically feasible and safe in infants with duplex system ectopic ureterocele. Despite extensive bladder manipulation, early postoperative bladder function appears well preserved. Longer follow-up and larger series are needed to validate long-term outcomes.

ROBOTIC AUGMENTATION ILEOCYSTOPLASTY WITH MITROFANOFF FORMATION AND COHEN'S URETERAL REIMPLANTATION FOR PEDIATRIC NEUROGENIC BLADDER DYSFUNCTION AND VESICoureTERAL REFLUX

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PURPOSE

A nine-year-old female with a history of Sacrococcygeal Teratoma excision presented with precocious puberty, bilateral hydronephrosis, and renal dysfunction with a GFR of 49. Video urodynamic study revealed detrusor overactivity, decreased compliance, vesicoureteral reflux on the right side, bilateral flank pain, and a severely trabeculated bladder with an irregular appearance. No detrusor pressure was observed during the voiding phase. Due to noncompliance with Clean Intermittent Catheterization (CIC), surgical intervention was required to address her condition.

MATERIAL AND METHODS

The patient underwent robotic-assisted augmentation ileocystoplasty with Mitrofanoff formation and right-sided robotic Cohen's ureteral reimplantation. The ileal segment was harvested extracorporeally, detubularized into a U shape, and sutured to the bladder using barbed sutures. The augmented bladder was tested with saline, ensuring no leakage. The appendix was mobilized and prepared as a Mitrofanoff channel using the VQZ flap technique. A 10Fr urethral catheter and a 20Fr suprapubic cystostomy tube were placed for postoperative management.

RESULTS

The procedure lasted 8 hours with minimal blood loss and no perioperative complications. Three weeks after surgery, a voiding cystourethrogram (VCUG) demonstrated increased bladder capacity with no leakage or vesicoureteral reflux. The patient and her caregivers were trained to perform CIC over two days and successfully established independence in performing CIC through the Mitrofanoff channel. She was discharged on postoperative day 25, with her GFR improved to 82.

CONCLUSIONS

Robotic-assisted ileocystoplasty and Mitrofanoff channel formation offer effective management for complex bladder dysfunction. The approach minimizes perioperative complications, reduces pain, and shortens hospital stays while achieving comparable long-term outcomes to open surgery.

ROBOTIC RADICAL CYSTECTOMY FOR BLADDER RHABDOMYOSARCOMA

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PURPOSE

We present a 16-month-old female with biopsy proven, fusion negative, intermediate risk bladder rhabdomyosarcoma after presenting with urinary retention. Initial imaging showed a 4 cm intravesical mass arising near the trigone and metastatic workup was negative. She received Vincristine, Dactinomycin and Cyclophosphamide alternating with Vincristine and Irinotecan (VAC/VI) per the ARST 1431 protocol. She was referred to our institution for consideration of surgery to avoid pelvic radiation.

MATERIAL AND METHODS

After multidisciplinary discussion the decision was made to proceed with robotic radical cystectomy, urethrectomy with ileal conduit and staging pelvic lymph node dissection. The video outlines the steps performed during the surgery. To date this is the youngest reported robotic cystectomy with ileal conduit.

RESULTS

Pathology showed a 4cm residual mass with negative surgical margins. Estimated blood loss was 150ccs. Robotic time was 3.5 hours, overall case time 5 hours. There were no positive pelvic lymph nodes. She was discharged after a 6-day admission and has since been seen in good health. She will continue with adjuvant chemotherapy without plans for adjuvant radiation.

CONCLUSIONS

This shows the importance of a multidisciplinary approach to this rare pathology. We highlight that a robotic approach is feasible and beneficial in the deep pelvic dissection with minimal blood loss. Additionally, this represents a management strategy to avoid long term risks of pelvic radiation.

★ ADVANCING PEDIATRIC SOLID TUMOR SURGERY THROUGH THE CLINICAL INTEGRATION OF VIRTUAL REALITY (VR) AND INDOCYANINE GREEN (ICG) FLUORESCENCE-GUIDED IMAGING

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PURPOSE

Pediatric solid tumors often require meticulous surgical interventions due to their complex anatomical locations and proximity to vital structures. Emerging technologies, such as Virtual Reality (VR) and Indocyanine Green (ICG) fluorescence-guided imaging, offer promising solutions to enhance surgical precision and outcomes. However, their application in pediatric urology oncology remains underexplored. This case report illustrates the integration of VR and ICG fluorescence imaging in the surgical treatment of neuroblastoma, emphasizing their benefits, limitations, and areas for future advancements.

MATERIAL AND METHODS

A 12-month-old female with a prenatal diagnosis of cloacal malformation, Müllerian anomalies, and a horseshoe kidney presented with a solid retroperitoneal mass discovered during preoperative imaging for her reconstructive surgery. The mass was confirmed as a right adrenal neuroblastoma. After six cycles of chemotherapy, persistent mIBG uptake suggested potential residual tumor viability. Definitive surgical resection was scheduled, incorporating VR and ICG fluorescence to facilitate precise dissection and preservation of critical structures.

RESULTS

The integration of VR allowed for detailed preoperative planning and intraoperative navigation, enhancing anatomical orientation. ICG fluorescence provided real-time visualization of vascular structures, aiding in safe tumor resection. The procedure was completed without complications, and the patient had an uneventful postoperative recovery. Follow-up imaging confirmed no evidence of residual disease.

CONCLUSIONS

VR and ICG fluorescence imaging hold great promise for enhancing surgical precision and safety in pediatric urology oncology. Addressing current limitations, such as the inability to superimpose VR images onto the surgical field and the lack of neuroblastoma-specific fluorescent probes, should be a priority for future advancements to improve outcomes further.

HIDDEN INCISION ENDOSCOPIC SURGERY TECHNIQUE FOR RPLND

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PURPOSE

Robotic assisted retroperitoneal lymph node dissection (RPLND) is becoming increasingly popular as it offers reduced morbidity with a faster recovery period, which has been demonstrated in recent case series (Clark et al. J Robot Surg 2023; 17: 3045-48). In this video, we demonstrate applying the hidden incision endoscopic surgery (HiDES) port placement technique for a robotic-assisted staging RPLND for a patient with a right paratesticular rhabdomyosarcoma.

MATERIAL AND METHODS

The presented patient underwent a radical right orchiectomy for a paratesticular mass, pathology confirmed embryonal rhabdomyosarcoma. His staging imaging demonstrated no metastatic disease. He was then scheduled for a robotic-assisted modified right template staging RPLND, to be followed by initiation of chemotherapy post-operatively. He was positioned supine on the table and HiDES port placement technique was used with the four robotic arms along the suprapubic line with a 12mm assist port at the umbilicus. The procedure started with isolation and removal of the right spermatic cord structures, followed by dissection and removal of the right gonadal vessels, then proceeding with the para-caval, interaortocaval, and para-aortic lymph node dissections using a split and roll technique.

RESULTS

Total surgery time was 456 minutes, 44 lymph nodes were removed. Post-operatively he was kept on a chyle leak low-fat diet for two weeks. He was discharged home on post-operative day three and chemotherapy was initiated on post-operative day five.

CONCLUSIONS

HiDES port placement can successfully be utilized for robotic-assisted staging RPLNDs in patients with paratesticular rhabdomyosarcoma. This port placement improves scar cosmesis without compromising robotic arm mobility or intra-abdominal dissection.

ROBOTIC RETROPERITONEAL LYMPH NODE DISSECTION FOR RHABDOMYOSARCOMA IN A PEDIATRIC PATIENT WITH HORSESHOE KIDNEY

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PURPOSE

Paratesticular rhabdomyosarcoma is a rare pediatric malignancy treated multimodally with surgery, chemotherapy, and/or radiation. Robotic assisted RPLND is a minimally invasive approach that has been reported as a safe and efficacious in literature.

MATERIAL AND METHODS

A 17-year-old patient with a horseshoe kidney presented with a painless scrotal mass. Left inguinal orchiectomy was performed. Pathology demonstrated a 7.4cm rhabdomyosarcoma, spindle cell/sclerosing type with negative margins. A robotic RPLND was performed to complete staging prior to initiation of chemotherapy.

RESULTS

The patient was positioned in right lateral decubitus position. Three 8mm robot ports were placed para-rectally 7-8cm apart, and an 11mm assist port was placed infraumbilically at midline. The left colon was mobilized. The gonadal vessels were isolated and dissected down to the internal ring. All left perigonadal and peri-iliac tissue were excised. The dissection was carried cranially and the gonadal vein, which traveled over the isthmus of the horseshoe kidney, was ligated and divided at its insertion into the left renal vein. It was then ligated caudally at the internal ring. A modified left template was used, including all para-aortic lymph nodes from the left renal artery to the IMA, which was just above to the horseshoe kidney isthmus. Pathology revealed metastatic rhabdomyosarcoma in the para-aortic nodes.

CONCLUSIONS

Robotic RPLND can be safely performed in the setting of a horseshoe kidney. Complete para-aortic dissection may require working above and below the isthmus to access the nodes posterior to it. Due to medialized ureters, the template may expand beyond the traditional lateral border of the ureters.

A SERIOUS CIRCUMCISION COMPLICATION CASE: FULL THICKNESS PENILE AMPUTATION

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PURPOSE

Circumcision is a surgical procedure frequently performed in boys in our country. It can have various complications such as penile amputation. The aim of this study is to present a case of full thickness subcoronal penile amputation during circumcision.

MATERIAL AND METHODS

An 8-year-old male patient who was brought to our center was circumcised at home by a health technician, using razor. It was understood that the penis was full-thickness amputated, distal part sutured with skin sutures only. With the complaint of continued active bleeding and urine coming from the seams, the patient was taken to the emergency department in another center and then he was referred to our center. It was possible to take him to the operating room 6 hours after the event. The operation was performed by a team of pediatric urologists and plastic surgeons. 1 dorsal penile artery suitable for reanastomosis and the dorsal deep vein were found. Urethral anastomosis was performed with separate sutures using 6/0 Polydioxanone over 10 fr silicone catheter. Vascular anastomoses performed with 7/0 Polydioxanone under microscopic vision. The suturing of Buck's fascia was performed with separate sutures using 5/0 Polydioxanone. Circumcision line was made with separate sutures using 5/0 quick-dissolving sutures.

Under the condition of close bleeding follow-up, pressure-free dressing was applied. Postoperatively, the distal part was covered with heparinized gauze at intervals of 2 hours. To prevent ischemia; pentoxifylline, dextran, oral anticoagulants were used. The patient received regular hyperbaric oxygen therapy on daily basis from third day. Urethral catheter removed on 25th day.

RESULTS

The patient urinated by squirting in normal calibration. In the follow-up, stenosis responding to dilatations occurred at the anastomotic level.

CONCLUSIONS

Circumcision is still performed by non-physician technicians in an illegal way in our country. So, serious complications like penile amputation are still seen with this practice. Multidisciplinary approach is needed for successful functional results.

ROBOT-ASSISTED REPAIR OF RENAL TRANSPLANT URETEROPELVIC JUNCTION OBSTRUCTION

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PURPOSE

Ureteropelvic junction obstruction (UPJO) is rare after renal transplant, with an incidence of 0.25%. Pyelo-ureterostomy to native ureter and Foley Y-V plasty have been reported in the adult population. The use of robot-assisted techniques in the pediatric population is not well-described. We present a case of robot-assisted right-sided pyelo-ureterostomy for transplant UPJO.

MATERIAL AND METHODS

A 19-year-old female presented with a creatinine of 5.9mg/dL four years after living-related renal transplant. Prior end-stage renal disease was secondary to nephronophthisis. Evaluation showed hydronephrosis without ureteral dilation. Retrograde pyelogram showed narrowing of the ureteropelvic junction and normal caliber native right ureteral stump, ending at the level of the transplant upper pole. Creatinine improved to 1.6mg/dL with stent drainage and biopsy showed no signs of rejection. Decision was made to proceed with robotic-assisted pyelo-ureterostomy. Intra-operatively, open-ended ureteral catheters were placed in the native and transplant ureters. The transplant collecting system had significant surrounding inflammatory tissue intra-operatively. Identification and dissection of the transplant collecting system was assisted by intra-operative ultrasound and indocyanine green (ICG). ICG also helped with early identification of the native ureter. The native ureter was anastomosed to the transplant pelvis in an end-to-side fashion with ureteral stent drainage for 1 month.

RESULTS

The procedure was tolerated well with 20ml EBL. There were no intraoperative complications. The patient has recovered well with creatinine stable at 1.4mg/dL and resolution of hydronephrosis.

CONCLUSIONS

The robot-assisted minimally invasive approach to repairing the rare complication of transplant UPJO is feasible with ultrasound and ICG as helpful adjuncts.

OPTICAL TROCAR TO AID SAFE BLADDER ACCESS THROUGH DENSE SCARRED TISSUE FOR PERCUTANEOUS CYSTOLITHOTOMY

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INTRODUCTION

Scar tissue in patients with prior bladder operations can make sheath placement for percutaneous cystolithotomy (PCCL) challenging. We propose a technique that allows direct visualisation during port and sheath placement without the need of a larger incision.

PATIENTS AND METHODS

Three patients underwent PCCL for bladder calculi. The surgical technique: 14G venflon and 0.035" Sensor Guidewire (Boston-Scientific) with intravesical visualisation introduced into the bladder. The tract was dilated using 7Fr and 9Fr Cook dilators. A 30F NephroMax™ Balloon (Boston Scientific) failed to create an accessible tract for a 30F Amplatz sheath due to significant scar tissue.

An Ethicon Endopath Xcel® 11mm Optical Trocar with nephroscope within was inserted into the bladder, parallel to the guidewire, to allow safe entry into the bladder under direct vision. This was exchanged for a 30Fr Amplatz sheath and the bladder calculi were cleared with a 24Fr nephroscope and Swiss Master lithoclast (Boston-Scientific).

RESULTS

Age at surgery: 8, 14 and 17-years; Bladder-stones diameter:15mm-36mm. All had previous ileocystoplasty and Mitrofanoff-formation. 2/3 had bladder neck closures. One patient had a previous failed endoscopic-approach and required open-cystolithotomy.

Balloon dilatation failed in all due to scar-tissue but endoscopic PCCL access was achieved for all patients with this modified technique. There were no intra-operative complications and the SPC via the tract was removed after 48-hours. All patients were stone-free and the calculi were predominately calcium phosphate/ magnesium ammonium phosphate.

CONCLUSIONS

Where balloon dilatation fails due to scar tissue, the optical trocar allows for safe entry into the bladder sufficient for a 30Fr sheath.

SUPERMINI PERC (SMP) IN PEDIATRIC PATIENT

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PURPOSE

Supermini perc (SMP) is a minimally invasive percutaneous surgery developed in Guangzhou - China in 2017. The difference between this technique and traditional mini-perc is the reduced size of the sheath (14fr) and the use of irrigation and aspiration through the sheath itself, increasing the effectiveness of the procedure and reducing operative time

MATERIAL AND METHODS

We present a video showing the SMP technique in pediatric patients emphasizing the material used and its functioning as well as the advantages when compared to conventional mini-pcni

RESULTS

The procedure proved to be effective, fast and safe. Literature data supports its use in stones < 3cm

CONCLUSIONS

SMP is a technique that uses a small tract and a special aspiration sheath, reducing complication rates and can be considered the treatment of choice in pediatric patients when percutaneous renal surgery is required.

ROBOTIC-ASSISTED URETEROPLASTY WITH ORAL MUCOSA GRAFT FOR MID-PROXIMAL URETERAL STRICTURE IN A PEDIATRIC PATIENT

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PURPOSE

Pediatric renal lithiasis is a growing concern, often requiring diverse treatment modalities such as extracorporeal shock wave lithotripsy (ESWL), flexible ureteroscopy, and mini-percutaneous nephrolithotomy (mini-PCNL). Recurrent interventions may lead to complications such as ureteral strictures. This case involves a 16-year-old male patient with recurrent left-sided renal stones managed with multiple treatments. Subsequent procedures resulted in a mid-proximal ureteral stricture, with upstream dilation and left-sided lumbar pain.

MATERIAL AND METHODS

We present a 5-minute video detailing a robotic-assisted ureteroplasty using an oral mucosa graft to correct the ureteral stricture. Preoperative imaging, including magnetic resonance urography and intraoperative

pyelography, identified the precise location of the stricture. Robotic dissection of the ureter was performed, isolating the stricture and mobilizing the ureter. An oral mucosa graft was harvested and sutured to reconstruct the ureteral segment, with a distal ureteral catheter placed across the stricture site.

RESULTS

The patient was hospitalized for 2 days postoperatively, with a double-J stent maintained in the reconstructed ureter. Pain management was achieved with symptomatic medication. The patient was discharged without complications. The double-J stent was removed 4 weeks post-surgery, and follow-up with a significant improvement in the previously noted hydronephrosis. The patient reported complete resolution of lumbar pain and remains asymptomatic.

CONCLUSIONS

Robotic-assisted ureteroplasty using an oral mucosa graft is a safe and effective technique for managing ureteral strictures in pediatric patients. This approach ensures durable outcomes, minimizes morbidity, and restores ureteral function, emphasizing its value in complex reconstructive urology.

VD-34 (VD without presentation)

URETERAL POLYP AND LARGE STONE BURDEN. THE ROLE OF ROBOTIC SURGERY

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PURPOSE

Pediatric kidney stone management has unique clinical and surgical nuances. Surgical management is limited by instrument size, stone burden and urinary tract anomalies. Most common surgical techniques include endoscopic management and extracorporeal shockwave lithotripsy. Limited information is available for the role of robotics. We hereby present the case of a complex anatomical anomaly demonstrating the advantage of robot-assisted lithotomy and concomitant ureteral reimplantation.

MATERIAL AND METHODS

Four-year-old female presenting with gross hematuria and abdominal pain. CT scan demonstrated a 2-cm ureteral stone located at the ureterovesical junction. Initial endoscopic management was scheduled and intraoperatively patient was found to have a large pedunculated ureteral lesion and the impacted stone was found proximal to the lesion. Given the large size of the lesion, endoscopic management was aborted. Biopsy confirmed a benign ureteral papilloma. Patient was then scheduled for dismembered ureteral reimplant, distal ureterectomy bladder cuff resection and lithotomy.

RESULTS

Procedure was successfully performed. Operative time was 277 minutes. Patient tolerated the procedure and was discharged 2 days later. Ureteral stent was removed 3 weeks after the procedure.

CONCLUSIONS

Robot assisted lithotomy is an effective surgical alternative for complex anatomical anomalies associated to kidney stones in the pediatric population.

VD-35 (VD without presentation)

MINIMALLY INVASIVE TREATMENT OF URETERAL POLYP AS A CAUSE OF INTERMITTENT HYDRONEPHROSIS IN A CHILD: A CASE REPORT

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PURPOSE

Ureteral tumors can occur at any age, but are rare in children. Fibroepithelial polyps are considered benign neoplasms of mesodermal origin, most frequently found within the proximal ureter, especially in ureteropelvic junction.

MATERIAL AND METHODS

We report a 6-year-old male patient case with intermittent abdominal pain and hydronephrosis, who was initially considered to have ureteropelvic junction stenosis, which was not confirmed during videolaparoscopy. The patient underwent pyelography and subsequent ureteroscopy using long 7 Fr semi-rigid scope with dual working channel. Using a 3 Fr grasper through one of the working channels, the polyp was held and a 400 micron laser fiber was introduced for resection through the second working channel.

RESULTS

Histopathological analysis described 0.2 x 0.2 x 0.1 cm ureteral fibroepithelial polyp, without malignancy. A double J catheter was left for two months and at the time of removal of the catheter, new control ureteroscopy was done, with no evidence of strictures. The patient has progressed with no pain and no symptoms after 6 months follow-up.

CONCLUSIONS

Retrograde ascending pyelography performed at the same time of ureteropelvic junction stenosis treatment is a controversial subject, but it adequately details the anatomy, confirms the presence of intrinsic stenosis and rules out the presence of lesions within the ureter. If any images suggestive of endoureteral lesions is found, confirmation and treatment can be performed by ureteroscopy, allowing histopathological analysis to rule out malignant lesions.

ROBOTIC INFUNDIBULOPYELOSTOMY FOR FRALEY'S SYNDROME- A VIDEO DEMONSTRATION

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PURPOSE

Fraley's syndrome is caused by the renovascular obstruction of upper pole infundibulum causing dilatation and obstruction of upper pole calyx. It is a rare entity and not frequently encountered in children. This is a case report of Fraley's syndrome and involves a video demonstration of management of obstruction by robot assisted laparoscopic surgery.

MATERIAL AND METHODS

A 11year boy presented with recurrent left sided flank pain to pediatric urology. Initial two episodes were conservatively, ultrasound showed left mild hydronephrosis? Duplex. The third episode was Dietl's crisis, acute phase imaging revealed focal dilatation of upper and EC renogram showed delayed IRT and tracer retention of Upper pole raising suspicion of left Duplex and PUJ obstruction of upper moiety.

An intraoperative diagnosis of Fraley's syndrome was done and decided to proceed with Infundibulopyelostomy. Technical steps explained in the video.

RESULTS

Infundibulopyelostomy completed and child made a good recovery with complete resolution of hydronephrosis within 6months and demonstrated good drainage and function on left side on EC Renogram at one year follow up Operative time was 174min, blood loss 10-20ml, Stent removal 8 weeks later.

CONCLUSIONS

Fraley's syndrome and robotic management in children under 15yrs of age is not reported so far in literature. This is presented to demonstrate the technical aspects of managing the rare renovascular obstruction with robot assisted laparoscopic surgery.

URETEROCALICOSTOMY REPAIR OF INTRARENAL URETEROPELVIC JUNCTION OBSTRUCTION

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PURPOSE

Ureterocalicostomy is an option for reconstruction of an intrarenal or otherwise difficult access ureteropelvic junction obstruction (UPJO). In our patient, findings were consistent with severe left UPJO and concomitant ipsilateral ureterovesical junction obstruction. We planned to first address the UPJO via open dismembered pyeloplasty but opted for ureterocalicostomy given the anatomical finding of an infrarenal UPJO. Our objectives include discussion and videographic representation of open ureterocalicostomy technique.

MATERIAL AND METHODS

A six-month-old boy had pre- and postnatal moderate-severe left hydroureteronephrosis, normal voiding cystourethrogram and diuretic renogram with 44% differential function but no appreciable drainage from the left kidney. In right lateral decubitus position a left flank incision was made and the left kidney and dilated proximal ureter were identified. Intraoperative ureteropyelogram confirmed intrarenal UPJO. At its entry into parenchyma, the dilated ureter was transected and the proximal stump suture ligated. Hilar and lower pole vessels were occluded. Lower pole partial nephrectomy was performed to expose an adequate caliber lower pole calyx. The spatulated proximal ureter was anastomosed to the calyx with simple running and locking technique along posterior then anterior walls, respectively. Vascular occlusion time was 22 minutes. The parenchymal defect was partially approximated; balancing hemostasis and healing while limiting risk of anastomotic occlusion.

RESULTS

The patient was stable throughout postoperative course and was discharged home on postoperative day five. Three-week postoperative ultrasound demonstrated improved left (operated side) hydronephrosis and a widely patent ureterocalicostomy anastomosis.

CONCLUSIONS

Ureterocalicostomy is a safe and successful procedure that is useful when a traditional dismembered pyeloplasty cannot be performed due to anatomical challenges in accessing the UPJO.

CONTEMPORARY MANAGEMENT OF UPPER POLE OBSTRUCTIVE URETEROCELE OR ECTOPIC URETERS: SINGLE CENTER TECHNIQUE AND EXPERIENCE WITH STENTLESS AND RADIATION-FREE URETERO-URETEROSTOMY.

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PURPOSE

Obstructive upper pole ureters have been historically managed with ureterocele puncture, reimplantation or heminephrectomy. We aim to present our experience and outcomes with a stent-free standardized technique for uretero-ureterostomy (UU)

MATERIAL AND METHODS

We reviewed consecutive patients who underwent UU (primary) or after ureterocele incision or ureterostomy (secondary) from 2019-25, capturing demographic variables, indications for surgery, intraoperative findings, postoperative complications and outcomes. The video demonstrates the stepwise surgical technique, emphasizing the use of ultrasound to avoid radiation from fluoroscopy and the stent-free nature of the procedure.

RESULTS

We identified 40 patients (80% female) who underwent UU at a mean age of 11 months +/-13 for primary surgery and 16 months +/-11 for secondary surgery. Mean follow-up was 30 months +/- 25. All patients were managed with a stentless technique and intraoperative ultrasound-guided bubble retrograde pyelogram. UU after failed ureterocele puncture was performed in 6 (15%), and UU for primary UP ectopic ureters in 34 (85%). 95% underwent outpatient surgery or had < 24-hour admission. Preoperative UP APD and maximal UP ureter diameters were 15+/-16mm and 14 +/-8mm. Postoperatively, 10+/-12mm and 8+/-9mm. Complications consisted of 4 infected ureteral stumps and 2 leaks

CONCLUSIONS

This procedure can be performed with high efficacy and safety through careful preparation and precise surgical steps. Using stents, fluoroscopy, and postoperative admission can be avoided in most cases.

OUTPATIENT INFANT OPEN PYELOPLASTY: STEP-BY-STEP VIDEO ON A SINGLE INSTITUTION'S EXPERIENCE WITH A STANDARDIZED TECHNIQUE

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PURPOSE

Ureteropelvic junction obstruction (UPJ) is a common cause of antenatal hydronephrosis, often benefiting from a pyeloplasty in infancy. The traditional gold standard is open surgery, however growing interest in minimally invasive techniques (MIT) continue to challenge this notion. Proponents of MIT argue that there is value in post operative parameters and cosmesis. In this video, we showcase a standardized open surgical process and present outcomes and recovery data for infant pyeloplasty.

MATERIAL AND METHODS

We collected the demographics, clinical and radiological information, anesthesia considerations, operative technical details, and post operative data. Intraoperative photographs and videos were captured to document the surgical procedure and highlight key steps of this technique.

RESULTS

In this video, we illustrate the step-by-step surgical process for outpatient infant open pyeloplasty and present outcomes in consecutive cases at a single referral center. These data are presented as a benchmark to compare modern MIS series

CONCLUSIONS

Infant open pyeloplasty remains an effective and safe procedure for UPJ obstruction. With our standardized technique outpatient care is often possible, with very low morbidity and complications. MIS techniques should aim to be equivalent or superior to these results in order to become the new gold standard.

LAPAROSCOPIC APPROACH TO RETROCAVAL URETER IN A PATIENT WITH HORSESHOE KIDNEY AND DUPLICATION OF INFERIOR VENA CAVA.

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PURPOSE

The association of horseshoe kidney with retrocaval ureter (RCU) is exceptional. RCU is a congenital anomaly related to the persistence of the right subcardinal vein. The development of the inferior vena cava (IVC) involves embryogenesis with emergence and regression of multiple segments of it. Up to 50 types of IVC variations have been described. Pre-surgical differential diagnosis must be taken into account because of possible associated operative complications. The objective of this video is to show the surgery of a child with upper urinary tract obstruction due to a RCU with horseshoe kidney and duplication of the vena cava.

MATERIAL AND METHODS

We present the case of a 9-year-old boy, who presented with lumbar pain and right horseshoe kidney hydronephrosis suggestive of pyeloureteral junction obstruction (PUJO) on ultrasound. Computed tomography showed PUJO, anomaly of the IVC with duplicity and suspected RCU. The 3D reconstruction adequately showed the vascular anatomy without being able to visualize the ureter. It was decided to perform laparoscopic ureteroureterostomy.

RESULTS

Surgery was uneventful, and it is described on video with the aid of figures. The transposed ureter reached the renal pelvis without tension, so it was decided to perform pyeloplasty. The child had urinary leakage which was managed conservatively by opening the transanastomotic catheter with extension and he was discharged on the 6th postoperative day. He is currently without episodes of pain and with ultrasound improvement of the hydronephrosis.

CONCLUSIONS

Laparoscopic approach for CRU is a technique that allows correct visualization of the vascular anatomy and its relationships. The preoperative study using imaging techniques allows the correct identification of vascular anomalies.

ENHANCING URETHRAL MEATUS CREATION IN CLOACAL MALFORMATIONS: A NEW TECHNIQUE

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PURPOSE

The aim of this study was to describe a novel urethromeatoplasty technique for cloacal repair patients, focusing on improving long-term functional and cosmetic outcomes in those with complex cloacal anomalies undergoing reconstructive surgery.

MATERIAL AND METHODS

A retrospective case series was conducted on 50 patients with cloacal anomalies who underwent primary cloacal repair between 2020 and 2024. Of these, 24 patients underwent urogenital (UG) sinus separation with vaginal and anorectal pull-through and 17 underwent total urogenital mobilization (TUM). The urethromeatoplasty technique was applied to 6 patients who underwent UG separation and 5 patients who underwent TUM. The procedure involved a modified approach to neomeatus creation, positioning the meatal opening in a more typical location and recreating the vaginal vestibule for both functional and aesthetic optimization. Key components of the technique included careful dissection and reconfiguration of the anterior and posterior urethra to form a patent, orthotopic meatus that was slightly recessed and inferior to the clitoris, in addition to creating well-defined labia minora.

RESULTS

Patient outcomes were tracked postoperatively (mean follow-up of 16 months). On follow-up, all patients had satisfactory cosmetic results and successful neomeatus creation, with minimal scarring and a well-positioned meatus. There were no instances of stenosis or fistula. One patient required clean intermittent catheterization, three patients underwent vesicostomy for bladder management, and seven patients did not require assisted bladder emptying.

CONCLUSIONS

This novel urethromeatoplasty technique offers a promising option for cloacal anomaly repair, combining functional success with improved cosmetic outcomes.