29th Congress of the ESPU

11 – 14 April, 2018, Helsinki, Finland

Abstract Book

Content

Word of Welcome

Dear colleagues,

It is a great honor and pleasure to welcome you to the 29th ESPU Congress in Helsinki. Helsinki is wonderful city and among one of the best places to live in many evaluations. Helsinki has a great coastline and archipelago. However, Helsinki is the most northern capital in EU, and the spring is still very early in April. This winter we have had quite a lot of ice and snow. Despite, we do our best to make a warm and friendly event, it is advisable to check the forecast, when you start packing. If you feel that the weather is a bit chilly, you can enjoy Finish sauna for example in "Allas Sea Pool", which is locating close to Congress venue. The Congress venue is in "Marina Congress Center", which situates in the city center at the seaside and the Congress hotel is locating opposite to the venue. The hotel is within walking distance to the Welcome reception and the Gala dinner. There are good train and bus connections from the airport to the city center and it is possible to take a tram or walk from railway station to Congress venue.

I am confident that you find the Congress program fruitful and you find also practical ideas. I hope that you will see many old and new friends and have a possibility for lively and inspiring discussions.

You are very welcome to Helsinki and 29th ESPU Congress.

Seppo Taskinen
Chair of Congress

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HS: HISTORY SESSION

Moderator: S. N. Cenk Büyükünal (Turkey)

ESPU Meeting on Wednesday 11, April 2018, 17:15–18:45

17:15–17:18

Opening remark by the president of ESPU

Guy BOGAERT (Belgium)

17:18–17:38

HS-1

Invited Lecture: HISTORY OF CHILD HEALTH IN FINLAND

Heikki VUORINEN (Finland)

17:38–17:53

HS-2

Invited Lecture: HISTORY OF PEDIATRIC SURGERY AND PEDIATRIC UROLOGY IN HELSINKI

Päivi SALMINEN (Pediatric Surgeon, Helsinki, Finland)

17:53–17:58

HS-3

A SHORT EPITAPH FOR Prof. Dr. ALFRED SIGEL

Wolfgang RÖSCH (Regensburg, Germany)

17:58–18:13

HS-4 (LO)

FOLEY, MORE THAN JUST A CATHETER. F. E. B. FOLEY'S CONTRIBUTIONS TO PEDIATRIC UROLOGY

Ricardo GONZÁLEZ

Auf der Bult Kinder-und Jugendkrankenhaus, Hannover and Charité Universitätsmedizin, Berlin, GERMANY

ABSTRACT

Frederic Eugene Basil Foley (1981–1966) was a distinguished urologist. Graduated from Johns Hopkins School of Medicine in 1918, worked with William Halstead and Harvey Cushing, certified by the American Board of Urology in 1937.

Foley worked as a urologist in Boston, Massachusetts and became chief of urology Ancker Hospital, St. Paul, Minnesota. (Ancker hospital was renamed St. Paul Ramsey Medical Center and is now known as Regions Hospital.)

He was very innovative and made many contributions to urology. Especially significant for our field of interest are:

- Balloon catheter 1921 – 37
- Ipsilateral uretero-ureterostomy 1928
- Y-V Pyeloplasty 1937
- Artificial sphincter 1946

His life and accomplishments will be discussed in this presentation.

18:13 – 18:28

HS-5 (LO)

INFORMED CONSENT FOR A PEDIATRIC UROLOGICAL PROCEDURE IN 16TH CENTURY

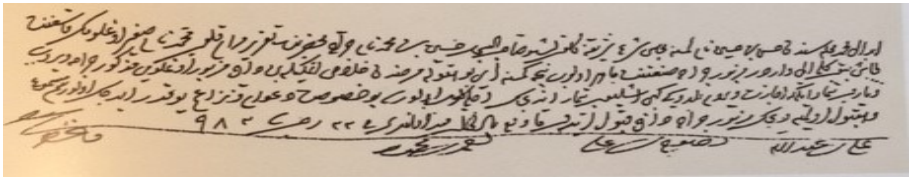
Nil TEKGUL[1] and Serdar TEKGUL[2]

1) Harvard University, Center for Middle Eastern Studies, Cambridge, USA - 2) Hacettepe University, Department of Urology, Div of Pediatric Urology, Sihhiye Ankara, TURKEY

ABSTRACT

The script presented dating October 27th 1575 is retrieved from judicial court registers of Bursa, Turkey. As evidenced from this case, the father of a boy officially declared at the court, in front of the witnesses and the “kadi” (judge), that he had given his consent to Huseyin bin Mehmed (a skillful surgeon in his field) to do a medical intervention to his son who is suffering from hard and painful mass in the groin (most probably a testicular torsion or strangulated hernia). He also confirmed that if anything happens to his son during and after surgery he would not sue the surgeon or hold him responsible.

Similar approvals of the patients given to their physicians regarding medical interventions are recorded in Ottoman judicial court registers from early 16th century. Such cases of official approval are usually termed as “informed consents” (riza senedi) by modern scholars due to their resemblance to today’s concept of “informed consent” for basically two reasons. Under Islamic criminal law, provisions regarding offences against persons, i.e. homicide and wounding, belonged to the field of private law; hence, the victim or the victim’s heirs may demand retaliation (qisas) if the killing or wounding was intentional or financial compensation (diyet- blood money). Therefore, the surgeons demanded an official consent from their patients to secure themselves from any financial liabilities. This paper, by utilizing Ottoman judicial court records with a specific focus on pediatric urological cases, examines the cases of medical interventions in which the patients give their consent to their surgeons. It aims to shed light on the motivations of the patients in giving their consent and furthermore understand medico-legal practices during the Ottoman pre-modern era.



18:28–18:43

HS-6 (LO)

THE DEVELOPMENT OF THE FOWLER-STEPHENS ORCHIOPEXY

Alexandra REHFUSS and Barry A. KOGAN

Albany Medical Center, Albany, New York, USA

ABSTRACT

Anatomical descriptions of the undescended testicle date back to the eighteenth century. In 1762, John Hunter was the first to describe the abdominal position of the fetal testis, the gubernaculum, and the descent of the fetal testis into the scrotum. These findings paved the way to understanding the etiology of the undescended testicle. It was not until 1871 that the first attempt at correcting cryptorchidism was recorded. However, early attempts were complicated by morbidity secondary to the high risk of infection at that time. As surgeons continued to work on modifying the orchiopexy procedure, it was recognized that the high intra-abdominal testis posed a unique challenge. In 1959, Robert Fowler joined Douglas Stephens' research unit at the Royal Children's Hospital in Melbourne, and together they made groundbreaking discoveries of testicular vascular anatomy. They found that the testicular artery has collateral communications with the vasal and cremasteric arteries, and therefore high ligation of the testicular artery allows for collateral blood flow to the testicle while affording more length to the spermatic cord and therefore a successful orchiopexy. Since its' inception, the Fowler-Stephens orchiopexy has evolved with technological advances. The implications of Fowler and Stephens' discovery have been long lasting and have resulted in improved salvage rates of intra-abdominal testes.

MWC: Special Session "MY WORST COMPLICATION"

Moderator: Emilio Merlini (Italy)

ESPU Meeting on Friday 13, April 2018, 10:50–11:30

10:50–10:55

MWC-1 (LO)

NECROTIZING FASCIITIS IN A CHILD: A CASE REPORT AFTER ORCHIDOPEXY

Anne Carolien BOUMA-HOUWERT, Panagiotis MITSOS and Aart J. KLIJN

WKZ Utrecht, Urology, Utrecht, NETHERLANDS

PURPOSE

Necrotizing fasciitis (NF) is a rare fulminant and rapidly spreading infection with a high mortality rate of 15,4 %.

MATERIAL AND METHODS

We report the case of a 2-year old boy with NF after orchidopexy and a literature review.

RESULTS

A 2 year old boy underwent bilateral orchidopexy. One day later he presented with scrotal pain and vomiting. He had no fever, was tachycardic, had no tender abdomen and an edematous painfull scrotum. Blood laboratory showed a slightly increased serum C- reactive protein (45 mg/L). Ultrasound revealed a hematoma of the scrotum. Six hours later he became febrile, had systemic signs of sepsis and edematous changes of the skin without colouring. He was admitted on intravenous antibiotics. Twelve ours after admission, progression of edema and colouring of the skin was observed. The child was urgently operated for exploration. Surgical debridement involved the lower abdominal wall, scrotum and the upper limbs. Intraoperative resection revealed severely inflamed, necrotic, nonviable tissue. Wound cultures revealed a Streptococcus pyogenes and histopathology confirmed the diagnosis NF. A second debridement was performed eight hours later and final wound closure started after seven days. He was discharged 33 days after admission.
A Pubmed literature search was conducted from 1993 till now: no cases of NF after orchidopexy were found.

CONCLUSIONS

We report the case of a 2-year old boy with NF after orchidopexy and his treatment which to the authors' knowledge has not been previously described.

10:55–11:00

MWC-2 (LO)

POSTOPERATIVE GLANS ISCHEMIA

Alex TURNER

Leeds Children's Hospital, UK

11:00–11:05

MWC-3 (LO)

PARTIAL GLANS AMPUTATION: WHAT CAN WE DO AFTER REPLANTATION TO PREVENT MEATAL STENOSIS?

Katja P. WOLFFENBUTTEL

Erasmus MC - Sophia Children's Hospital, Pediatric Urology, Rotterdam, The Netherlands

11:05–11:10

MWC-4 (LO)

COLO-URETERIC (STUMP) FISTULA: POST RETROPERITONEOSCOPIC NEPHROURETERECTOMY

Sajid SULTAN

Pakistan

11:10–11:15

MWC-5 (LO)

GIANT CALICEAL DIVERTICULUM

Martin KAEFER

Indiana University, USA

11:15–11:30

Discussion

S1: BASIC RESEARCH 1

Moderators: Yazan Rawashdeh (Denmark), Christian Radmayr (Austria)

ESPU Meeting on Wednesday 11, April 2018, 13:30–15:00

13:30–13:33

S1-1 (PP)

★ HISTOLOGIC FEATURES OF THE EXSTROPHIC BLADDER BEFORE AND AFTER DELAYED PRIMARY REPAIR: RESULTS OF AN ONGOING PROSPECTIVE STUDY

Peter RUBENWOLF [1], Fabian EDER [2], Stefanie GOETZ [3], Anne-Karoline EBERT [4] and Wolfgang H. ROESCH [4]

1) University Hospital Frankfurt, Urology, Frankfurt, GERMANY - 2) University Hospital Regensburg, Pathology, Regensburg, GERMANY - 3) University Hospital Regensburg, Urology, Regensburg, GERMANY - 4) University Hospital Regensburg, Pediatric Urology, Regensburg, GERMANY

PURPOSE

To investigate the exstrophic bladder at the time of primary bladder closure and subsequently during secondary procedures in view of histologic alterations and discuss the findings in terms of potential clinical implications.

MATERIAL AND METHODS

At least 2 bladder biospies from patients with classic BE were obtained a) at the time of delayed primary repair, b) during secondary reconstructive procedures and c) during subtotal cystectomy for failed reconstruction. Specimens were examined by a uropathologist for edema, fibrosis, inflammatory, metaplastic and proliferative changes.

RESULTS

As yet bladder specimens from 97 patients (mean age 6,4, range: 0,11–25 years) were analysed. Edema, fibrosis, inflammatory and proliferative changes were observed in all 3 groups. Dysplastic or malignant changes were not present. Detailed results are shown in Table 1.

GROUP/Number of pts/ mean age Histologic feature (%)	A - Primary delayed closure n=45; 0,17 yrs.	B - Secondary procedures n=37; 7,8 yrs	C - Cystectomy (failed reconstruction) n=15; 11,1 yrs
Edema	55	40	20
Fibrosis	48	69	73
Inflammation	95	43	80
Squamous metaplasia	80	43	73
Cystitis cystica/glandularis	83	57	87
Intestinal metaplasia	0	14	53
Dysplasia/malignant neoplasia	0	0	0

CONCLUSIONS
Our findings provide evidence of a broad range of histologic alterations of the exstrophic bladder. Persistent and partly progressing structural, inflammatory and proliferative changes are present in a substantial proportion of patients despite succesful repair in early infancy. Importantly, intestinal metaplasia, a potentially premalignant change, was not observed in any biopsy taken at primary bladder closure, but only years thereafter during subsequent procedures. Since the natural history of this lesion in the exstrophic bladder is unknown, these patients require lifelong surveillance.

13:33–13:36

S1-2 (PP)

PERSISTENT UROTHELIAL DIFFERENTIATION CHANGES IN THE RECONSTRUCTED EXSTROPHIC BLADDER: A PRIMARY STRUCTURAL DEFICIT?

Peter RUBENWOLF[1], Fabian EDER[2], Stefanie GOETZ[3], Martin PROMM[4] and Wolfgang H. ROESCH[4]

1) University Hospital Frankfurt, Urology, Frankfurt, GERMANY - 2) University Hospital Regensburg, Pathology, Regensburg, GERMANY - 3) University Hospital Regensburg, Urology, Regensburg, GERMANY - 4) University Hospital Regensburg, Pediatric Urology, Regenburg, GERMANY

PURPOSE
To investigate whether the urothelial differentiation changes observed in the unclosed bladder template persist after succesful delayed bladder closure in early infancy.

MATERIAL AND METHODS
Bladder biopsies from 34 children obtained during secondary reconstructive procedures were examined by immunohistochemistry for expression cytokeratin 20, cytokeratin 13, claudin 4 and uroplakin IIIa, all well characterised markers associated with the terminally differentiated urothelial phenotype (group 1). Findings were compared with both bladder tissues harvested at the time of primary delayed repair (group 2) and appropriate (non-exstrophy) controls (group 3).

RESULTS
32 % of bladder specimen from children having previously undergone succesful primary bladder closure displayed a regular urothelial morphology including umbrella cells and a fully differentiated urothelial phenotype with regular expression of all 4 markers, as opposed to 4 % of bladders at the time of primary reconstruction. Detailed results are presented in Table 1.

Group/Marker (regular expression, %)	Cytokeratin 13	Cytokeratin 20	Claudin 4	Uroplakin IIIa	Regular expression of all 4 markers
Group 1: reconstructed bladder (n=34)	47	35	71	35	32
Group 2: unclosed bladder (n=32)	34	4	48	4	4
Group 3: controls (no exstrophy; n=16)	93	97	89	95	89

CONCLUSIONS
Our finding provide prima facie evidence of persisting structural and phenotypic changes in two-thirds of exstrophic bladders despite early bladder closure. In accordance with current genetic findings, we hypothesize a primary genetically-determined structural and functional urothelial deficit alongside a maturational delay and acquired secondary changes due to inflammatory and mechanical irritation of the unclosed urothelium. The translational value of our findings as regards the developemental potential of the bladder needs to be established in future studies.

13:36–13:39

S1-3 (PP)

TERMINAL MARKERS OF UROTHELIAL DIFFERENTIATION: A COMPARISON OF NEWBORN AND DELAYED BLADDER EXSTROPHY CLOSURES TO CONTROLS

Matthew KASPRENSKI[1], Zhiming YANG[2], Mahir MARUF[1], Karl BENZ[1], Jonathan EPSTEIN[2], Heather DI CARLO[1] and John GEARHART[1]

1) Johns Hopkins Hospital, Johns Hopkins Medical Institutions, Division of Pediatric Urology, James Buchanan Brady Urological Institutions, Baltimore, USA - 2) Johns Hopkins University School of Medicine, Department of Pathology, Baltimore, USA

PURPOSE

There is debate in pediatric urology whether primary closure in patients with bladder exstrophy (BE) should be performed as a newborn or in the delayed setting. The authors examined expression of urothelial markers of terminal differentiation in exstrophic bladders obtained at the time of primary closure in both newborn and delayed closures.

MATERIAL AND METHODS

Bladder biopsies were obtained between 2012 and 2017 from 36 BE patients at the time of primary closure (10 newborn and 26 delayed closures). These specimens were compared to bladder specimens from normal infants (age 7 days to 3 years). Specimens underwent immunohistochemical staining for uroplakin II (UPII) and p63. Specimens were graded by a blinded pathologist using a scoring system of 0–3.

RESULTS

When compared to controls, delayed closures had a lower proportion of UPII grade 3 expression (0 % vs 62.5 %; $p<0.001$) and a higher proportion of UPII grade 0 expression (81.5 % vs 0 %; $p<0.001$). This trend persisted in the neonatal BE closure and control comparison. Neonatal closures had a lower proportion of UPII grade 3 expression than controls (10 % vs 62.5 %; $p=0.048$) and higher proportion of UPII grade zero expression (40 % vs 0 %; $p=0.048$). When comparing delayed to neonatal closures, a higher proportion of UPII grade 0 was found in the delayed closures (81.5 % vs 40 %; $p=0.013$). There was no statistical difference in p63 expression scores when the three groups were compared.

CONCLUSIONS

The delayed closure group had decreased UPII expression compared to the control group and the newborn group, suggesting less urothelial differentiation.

13:39 – 13:42

S1-4 (PP)

RAPAMYCIN REGULATION OF CORE CLOCK GENES IS ASSOCIATED WITH ALTERED DE-OBSTRUCTION SIGNATURES COORDINATE WITH PHYSIOLOGY

Karen AITKEN[1], Annette SCHRODER[2], Jia-Xin JIANG[3], Aliza SIEBENALLER[4], Thenuka THANABALASINGHAM[5], Martin SIDLER[6] and Darius BAGLI[7]

1) PGCRL room 159420TUV, DSCB, Sickkids Research Institute, Toronto, CANADA - 2) Hospital for Sick Children, Urology Division3, Department of Surgery; Developmental and Stem Cell Biology, Research Institute, Toronto, CANADA - 3) Hospital for Sick Children, University of Toronto, Developmental and Stem Cell Biology, Research Institute; Department of Physiology, Faculty of Arts a, Toronto, CANADA - 4) Hospital for Sick Children, Developmental and Stem Cell Biology, Research Institute, Toronto, CANADA - 5) H, Developmental and Stem Cell Biology, Research Institute, Toronto, CANADA - 6) Hospital for Sick Children, University of Toronto, Developmental and Stem Cell Biology, Research Institute; Institute of Medical Sciences, Faculty of M, Toronto, CANADA - 7) Hospital for Sick Children, University of Toronto, Developmental and Stem Cell Biology, Research Institute; Department of Surgery, Faculty of Medicine, Toronto, CANADA

PURPOSE

While rapamycin improves smooth muscle phenotype and gene expression patterns during stretch, altered matrix, hypoxia and obstruction(Aitken, 2010, Am.J.Path., Schroder, JUrol, 2013, Jiang, PLOSONE, 2015), the effect of rapamycin on gene expression during de-obstruction(dOB) is unknown. We hypothesized that rapamycin-induced changes in gene expression during dOB point to new pathways with functional relevance.

MATERIAL AND METHODS

Sprague-Dawley female rats underwent PBO by tying a silk suture around the proximal urethra and a 0.9 mm steel rod, leaving only the suture in place. PBO animals were randomized to 6 week PBO or 6 week PBO plus de-obstruction (dOB). dOB were randomized to vehicle (saline) or rapamycin for 6 weeks. Shams were performed over 6 and 12 weeks. High-throughput QPCR was performed to identify genes dysregulated during dOB normalized with rapamycin treatment and correlated with function. Effects of gene products were examined in human SMC by immunofluorescent staining of SMC markers. We used transcription factor binding site programs (DAVID, DIRE). Clock gene dependency of target genes and SMC markers was queried by treating SMC with a reverba agonist (SR9009) and by performing QPCR and immunofluorescence.

RESULTS

IGFBP7, BMP2, and SOD3 correlated with functional improvements in rapamycin treated animals. We identified the E-boxes bound by circadian regulators CLOCK/BMAL or NPAS2/BMAL as a potential sites of transcriptional regulation amongst the three genes. We found that obstruction and dOB upregulated mRNA expression of CLOCK and NPAS2. Rapamycin downregulated mRNA of CLOCK, NPAS2, alongside the 3 physiologic genes, $p<0.01$. SR9009 downregulated several core clock genes alongside IGFBP7, $p<0.01$. Exogenous IGFBP7 increased SMC hypertrophy in vitro.

CONCLUSIONS

Core clock genes direct expression of the de-obstruction-induced rapamycin-responsive gene IGFBP7, concordant with bladder smooth muscle cell hypertrophy.

13:42–13:45

S1-5 (PP)

ROLE OF BDNF IN SUBTOTAL CYSTECTOMY: FOCUS ON SMOOTH MUSCLE

Karen AITKEN[1], Martin SIDLER[2], Aliza SIEBENALLER[3], Thenuka THANABALASINGHAM[4], Arsalan ANEES[5], Paul DELDELGADO-OLGUIN[6] and Darius BAGLI[7]

1) PGCRL room 159420TUV, DSCB, Sickkids Research Institute, Toronto, CANADA - 2) Hospital for Sick Children, University of Toronto, Urology Division3, Department of Surgery; Institute of Medical Sciences4, Faculty of Medicine, Toronto, CANADA - 3) Hospital for Sick Children, Developmental and Stem Cell Biology, Research Institute, Toronto, CANADA - 4) Hospital for Sick Children, Developmental and Stem Cell Biology, Research Institute, Toronto, CANADA - 5) Hospital for Sick Children, University of Toronto, Developmental and Stem Cell Biology, Research Institute; HMB, Faculty of Arts and Sciences, Toronto, CANADA - 6) Hospital for Sick Children, University of Toronto, Developmental and Stem Cell Biology, Research Institute; Department of Physiology, Faculty of Arts a, Toronto, CANADA - 7) Hospital for Sick Children, University of Toronto, Developmental and Stem Cell Biology, Research Institute; Department of Surgery, Faculty of Medicine, Toronto, CANADA

PURPOSE

Dysregulated regeneration is a hallmark in bladder pathobiology, including excessive muscle growth in partial bladder obstruction (PBO). However, rodent bladders show spontaneous regeneration following subtotal cystectomy (STC). Although BDNF is upregulated during PBO, its role in regeneration is undisputed in the brain and other organs. We hypothesize that BDNF is required for regeneration of bladder smooth muscle cell (SMC) in response to STC.

MATERIAL AND METHODS

In Sprague-Dawley female rats, 75 % of the bladder was removed, while the remainder was closed with 7–0 polyglycolic acid sutures forming the STC. These were compared to sham, partial bladder outlet obstructions (using a 4–0 silk suture) and cystotomy controls. BDNF, calponin and myosin were assayed by QPCR and immunofluorescence.

Scratch wound assays were performed on human SMC in 12 well plates utilizing a pipette tip and visualizing by live cell microscopy. Scratched SMC were randomized to treatment with soluble BDNF receptor (TrkB). Scratch or no wounds were assayed for BDNF by QPCR. Exogenous BDNF was added to SMC at 2.5, 5 and 10 ng/mL for 24–48 hours, followed by cell by cell counting, immunofluorescence for calponin and western blotting for myosin expression.

RESULTS

Results: Various BDNF isoforms were differentially upregulated in STC and PBO, $p<0.04$, significantly increasing in both STC (2-fold) and PBO (30–100 fold). High dose BDNF induced dedifferentiation (decreased calponin and myosin), whereas low dose increased proliferation. Scratch wounding increased BDNF expression 2-fold, $p<0.003$. Scratch-induced migration was decreased by soluble TrkB by 15 % ($p<0.02$).

CONCLUSIONS

Despite BDNF's association with hypertrophic PBO and neurogenic growth, it appears to have important functions in endogenous regeneration of the smooth muscle though at lower doses. Further work will examine the regulatory elements involved, differences between in vivo and in vitro models and the differential effects of high vs low dose BDNF SMC.

13:45–13:48

S1-6 (PP)

MICRORNA-132 IN BLADDER WOUND HEALING

Xi LIU[1], Clara Ibel CHAMORRO[1], Dongqing LI[2], Ning XU LANDÉN[2], Behnaz Khalilzadeh BINICY[3] and Magdalena FOSSUM[4]

1) Karolinska Institutet, Women's and Children's Health, Stockholm, SWEDEN - 2) Karolinska Institutet, Medicine, Stockholm, SWEDEN - 3) Örebro Universitet, Medicine, örebro, SWEDEN - 4) Karolinska Institutet/Karolinska Hospital, Women's and Children's Health/Patient Area for Children with urogenital malformation, Stockholm, SWEDEN

PURPOSE

In regenerative urogenital medicine, we hypothesize that a deeper understanding of normal bladder wound healing could further enlighten our understanding of essential factors related to regenerative medicine in healthy and diseased tissues.

MicroRNAs (miRs) are a group of conservative small non-coding RNAs, crucial for post-transcriptional regulation in most biological events including wound healing.

In skin, miR-132 has been reported as a key regulator for keratinocyte migration, proliferation and inflammation.

The aim of this study was to analyse if miR-132 could be of importance to enhance urothelial cell migration and proliferation for wound closure.

MATERIAL AND METHODS

Human urothelial cells were isolated from bladder washings or biopsies. Cells were cultured until confluence before performing a standardized 2D scratch assay. The expression of miR-132 was analysed upon wounding after 6 h, 12 h, 24 h using real-time quantitative PCR by the – delta delta Ct with an internal control for U6 and a non-scratch control group (6 replicates per group).

RESULTS

The area of wound gap was significantly reduced within 24 h, miR-132 was up-regulated 1,8 times 6 h after wounding. At 12 h and 24 h after wounding, miR-132 was up regulated 1,4 times. Same results were found in primary urothelial cells isolated from bladder washes as from bladder biopsies.

CONCLUSIONS

Our results indicate that miR-132 expression was induced after wounding, and demonstrated a similar expression pattern as in normal skin wound healing. miR-132 could be an important factor for promoting urinary bladder wound healing, most probably by enhancing urothelial migration and suggests us to proceed with validations including functional studies.

13:48 – 13:51

S1-7 (PP)

URETRAL REPLACEMENT USING TUBULARIZED COLLAGEN SCAFFOLD IMPLEMENTED WITH ADIPOSE DERIVED STROMAL CELLS

Melodie JURICIC[1], Kalitha PINNAGODA[2], Marion BOURDENS[3], Nicolas GAIDE[4], Elisabeth JEUNESSE[4], Matthias HANS LARSON[5], Isabelle RAYMOND-LETRON[4], Valerie PLANAT[3] and Olivier ABBO[1]

1) Hôpital des Enfants - CHU Toulouse, Pediatric Surgery Department, Toulouse, FRANCE - 2) CHUV Lausanne -EPFL, Pediatric surgery -DMPC, Lausanne, SWITZERLAND - 3) Stromalab - UMR 1031 - Inserm - CNRS, Toulouse, FRANCE - 4) ENVT, Toulouse, FRANCE - 5) EPFL, Lausanne, SWITZERLAND

PURPOSE

Tissue engineering has emerged as a promising alternative approach in uretral reconstruction.
Pinnagoda and al (Acta Biomat 2016) have successfully implanted an acellular double-layered collagen scaffolds as grafts for uretral replacement in a rabbit model.
The value of cell-seeding scaffold to repair uretral defects has been underlined by several studies. Among the potential useful, Adipose derived stem cells (ADSCs) are well described, with differenciation, proangiogenic and immunomodulative properties.
Therefore the aim of our study was firstly to seed ADSC into the previously described tubular collagen scaffold in order to analyze the in vitro features of the cells into the scaffold. Secondly we aimed to determine the role of the cells concerning the scaffold integration in a rabbit model of urethral defect.

MATERIAL AND METHODS

ADSCs were isolated from rabbit adipose tissue, then implemented during the polymerisation of the collagen tubularized scaffold. In vitro analysis concerned cellular morphology, viabily, proliferation and gene expression profile.
In 10 New Zealand Rabbits, 2 cm long grafts were sutured to replace subtotal excision of uretra. They were prospectively randomised in 2 groups of 5 rabbits depending on the presence of seeded ADSC into the collagen scaffold.
Histological and clinical results were compared after 10 days.

RESULTS

ADSCs within collagen scaffold retains characteristic morphology, are viable, proliferate, and have a gene expression profile comparable to ASCs growing in 2D culture.
In vivo, clinical and histological evaluation 10 days after uretral reconstruction demonstrated integration and early epithelialization in both groups. An increase inflammation appareance was observed in the « ASCs group » where the cells were still present and healthy in the implented group.

CONCLUSIONS

Tubiular Collagen scaffold seeded with ADSCs is feasible and may offer a useful alternative in the future for patients requiring tissular replacement. Further studies with longer.

13:51 – 14:12

Discussion

14:12–14:15

S1-8 (PP)

DEVELOPMENT OF SYNTHETIC ORGAN MODEL FOR RENAL PELVIS AND URETER SURGERY FOR LAPAROSCOPIC TRAINING

Baran TOKAR[1] and Emin BAKAN[2]

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PURPOSE

Laparoscopic reconstructive surgery in pediatric urology needs special training. Surgeon needs to make practice on models simulating the real organs. The objective of this study is to develop a prototype that could serve for training of laparoscopic pelvis and ureter surgeries.

MATERIAL AND METHODS

Section of Pediatric Urology having experience on laparoscopy and Department of Animation form Faculty of Fine Arts worked together to develop a prototype. The study was organized with steps including computer modeling, molding and model formation.

RESULTS

Computer modeling of each steps were designed. In first step, a soft elastic flat plaque was produced from polymers to test suitability for cutting and suturing. In second step, mold was formed and lumen formation was succeeded from the same materials. In third steps, a mold with three d printing and a prototype that could be adaptable for training of laparoscopic pelvis and ureter surgeries was produced. Procedures such as laparoscopic pyeloplasty and ureteroureterostomy were performed on the prototype in training box with success.

CONCLUSIONS

Synthetic models simulating the real organs may provide a better hands-eye coordination and adaptation to the procedure in laparoscopic training. Well-constructed and chip training models are needed for laparoscopic reconstructive pelvis and ureter surgery teaching in pediatric urology.

14:15–14:18

S1-9 (PP)

HYDROGEL SCAFFOLDS FOR DETRUSOR REGENERATION IN RATS AFTER PARTIAL DETRUSORECTOMY

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PURPOSE

The use of intestinal tissue as a gold standard for bladder repair in children suffering from end-stage bladder disease is associated with significant long-term complications. Thus, there is a strong clinical need for alternative sources of stable and reliable bladder tissue. Our study aims to bioengineer functional detrusor muscle using cells in hydrogel scaffolds.

MATERIAL AND METHODS
Rat bladder smooth muscle (SMC) and SMC-like adipose-derived stem cells (pADSC) were co-cultured in a 1:1 ratio. Proteomic analysis of 1:1 cell mix secretome vs controls was performed to assess growth factor expression. Polyethylene glycol (PEG) or compressed collagen (CC) scaffolds were used alone or pre-seeded with SMCs and pADSC (1:1) prior to implantation into rat bladders after partial detrusorectomy. Bladders were harvested after four weeks, embedded in paraffin, sliced and analyzed for morphology, phenotype, vascularization and innervation.

RESULTS
Secretome analysis showed the presence of pro-angiogenic (VEGFA, ANG) and neurotropic factors (NENF, GMFB, LIF, PTN, MANF) in the 1:1 cell mix, mostly enhanced compared to the SMC control. After detrusorectomy the defect was successfully covered by PEG and CC. After four weeks PEG alone was encapsulated and PEG+cells was mostly degraded. CC±cells did not cause inflammation, fully integrated into bladder with CC+cells exhibiting distributed vascularization, improved smooth muscle formation and neuronal ingrowth.

CONCLUSIONS
We have shown that the combination of CC with SMC-pADSC in 1:1 ratio is a promising scaffold for detrusor bioengineering in a rat detrusorectomy model and see this as a first step for whole bladder wall reconstruction.

14:18–14:21

S1-10 (PP)

IN-VIVO REGENERATION OF BLADDER MUSCULAR WALL WITH DECELLULARIZED BLADDER MATRIX: AN EXPERIMENTAL STUDY

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PURPOSE
To determine histological aspects and biocompatibility of decellularized bladder graft for bladder augmentation using rat and rabbit models.

MATERIAL AND METHODS
Rat and rabbit bladders were decellularized and underwent different laboratory investigations to evaluate the efficacy of decellularization. Rats of control group (n=8) underwent sham surgery. After partial cystectomy in rats of the experimental group (n=8), the bladder was grafted with a patch of rat decellularized bladder. The same procedure was performed in 16 rabbits by the application of rabbit decellularized grafts. Biopsies were taken at 1, 3, and 9 months postoperatively for further histological investigations.

RESULTS
Total cell removal with preservation of extracellular matrix structure was confirmed in decellularized bladders. All bladders demonstrated a spherical shape without stone formation, or graft extrusion in none of the animals. Histological examination after 1 month of follow-up demonstrated few cells at the border of the graft in rats and rabbits. After 3 months of operation, the region of the graft was indistinguishable from natural bladder and continuity of transitional epithelium of natural bladder on the decellularized grafted bladder tissue was confirmed. The organization of muscle layers

was similar to native bladder muscle layers after 9 months of transplantation in all animals. CD34 endothelial progenitor cells, CD31 microvessels, α-smooth muscle actin (α-SMA), S100, cytokeratin AE1/AE3, vimentin, and synaptophysin were expressed highly in immunohistochemical staining after 9 months of operation.

CONCLUSIONS

The results confirmed that decellularized bladder can be considered as a reliable natural scaffold and viable material for bladder augmentation in rats and rabbits.

14:21 – 14:24

S1-11 (PP)

URINARY BLADDER AUTO-AUGMENTATION: HOMOLOGOUS USE OF A DECELLULARISED BIOMATERIAL

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PURPOSE

New approaches are needed to improve the clinical outcome and quality of life in paediatric patients with severely contracted, fibrotic and thickened-wall urinary bladders. Numerous surgical techniques have been proposed including auto-augmentation, where the detrusor muscle is split to allow the urothelium to bulge, increasing bladder capacity and compliance. Although considered a useful intervention when performed in the pre-end-stage failing bladder, the risk of perforation has inhibited widespread uptake of the technique. In this study, we report the use of a porcine acellular bladder matrix (PABM: Bolland et al. Biomaterials 2007; 28(6):1061–70) to support the exterior aspect of the auto-augmented bladder in a large animal surgical model.

MATERIAL AND METHODS

PABM was produced from full thickness porcine bladders. Six large landrace female pigs (average weight: 23.65 kg) underwent urinary bladder auto-augmentation, the defect then being covered with 4x3 cm patch of PABM over the bulging mucosa and held in place by absorbable sutures. The tissue histology was investigated post-mortem in animals after a four month follow-up.

RESULTS

No intra-operative complications occurred and all pigs recovered and voided normally post-operatively. Five animals were followed-up for 4 months, but one animal was sacrificed after 18 days due to development of a small bowel perforation. All six bladders were recovered and histology showed that the patch material had undergone at least partial cellular integration, with no evidence of inflammation.

CONCLUSIONS

Strength and compliance properties of PABM make it an ideal biomaterial in reconstructive urological surgery. These first surgical results suggest an application for PABM in homologous urinary bladder auto-augmentation.

14:24–14:27

S1-12 (PP)

MUCOSECTOMY DISRUPTING ENTERIC NERVOUS SYSTEM MAY BE CONTRIBUTING TO FLAP CONTRACTION IN ILEOCYSTOPLASTY WITH SEROMUSCULAR ILEAL FLAP

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PURPOSE

Bladder augmentation with seromuscular ileal flap is a promising alternative approach for mucus free bladder augmentation, however the contraction of the flaps remains a major concern. Abnormal enteric nervous system (ENS) is responsible for failure of relaxation of the intestinal muscle in motility disorders like Hirschsprung disease, Intestinal Neuronal Dysplasia or Hypoganglionosis. In mammals submucosal enteric nervous plexus contains nitrergic inhibitory motoneurons responsible for muscle relaxation. We hypothesised mucosectomy disconnects submucosal nervous plexus and the myenteric plexus resulting in flap contraction.

MATERIAL AND METHODS

After ethical approval Ileal mucosectomy was performed in 5 anesthetised pigs. In group I. only the mucosa was scraped off with forceps (sero-musculo-submucosal flap) while in Group II. the mucosa and submucosa was pealed off in one layer (sero-muscular flap). The width of the flaps was measured before and after mucosectomy. The ENS was assessed by Neurofilament (NF) immunohistochemistry in conventional sections, and by Nadph-d enzyme histochemistry in Whole-mount preparation.

RESULTS

The flaps contracted from the original 100 % width to 81,68 +/- 4,25 % in Group I. and to 72,675 +/- 5,36 in Group II. ($p = 0,002$). Equal Variance Test showed significant difference between Group I. and II. ($p=0.009$). The NF immunohistochemistry revealed the submucosus nervous plexus containing nitrergic inhibitory neurons was disconnected from the myenteric plexus in Group II.

CONCLUSIONS

Mucosectomy results in significant contraction of the seromuscular flap. This may be explained with disrupted ENS.

14:27 – 14:30

S1-13 (PP)

★ ESWT PROTECTS FROM BLADDER DYSFUNCTION AFTER TRAUMATIC SPINAL CORD INJURY VIA A TOLL-LIKE RECEPTOR 3 DEPENDENT MECHANISM

Felix NÄGELE[1], Angela AN[1], Michael GRABER[1], Christian KREMSER[2], Daniela LOBENWEIN[3], Bernhard HAID[4], Leo PÖLZL[5], Jakob HIRSCH[1], Elke KIRCHMAIR[1], Michael GRIMM[1], Johannes HOLFELD[1] and Can TEPEKÖYLÜ[1]

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PURPOSE

Traumatic spinal cord injury (TSCI) causes neurogenic bladder dysfunction, which predisposes to urinary tract infections (UTI) and, ultimately, upper tract damage leading to renal failure. In the present mouse model, UTIs are the main cause of death after TSCI. Neuroprotective effects of low-energy shock wave treatment (SWT) via a toll-like receptor 3 (TLR3) dependent mechanism were described previously. We hypothesised that SWT after TSCI prevents bladder dysfunction by minimising neurodegeneration.

MATERIAL AND METHODS

Clip-contusion TSCI was performed in either C57BL/6 wild type (WT) or TLR3 knockout (TLR3-/-) mice (n=20 per group). Randomly assigned treatment groups (n=10 WT and n=10 TLR3-/-) received SWT (500 shocks / 500 J/mm2) 14 days post-operatively. All animals underwent high resolution 3D MRI imaging after 72 days of follow-up. Mortality was recorded, spinal cord scar size and residual urine volumes were measured using OsiriX software.

RESULTS

MRI measurements showed statistically significant reduced residual urine volumes (0.25+/-0.05 mm3 vs. 0.82+/-0.08 mm3, $p<0.05$) and less spinal cord scarring (0.85+/-0.05 mm2 vs. 2.6+/-0.3 mm2) in treated WT animals. Overall survival was higher in treated WT animals compared to the untreated control group (9 vs. 7, n.s.). Shock wave effects were abolished in TLR3 knockout groups (residual urine volume: 0.9+/-0.2 vs. 0.65+/-0.35, n.s.; spinal cord scar size: 1.7+/-0.2 mm2 vs. 1.4+/-0.03 mm2, n.s.).

CONCLUSIONS

SWT prevents damage to bladder function after TSCI in a mouse model. This may indicate a possible novel strategy of treating neurogenic bladder dysfunction after acute spinal injury.

14:30–14:33

S1-14 (PP)

LONG TERM VOIDING DYSFUNCTION IN A MURINE MODEL OF BLADDER FUNCTION DISTURBANCE IN EARLY LIFE

Nao IGUCHI[1] and Duncan WILCOX[2]

1) University of Colorado AMC, Surgery, Aurora, USA - 2) Children's Hospital Colorado, Aurora, USA

PURPOSE

Disturbance of bladder function in early life contributes to lifelong bladder dysfunctions, however, the underlying mechanism remains to be elucidated. Voiding in neonatal mice depends on the perigenital-bladder reflex triggered by their mother licking the perineum until voluntary bladder control emerges. Therefore neonatal maternal separation (NMS) causes interference of normal bladder function in mice. This study aimed to examine the effects of early life voiding perturbation on long-term bladder function using NMS protocol in mice.

MATERIAL AND METHODS

Newborn mouse pups were divided into control and NMS groups. NMS pups were removed from their mother and housed individually (6 h/day) from postnatal day 2 to 14. Long-term effects of NMS on bladder function were assessed by void spot assays at 3–5 week-old, in vitro by detrusor contractility studies and urodynamic study (UDS) at 6 week-old.

RESULTS

NMS caused a significant decrease in muscarinic receptor-mediated detrusor contractility without affecting whole nerve-mediated contractility compared to control mice. NMS mice showed frequent small voids persistently even after control mice established voluntary void control. UDS showed detrusor overactivity in NMS mice and significantly decreased functional capacity compared with control group.

CONCLUSIONS

NMS caused an alteration of neural control of detrusor, a delayed establishment of regular voiding habits, and overactive bladder and decreased functional bladder capacity in late adolescent mice. Animal models with maternal separation protocol can provide a better understanding of mechanisms underlying bladder reflex maturation, which could be used in the future studies for the development of novel therapies to treat voiding dysfunction in children.

14:33–15:00

Discussion

S2: [Parallel session] CASE REPORTS

Moderators: Serdar Tekgül (Turkey), Thomas Blanc (France)

ESPU Meeting on Wednesday 11, April 2018, 14:00–15:00

14:00–14:02

S2-1 (CP)

PRIMARY PRIMITIVE NEUROECTODERMAL TUMOUR (PNET) OF THE URINARY BLADDER: A RARE ENTITY

Sadaf ABA UMER KODWAVWALA[1], Bashir AHMED[1], Sajid SULTAN[1], Shamvil ASHRAF[1], Muhammad MUBARAK[2], Philip G RANSLEY[1] and Adeeb Ul Hasan RIZVI[1]

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PURPOSE

Primitive neuroectodermal tumours (PNET) that arise in the urinary bladder are an extremely rare occurrence. Very few cases have been reported so far in the literature. Here we present two cases of PNET of the urinary bladder.

MATERIAL AND METHODS

Two boys presented with lower urinary tract symptoms and one of them had terminal hematuria. Ultrasound revealed urinary bladder growth in both children.

RESULTS

Two boys, age 2 and 5.5 years respectively, having polypoid mass in the urinary bladder on ultrasound underwent cystoscopy and CT scan to assess growth extent. In one it measured 4.6 x 4.7 cms hanging mass from posteriolateral wall of urinary bladder, and 5 x 4 cms mass hanging from anterior wall of the bladder in other. Biopsy performed endoscopically in one but was inconclusive. No local invasion or distant metastases were found on staging workup. Both underwent local excision of bladder growth with tumour free margins. Histopathology revealed round blue cell tumour in submucosa without invasion of detrusor muscle. IHC marker showed positivity for CD-99 in both cases and diagnosis of PNET was established. Both received eight cycles of adjuvant chemotherapy CVD alternating with IE. Both of them are off treatment for 5.5 and 1.5 years respectively without any relapse and voiding symptoms.

CONCLUSIONS

Both clinician and pathologist must be aware of this rare entity during diagnosis and management of urinary bladder growth. Local surgical excision with adjuvant chemotherapy without radiotherapy is safe and effective for the management of this aggressive tumour.

14:02–14:04

S2-2 (CP)

THE OVULATING TESTICLE

Martin KAEFER[1], Joshua ROTH[1], Richard RINK[1] and Erica EUGSTER[2]

1) Indiana University School of Medicine, Pediatric Urology, Indianapolis, USA - 2) Indiana University School of Medicine, Pediatric Endocrinology, Indianapolis, USA

PURPOSE

Ovotesticular Disorder of Sexual Development (DSD) is rare, occurring in approximately 5 % of all cases of DSD. It typically presents in early childhood with ambiguous genitalia. We present a 17-year-old phenotypic male with previously diagnosed ovotesticular DSD who presented with a painless cystic testicular mass that was fluctuating in size and represented unrecognized ovarian tissue.

MATERIAL AND METHODS

A term infant was born with penoscrotal hypospadias and a right undescended testicle. Ultrasound identified a normal appearing left testis. At 12 months diagnostic laparoscopy revealed a right intraabdominal gonad. Deep longitudinal biopsies revealed normal ovarian tissue on the right and normal testis on the left. The family elected to continue to raise the child as male and the ovary was removed. Following later hypspadias repair the child was discharged from the urology clinic (age 5).

RESULTS

The patient returned at age 17 with complaints of a painless scrotal mass which had developed over a 2 week period. Development was Tanner Stage V. There was a mass on the superior aspect of the left testicle. His testosterone level was 500 ng/dL. An ultrasound demonstrated a 2.3 cm cystic lesion in the superior portion of the testicle with compressed testicular parenchyma along the margins of the cystic lesion. AFP and bHCG were both normal. The patient was scheduled for surgery and on the day of presentation he reported the mass had decreased in size. A partial orchiectomy was performed with the help of intraoperative ultrasound. Pathology demonstrated normal ovarian tissue.

CONCLUSIONS

Patients with Ovotesticular DSD present with a spectrum of histologic and karyotypic findings. Careful documentation of gonadal histology with longitudinal biopsies is critical to informed gender assignment and management of retained gonadal tissue. Our case underscores the potential inacuracies of gonadal biopsies and the need for continued vigilance of gonadal tissue as patients mature through puberty.

14:04–14:06

S2-3 (CP)

MENKES DISEASE ASSOCIATED WITH GIANT BLADDER DIVERTICULA

Hasan DELIAGA, Halil TOSUN, Bilge KARABULUT and Tugrul TIRYAKI

University of Health Sciences, Ankara Child Health and Diseases Hematology Oncology Training and Res, Pediatric Urology, Ankara, TURKEY

PURPOSE

Menkes disease is an X-linked recessive neurodegenerative disease in which the transport of copper is defective. The incidence is 1/254000. The serum copper level is lower than normal ranges. Copper is an important trace element which is necessary for lysyl oxidase and many other enzymes. Lysyl oxidase deficiency is associated with fragility in connective tissue and vascular abnormalities. The deficiency of this enzyme plays the major role in urologic abnormalities appeared in Menkes disease. Most frequent urologic abnormalities detected are bladder diverticula, vesicoureteral reflux and hydronephrosis.

MATERIAL AND METHODS

Two year old boy with Menkes disease is evaluated because of recurrent urinary tract infection and bilateral diverticula of the bladder is detected in voiding cystourethrography. The ureteral orifices were placed within the diverticula in cystoscopy. Intravesical bilateral diverticulectomy and bilateral ureteroneocystostomy are performed. The postoperative period was uneventful. On control cystoscopy there was no recurrence.

RESULTS

Lysyl oxidase is a copper dependent enzyme and is responsible for the morphology of the elastic fibers in connective tissue. The most frequent urologic abnormality caused in its deficiency in Menkes disease is bladder diverticula. The reported incidence is 1,7 %. The urologic abnormalities cannot be prevented but their onset may be delayed by parenteral copper treatment. The diagnosis is made by voiding cystourethrography. The choice of treatment is surgical excision. Although it is reported that the diverticula in Menkes disease are not correlated with the ureter orifices that was not the situation in our case and bilateral ureteroneocystostomy was also performed.

14:06–14:08

S2-4 (CP)

UROTHELIAL TUMORS OF THE BLADDER IN CHILDREN

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Hôpital La Timone Enfant, Paediatric surgery, Marseille, FRANCE

PURPOSE

Urothelial tumors of the bladder are uncommon in pediatric population, rarely happening in the first two decades of life, and exceptional under 10 years of age. Here, we reported 7 cases regarding clinical outcomes.

MATERIAL AND METHODS

We retrospectively identified 7 patients 7 to 15 years old (median: 12 years) with urothelial tumors managed in our center, since 2004. The presentation, diagnostic procedure, treatment and outcome. Finally, we reviewed the literature to analyze the outcomes and follow-up in the pediatric population.

RESULTS
Four patients were male and 6 of the 7 presented with gross hematuria. Ultrasound (US) was the most common imaging modality, showing an intravesical polyps mainly in the trigone. MRI was performed in 4 cases and revealed a mass with heterogeneous low-intermediate signal intensity in T1 and T2-weighted sequence. All the lesions were solitary. Transurethral resection of the bladder wall was performed in all cases. Histological studies showed grade-I TCCB (urothelial papilloma) in all cases, and one patient had two recurrences with a final histological result showing grade-II TCCB, treated with installation of Amyticine. All patients were alive with no evidence of disease after a median follow-up of 8.3 years.

CONCLUSIONS
Urothelial tumors are likely to manifest as hematuria, occur as solitary lesions and are generally low grade. These lesions have low recurrence potential with extremely favorable prognoses. Endoscopic treatment in urothelial tumor proved effective, with the necessity of a regular follow up either by US or cystoscopy in atypical aspect.

14:08–14:10

S2-5 (CP)

TRANSIENT PSEUDOHYPOALDOSTERONISM: A POTENTIALLY SEVERE CONDITION AFFECTING INFANTS WITH URINARY TRACT MALFORMATION

Xavier DELFORGE[1], Elodie HARAUX[1], Axelle CAULIEZ[2], Karine BRAUN[2], Guy KONGOLO[3] and Philippe BUISSON[1]

1) CHU Amiens, Pediatric surgery, Amiens, FRANCE - 2) CHU Amiens, Pediatric endocrinology, Amiens, FRANCE - 3) CHU Amiens, Pediatric intensive care unit, Amiens, FRANCE

PURPOSE
Secondary pseudohypoaldosteronism (S-PHA) is a life-threatening condition affecting young children with urinary tract malformation (UTM), but remains unfamiliar to pediatric urologists. We aim to emphasize the diagnosis S-PHA in children with urological issue, and to propose a management based on the published data.

MATERIAL AND METHODS
We retrospectively reviewed the cases of S-PHA related to urinary tract malformation from our institution, and we performed a MEDLINE review from the literature.

RESULTS
Including the 4 cases from our institution, 116 cases of S-PHA associated with UTM were reviewed. One hundred and six were aged below 6 months. A urinary tract infection (UTI) was associated in 105 cases (91 %). All types of UTM were represented. When no UTI is associated, S-PHA was related to severe or bilateral UTM. In 89 cases (76.5 %), S-PHA resolved with medical treatment associating electrolyte correction and appropriate antibiotic therapy. In cases of UTM needing immediate surgery, the surgical intervention also resolved S-PHA.

CONCLUSIONS
S-PHA affects children with UTM under the age of 6 months. Associated UTI and bilateral or severe UTM are at higher risk of developing S-PHA. Serum electrolyte balance must be checked in children presenting UTM when undergoing urological surgery, and when presenting UTI, before 6 months of age. Congenital adrenal hyperplasia must be suspected. S-PHA resolve after electrolyte correction and UTI treatment and/or surgery.

14:10 – 14:20
Discussion

14:20 – 14:22
S2-6 (CP)

CONGENITAL RENAL FAILURE, DSD, AND POSTERIOR CLOACA

Mircia-Aurel ARDELEAN[1], Thomas BOEMERS[2], Christa SCHIMKE[1] and Roman METZGER[1]

1) Paracelsus Medical University, Clinic of Paediatric Surgery, Salzburg, AUSTRIA - 2) Children Hospital, Pediatric Surgery and Urology, Cologne, GERMANY

PURPOSE
We report a-5-years old girl with 46XX-DSD with posterior cloaca and congenital end-stage renal failure.

MATERIAL AND METHODS
The prenatal ultrasound detected a phallic structure, megacystis, hyperechogenic small kidneys and oligo/anhydramnion. Intra-amniotic infusion were necessary to save the fetus, born at 34-weeks with pulmonary hypertension, distension of the lower abdomen, and DSD with a pseudophallus of 4.5 cm. The anus appeared in ante-position but with normal caliber. There were a urogenital sinus deviated posteriorly opened in anus and an accessory, phallic urethra. Spontaneous urination did not occur and urethral- and sinus catheterization failed.
We performed a vesicostomy.

RESULTS
Investigations showed a nonfunctional left kidney, a small echogenic right kidney with an ectopic implantation of his refluxive ureter on the dome of the bladder. Both, the phallic urethra and the urogenital sinus were stenotic and connected to a three-compartment urinary bladder. Other associated pathologies included left hemiuterus, and vaginal atresia.
CAH and hnf1ß- wt-mutations where genetically excluded, but by NGS a LHX1 mutation was identified, which could be associated with the above findings but hasn't been described before.
The level of creatinine was 3.8 mg/dl in the 5-th day of live: peritoneal dialysis was performed for 3 weeks, thereafter the patient remains symptoms free against ESRD: CKD 5, estimated GFR-cystatin-C 15 mL/min/1,73 m2. With 19 month we accomplished the bladder neck closure with continent urinary diversion and feminizing genitoplasty.

CONCLUSIONS
Transplantation of a living-donor kidney at 52-month of age was successful.
The transplanted kidney has a normal function and the patient is with CIC socially continent.

14:22–14:24

S2-7 (CP)

MALIGN RHABDOID TUMORS OF KIDNEY AND BLADDER

Hasan DELIAGA, Halil TOSUN, Bilge KARABULUT and Tugrul TIRYAKI

University of Health Sciences, Ankara Child Health and Diseases Hematology Oncology Training and Res, Pediatric Urology, Ankara, TURKEY

PURPOSE

After defining the malignant rhabdoid tumor (MRT) as different entity by immunohistochemical studies, there has been little progress of rarity and aggressive behavior of the tumor. We aim to summarize three cases of malignant rhabdoid tumor with mean age of 13 months and discuss their clinical course.

MATERIAL AND METHODS

Nephrectomy was performed in two female patients with MRT of kidney and biopsy in one male MRT of bladder patient. All patients had adjuvant chemotherapy according to the NWTSG and IRSG protocols. Two patients had metastasis to lungs, brain and mesentery before diagnosis. Metastasis occurred in one MRT of kidney patient in liver and lungs 4 months after diagnosis while taking chemotherapy. Both patients with MRT of kidney died of disease six months after diagnosis and the MRT of bladder patient is alive with the disease 2 months after the diagnosis.

RESULTS

The main problem for these patients is making the diagnosis. Because of its resemblance to Wilms and rhabdomyosarcoma clinically, suitable chemotherapy and radiotherapy are late onset until pathologic diagnosis is made. Aggressive behavior of the tumor gives rise to metastases before diagnosis and even during chemotherapy. Surgery is both reported to improve and worsen the prognosis. We observed that surgery seemed to have no effect on survey. There is no recommended chemotherapy protocol but multidrug high-dose chemotherapy seems to be promising.

CONCLUSIONS

Although extensive studies are made by NWTSG, SIOP and IRSG, there is not a proper treatment algorithm for treatment. The survey is still poor and survivors are still sporadic.

14:24–14:26

S2-8 (CP)

PRIMARY RENAL NEUROBLASTOMA WITH EXTENDED TUMOR THROMBUS IN VENA CAVA INFERIOR PRESENTING LIKE WILMS TUMOR IN AN 2 YEARS-OLD BOY

Mazen ZEINO[1], Milan MILOSEVIC[1], Roland AMMANN[2], Axel KAROW[2] and Jürg SCHMIDLI[3]

1) University of Bern, Inselspital Bern, Department of paediatric urology, Bern, SWITZERLAND - 2) University of Bern, Inselspital Bern, Pediatric Hemato- Oncology, Bern, SWAZILAND - 3) University of Bern, Inselspital Bern, Vascular Surgery, Department of Cardiovascular Surgery, Bern, SWITZERLAND

PURPOSE

Neuroblastoma is a rare cancer of the sympathetic nervous system that affects children, mostly under the age of 5 years old. Most frequently it starts from one of the adrenal glands, but can also develop in the neck, chest, abdomen, or spine. Primary renal neuroblastoma is extremely rare, with very few case reports in the literature.

MATERIAL AND METHODS
We present a case of a 2-year-old boy who was admitted to the Pediatric Emergency Department with a large mass occupying the right hemiabdomen and flank. Imaging with ultrasound and MRI showed a renal tumor with tumor thrombus in the infradiadiaphragmatic subhepatic vena cava inferior (VCI). Further radiological features were as well typical of Wilms tumor with local lymph node involvement but without metastases. Correspondingly, no biopsy was performed, and six weeks of nephroblastoma-specific chemotherapy were applied. Follow-up imaging then showed tumor progression, combined with clinical deterioration. We decided to proceed to resection without prior biopsy. Radical tumor nephrectomy with partial VCI resection including tumor thrombus was performed, with a VCI reconstruction using a biograft interposition.

RESULTS
Histology of the resected tumor revealed a primary renal neuroblastoma, N-myc amplified, and bone metastases were detected. Multimodal therapy according to the SIOPEN high-risk protocol was started.

CONCLUSIONS
Primary renal neuroblastoma is an absolute rarity that can be misdiagnosed as Wilms tumor, especially in the case of tumor thrombus with extension into VCI. In such cases detection of vanillylmandelic acid and homovanillic acid in the urine can lead to the correct diagnosis.

14:26–14:28

S2-9 (CP)

STAGED LAPAROSCOPIC FOWLER STEPHENS PROCEDURE FOR TRANSVERSE CROSSED TESTICULAR ECTOPIA: AN UNUSUAL APPROACH FOR A RARE CONDITION

Francisca YANKOVIC, Francisco REED, Nelly LETELIER, Ricardo ZUBIETA and Pedro Jose LOPEZ

Hospital exequiel Gonzalez Cortes & Universidad de Chile, Paediatric Urology, Santiago De Chile, CHILE

PURPOSE
Transverse testicular ectopia (TTE) is an extremely rare condition in which both testicles tend to migrate through the same inguinal canal. We describe two TTE cases with bilateral non-palpable testis.

MATERIAL AND METHODS
Retrospective review of two patients with TTE. Prior endocrine and genetic evaluation confirmed 46XY karyotype and normal hormones. Patients were managed with a two-stage laparoscopic Fowler Stephens procedure (FSP) and conjoined descend though a neo-inguinal canal (medial to the medial umbilical ligament) at the second stage.

RESULTS
Diagnostic laparoscopy identified both intra abdominal testicles with partial fusion of the vas deferens at the proximal end and abnormal localization (crossing the midline) of one of the gonads. A first bilateral FSP was performed at 12 and 18 months. After 34 and 44 months the second stage was performed. In both patients the gonads were vital and after preserving a single peritoneal strip from the partially fused deferens, a conjoined descend of both testicles through the neo-inguinal canal was made. Afterwards, via a trans-septal positioning, the gonads reached a tension free scrotal site. Clinical and ultrasound follow up at 6 and 18 months shows adequate testicular position and symmetrical volume.

CONCLUSIONS

Bilateral NPT presenting with TTE is rare. Due to the frequent anomalies of deferens we propose that bilateral FSP with a whole descent of the gonads though the same canal might minimize the risk of testicular vascularization and vas deferens injury offering a better outcome. Longer follow up for hormonal and spermatogenesis should be assess in the future.

14:28 – 14:30

S2-10 (CP)

SPLENO-GONADAL FUSION - RARE CONGENITAL ANOMALY, WHICH CAN BE DIAGNOSED AND TREATED BY LAPAROSCOPY

Piotr GASTOL, Kinga KOWALCZYK, Lidia SKOBEJKO-WLODARSKA and Margaret BAKA-OSTROWSKA

The Children's Memorial Health Institute, Peadiatric Urology, Warsaw, POLAND

PURPOSE

Spleno-gonadal fusion is a very rare congenital anomaly resulting from abnormal adherence between spleen and testis. This fusion can be continuous or discontinuous. It frequently associated with orophasial and/or limb abnormalities. The diagnosis is almost made as an accidental finding during orchidectomy for presumed testicular tumor or during orchidopexy or hernioplasty. We present our experiece with two cases.

MATERIAL AND METHODS

Two boys, age 7 and 6 years, with an undescendend left testis since birth. They also suffered from deficit of weight, high and some kind of limbs malformation. First, when he was 2 years old, he underwent exploration of the left inguinal canal and retroperitoneal space with biopsy of the testis fused with brown-reddish tissue in local hospital. Histopatological examination revealed spleno-gonadal fusion. In the second case, USG showed mass with structure of spleen in left retroperitoneal space. They were admitted to our department for surgical evaluation and treatment.

RESULTS

During laparoscopy, in both cases, we found hypoplastic, retained testis in the retroperitoneal space, adhered with splenic continuous cord. Orchidectomy was performed. Histopatological examination revealed spleno-gonadal fusion and hypoplastic testis without spermatogenesis.

CONCLUSIONS

1. Spleno-gonadal fusion is a rare congenital anomaly, which is seldom diagnosed or suspected preoperatively.
2. Spleno-gonadal fusion must always be remembered in the differential diagnosis of a non-palpable testis.
3. Laparoscopy is good method in evaluation and treatment boys with abdominal cryptorchidism.

14:30 – 14:40

Discussion

14:40 – 14:42

S2-11 (CP)

CASE OF PENILE TOURNIQUET SYNDROME AND NEAR TOTAL AMPUTATION

Benslimane HAMMOU[1], Haouari HAFIDA[2], Hamidou FAYCEL[3], Benmohamed NEDDAR[2], Ramdane REBIHA[2], Hadjou FATMA[1] and Mallah NOURIA[1]

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PURPOSE

Hair tourniquet syndrome is the threw coined to describe an unusual phenomenon caused by miscellaneous metallic object or nonmetallic (hair…) around the coronal sulcus of penis.
It was significantly encountred in circumcised boys (0 – 6 years) and all injuries are minimal or severe.
Urethrocutaneous fistula or penile amputations if not diagnosed and treated appropriately.
Near total penile amputation caused by hair tourniquet is presumed to be accidental or a original abuse.
Four grade of penile strangulation (Bashir and EL-Barbary)
Grade 0: Constriction of skin without urethral injury.
Grade 1: Partial division of the corpus spongiosum with a urethra-cutaneous fistula.
Grade 2: Complete division of the corpus spongiosum and constriction of the copus cavernosum.
Grade 3: Gangrene, necrosis and complete amputation of the glans.

MATERIAL AND METHODS

We report the delayed treatment of a boy with Down syndrome 21, aged 07 years, who presented with a partial amputation of his penis (Grade 2).
The diagnosis of hair choke was laid 08 months after circumcision with almost total amputation of the glans. The treatment was done in two sequences.
Starting with a suture of the glans to the body of the penis and urethral advancement 04 months after.
This delayed diagnosis and treatment was caused by a difficult to see the hair in our boy who is circumcised and a mental retardation.

RESULTS

The circumcision has been considered to be a major risk factor of strangulation.
The hair or other agents seem to constrict more easily a circumcised penis thaw one with a normal prejudice.

CONCLUSIONS

The diagnostic and treatment are after delayed, however repair is still possible in a single time and urethroplasty suture when diagnosis is established quickly or wait. The choise of the final procedure depends on the severity of the injury.

14:42–14:44

S2-12 (CP)

A CASE REPORT OF DUPLICATE EXSTROPHY OF THE BLADDER

Bilge KARABULUT[1], Ayse Selcen OGUZ ERDOGAN[2], Dogus GUNEY[3], Halil TOSUN[1], Hasan DELIAGA[1] and H. Tugrul TIRYAKI[1]

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PURPOSE

Duplicate exstrophy of the bladder represents a very rare variation of exstrophic malformation an has two variants: with and without communication between outer exstrophic component and inner urinary tract. We present a case of duplicate exstrophy of bladder with exstrophic metaplasic bladder plate and epispadias which fits into noncommunicating varinat.

MATERIAL AND METHODS

A 1.5 month old boy with pubic diastasis, penopubic epispadias, low set umbilicus, divergent rectus abdominus muscle and an abdominal hernia inferior to umbilicus was introduced. There was a hypopigmented circulear area 3 cm in diameter in lower half of the bulging skin area of hernia. Both testes were in normal scrotal position. Abdominal ultrasound revealed bilateral normal kidneys and an intact pelvic bladder. The patient underwent cystoscopy, abdominoplasty and epispadias repair. No cominication exist between inner normal bladder and outer hypopigmented plate.
The histopathologic examination of the hypopigmented area showed metaplasic bladder mucosa.

RESULTS

Although the initial presentation of our exstrophy variant patient was confusing there was no need for major operation as in classic exstrophy and at first month check cosmetic result was satisfactory.

CONCLUSIONS

Duplicate exstrophy of the bladder is a very rare variation of exstrophic malformation and the diagnosis is even more difficult when no cominication exist between inner normal urinary tract and outer metaplasic dry exstrophic component.

14:44–14:46

S2-13 (CP)

WILMS' TUMOUR RELAPSE: ITS NEVER TOO LATE

Bashir AHMED[1], Sadaf ABA UMER KODWAVWALA[1], Sajid SULTAN[1], Muhammad MUBARAK[2], Shamvil ASHRAF[1], Philip G RANSLEY[1] and Adeeb Ul Hasan RIZVI[1]

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PURPOSE

To present an unusual case of wilms' tumour relapse.

MATERIAL AND METHODS

A 10 years old girl, case of left renal wilms' tumour stage 1, blastemal type, managed by SIOP protocol with tumour nephrectomy and remained off treatment, disease free for almost 5 years.

RESULTS
Five years later she presented with history of intermittent, painless, frank hematuria with Hb 10.7 gm% and Serum creatinine 0.38 mg%. Ultrasonography, CT scan and MRI pelvis revealed a heterogenous, pedunculated, vascular, enhancing mass of about 3.7 x 3.6 x 2.6 cms arising from the left side lateral bladder wall, involving the ureterovesical junction (UVJ) and occupying left rectovesical region. Cystoscopy revealed a small growth at the left UV junction and biopsy confirmed a Wilms' tumour relapse. Managed by SIOP relapse chemotherapy protocol and complete surgical excision with tumour free margins was ensured with bilateral ovarian transposition for safe radiotherapy. Patient is asymptomatic and alive on treatment.

CONCLUSIONS
This is an unusual case with very delayed relapse of wilms' tumour in the very small ureteric stump which emphasize on high index of suspicion even for delayed relapse in wilms' tumour. We have modified our surgical technique and clip the ureter very early as soon as we get an access to the ureter, to avoid migration of tumour cells, and later on take the maximum ureter, to the very end close to the bladder.

14:46–14:48

S2-14 (CP)

ROSAI- DORFMAN DISEASE OF SCROTUM: AN UNUSUAL ENTITY THAT MIMICS ACUTE SCROTUM

Ilhami SURER[1], Cuneyt ATABEK[1], Salih DEVECI[2], Berktug BAHADIR[1], Ervin MAMBET[1] and Suzi DEMIRBAG[1]

1) Gulhane Medical School The University of Health Sciences, Paediatric Surgery, Ankara, TURKEY - 2) Gulhane Medical School The University of Health Sciences, Pathology, Ankara, TURKEY

PURPOSE
Sinus histiocytosis with massive lymphadenopathy (Rosai-Dorfman disease-RDD) is a rare histiocytic proliferative disorder of unknown etiology which most commonly affects children and young adults. Extranodal involvement is reported in up to 25 % of cases. Despite the apparent description of genitourinary disease, there has been to date only one report of testicular RDD and no case of scrotal RDD in children.

MATERIAL AND METHODS
A 7-year old boy presented with a two month history of left testicular swelling not associated fever and urinary symptoms but very severe scrotal pain for 2 days. Clinical examination revealed an enlarged and tender scrotal mass at midscrotal localization. No inguinal or other lymphadenopathy was palpated. Laboratory investigations yielded a normal full blood count. Serum beta-HCG and AFP levels were in normal limits. Ultrasound examination of the scrotum revealed 40 x 50 mm extratesticular mass lesion with increased vascularity which resembling strangulated omental tissue with inguinal hernia.

RESULTS
The patient underwent a scrotal exploration to diagnose the mass origin. In scrotal exploration there were dense fibrotic adhesions between the mass and both testes and anterior surface of rectum. Blunt dissection was impossible due to dense fibrosis to the adjacent tissues. The inelastic grey colored 50 x 50 mm mass was excised completely by sharp dissection. The patient was discharged uneventfully and histopathological examination in immunoperoxidase stains with s-100 monoclonal antibody showed marked positive staining of the histiocytes that revealed histiocytic proliferative disease.

CONCLUSIONS
In a review of the literature on treatment strategies in RDD concluded that clinical observation without treatment is advisable when possible. Some patients show spontaneous regression while others have a more chronic course with stable or progressive disease. Surgical debulking might be necessary in the presence of symptoms or vital organ compression as in our case. Chemotherapy is in general ineffective while radiotherapy has shown limited efficacy.

14:48 – 14:50

S2-15 (CP)

YORK & MASON PROCEDURE (TRANSRECTAL APPROACH) FOR PERSISTENT RECTO-URETHRAL FISTULA, AFTER SURGICAL TREATMENT OF AN INTERMEDIATE ANORECTAL MALFORMATION. A CASE REPORT

Arthur LAURIOT DIT PREVOST[1], Dyuti SHARMA[1], Elsa ROBERT[2], Jean-Christophe FANTONI[3] and Remi BESSON[1]

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PURPOSE
Congenital recto-urethral fistula (RUF) is associated to anorectal malformations (ARM). Incidence of RUF is around 30 to 80 cases per year (incidence of ARM: 1/2500 live births). Post operative RUF represent -for adult urologist- one of the surgical complication of prostatectomy (2 %) and occurs in 360 cases per year. We reported a case of persistent RUF after proctoplasty for ARM with occult RUF.

CASE REPORT
A boy, born in January 2001, underwent proctoplasty for intermediate ARM without diagnosis of fistula nor colostomy. At age of continence, the patient presented symptoms of RUF, with urinary leaks through the anus. At 10-years old, the first surgical treatment of the fistula with perineal approach was performed without success. Four years later, after several repeated orchitis, the patient was addressed to our referral center of paediatric surgery for RUF treatment, after endoscopic examination. This case was discussed with both paediatric surgeon and adult urologist, and a York & Mason trans-rectal approach was suggested. He was re-operated at age of 15, without colostomy.

RESULTS
Post-operative follow-up after one year was without recurrence, nor sphincter disorders.

CONCLUSIONS
York & Mason transrectal approach for RUF is feasible in older children, even without colostomy. This surgical complex case represented a great opportunity for the paediatric urologist to work with adult urologist and promote this collaboration for the transition of our young patients.

14:50 – 15:00

Discussion

S3: BASIC RESEARCH 2

Moderators: Magdalena Fossum (Sweden), Berk Burgu (Turkey)

ESPU Meeting on Wednesday 11, April 2018, 15:35–17:05

15:35–15:38

S3-1 (PP)

★ FUNCTIONAL ANALYSIS OF TWO NEW VARIANTS IN BMP7 PRODOMAIN IN TWO PAIRS OF MONOZYGOTIC CONCORDANT TWINS WITH HYPOSPADIAS

Aurore BOUTY[1], Kelly WALTON[2], Nurin LISTYASARI[3], Gorjana ROBEVSKA[4], Jocelyn VAN DEN BERGEN[4], Sultana FARADZ[3], Craig HARRISON[2], Katie AYERS[4] and Andrew SINCLAIR[4]

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PURPOSE

Variants in Bone Morphogenetic Protein 7 (BMP7) have been reported in patients with hypospadias. Here we analyse two variants in the BMP7 prodomain identified in twins with hypospadias.

MATERIAL AND METHODS

Patients with hypospadias were prospectively recruited. After informed consent DNA was extracted from blood. The coding regions of 1034 genes (including 64 known diagnostic genes for DSD, and 970 candidate genes) were sequenced using a targeted capture approach (Haloplex, Agilent), combined with massively parallel sequencing (MPS). The resulting variants were filtered for rarity in the general population (<1 %), and in our cohort. Quality, depth of the reads and predicted pathogenicity were also considered. Expression, localisation and activity of the variants were analysed in cell culture using immunofluorescence, western blots and luciferase reporter assays.

RESULTS

We have currently analysed sequencing from 46 patients with hypospadias. Two variants in BMP7 were identified in two pairs of monozygotic concordant twins exhibiting proximal hypospadias. Both variants are heterozygous, non-synonymous and affect highly conserved amino-acids in the prodomain of BMP7, a region known to be important for the excretion of the protein into the extracellular matrix. Functional analyses demonstrated that both variants disrupt BMP7 synthesis or secretion.

CONCLUSIONS

Using our targeted DSD panel we have identified two new variants in the prodomain of BMP7 in hypospadias. By decreasing BMP7 secretion, these variants are likely to disrupt its role in the closure of the urethral plate.

Further analysis of patients with hypospadias may uncover additional novel variants that cause this DSD.

15:38–15:41

S3-2 (PP)

THE EFFECT OF XENOESTROGENS ON FORESKIN FIBROBLASTS AND THE ETIOLOGY OF HYPOSPADIAS

Karen AITKEN[1], Jia-Xin JIANG[2], Shreya BATRA[2], Sevan HOPYAN[2] and Darius BAGLI[2]

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PURPOSE

Hypospadias is a developmental defect in males where the development of the urethra foreskin and ventricle surface of the penis is altered. Although the etiology of hypospadias is still debated, it has been suggested that hypospadias is linked to environmentally altered gene expression. Previous studies have found that in utero exposure to xenoestrogens (XE) underlying many congenital anomalies also alters the development of the genital tubercle (GT) through developmentally important genes wnt5a and hoxa13. We hypothesize that expression of hoxa13 and wnt5a are rescued in the presence of a methylase inhibitors indicating that XE mediation of GT is under epigenetic regulation.

MATERIAL AND METHODS

Human foreskin fibroblast cell line (BJ cells) were maintained in EMEM, 10 % heat-treated charcoal-stripped (hormone-free) fetal calf serum in 37 °C, 5 % CO2 incubator. For exposure to XE, cells were starved of serum for 24–48 hours, and exposed to Diethylstilbestrol for 0–120 hours. EZH (methylase) inhibitor (UNC 1999) or DNA methylation inhibitor (decitibine) were introduced to the BJ cells for 48–120 hours. Cells were harvested and real time PCR was performed using SYBR-Green Master Mix. Relative levels of hoxa13 and wnt5a was determined with GAPDH used to normalize the findings. $p<0.05$ was considered to be significant.

RESULTS

Exposure to XE decreased hoxa13 and wnt5a expression in human foreskin fibroblasts. After the introduction of UNC1999, the expression of hoxa13 at day 6 was rescued, $p<0.05$. Wnt5a expression was partially rescued by DNA methylation inhibition, $p<0.05$.

CONCLUSIONS

XE have the potential to affect genital tubercle development through epigenetic mechanisms, though the mechanisms may differ depending on the genes. Further work is underway to uncover the regulation of wnt5 and hoxa13 by histone and DNA methylation profiles using ChIP-PCR and pyrosequencing.

15:41 – 15:44

S3-3 (PP)

IMPLANTATION OF DECELLULARIZED HUMAN TESTIS IN NUDE MICE AS A NATURAL BIOREACTOR FOR FUNCTIONAL TESTICULAR REPLACEMENT

Shabnam SABETKISH[1], Nastaran SABETKISH[1], Parisa SAEEDI SHARIFABAD[2] and Abdol-Mohammad KAJBAFZADEH[1]

1) Pediatric Urology and Regenerative Medicine Research Center, Section of Tissue Engineering and Stem, Urology, Tehran, ISLAMIC REPUBLIC OF IRAN - 2) Sarvar Children's Hospital, Mashhad University of Medical Sciences, Mashhad, Iran, Department of Pediatric Urology, Mashhad, ISLAMIC REPUBLIC OF IRAN

PURPOSE

To determine histological aspects of implanted decellularized human testisticular tissue in nude mice as a primitive step for further tissue engineering.

MATERIAL AND METHODS

A total of 4 human testes scaffolds were obtained in sterile condition after obtaining ethical committee approval. The optimal decellularization protocol was determined and the efficacy of decellulaization was evaluated. The scaffolds were cut in 3 × 3 mm pieces and implaned between the tight muscles in 32 nude mice. Biopsies were taken at 2, 4, 8, and 24 weeks postoperatively for further histological investigations.

RESULTS

Histological examination of decellularized testes confirmed the complete absence of nuclear remnants as well as preservation of the extracellular matrix (ECM) in decellularized samples. Macroscopic evaluation of implanted scaffolds confirmed the absence of shrinkage or inflammation. Based on microscopic observation, successful cell seeding was observed in all follow-ups confirmed by H&E and IHC staining that increased continuously during the whole study. Interestingly, spermatogonial stem-like cells were observed on decellularized implants that were well differentiated during the follow-ups.

CONCLUSIONS

Natural bioreactors may provide a good cell source for testes tissue regeneration. This optimal technique may provide a testis bioscaffold as a three dimensional platform and further successful cell seeding to produce a functional testis. This novel technology may be beneficial for patients who require testicular supplementation.

15:44–15:47

S3-4 (PP)

MATERNAL FIRST TRIMESTER SERUM LEVELS OF FREE BETA HUMAN CHORIONIC GONADOTROPHIN AND HYPOSPADIAS

Matthieu PEYCELON[1], Lea CARLIER[2], Aliénor DE CHALUS[2], Adeline BONNARD[2], Myriam RACHID[2], Annabel PAYE-JAOUEN[1], Muriel HOUANG[3], Georges AUDRY[4], Serge AMSELEM[5], Francoise MULLER[6], Alexandra BENACHI[7], Alaa EL GHONEIMI[1], Jean-Pierre SIFFROI[2] and Capucine HYON[2]

1) Hôpital Robert-Debré, Paediatric Urology, Paris, FRANCE - 2) Hôpital Armand-Trousseau, Genetics, Paris, FRANCE - 3) Hôpital Armand-Trousseau, Paediatric Endocrinology, Paris, FRANCE - 4) Hôpital Armand-Trousseau, Pediatric Surgery, Paris, FRANCE - 5) Hôpital Armand-Trousseau, Inserm UMR_S933, Paris, FRANCE - 6) Hôpital Robert-Debré, Biochemistry and Hormonology, Paris, FRANCE - 7) Hôpital Béclere, Gynaecology and Obstetrics, Clamart, FRANCE

PURPOSE

Hypospadias is the most common malformation affecting male genitalia and its incidence is increasing. Although the causes remain often unknown, endocrine, vascular, genetic and environmental factors have been implicated. Human chorionic gonadotrophin (hCG) peaks in the first trimester of pregnancy stimulate foetal testosterone production and normal male genital development. One potential etiological pathway could be an altered release of hCG leading to androgen deficiency. The aim of this study was to identify an association between maternal first trimester levels of serum free-beta hCG and occurrence of hypospadias.

MATERIAL AND METHODS

A cohort of 301 pregnant women who gave birth to a singleton live born male infant was established in 2015 of whom 149 boys had surgery for hypospadias. Serum levels of free-beta hCG were ascertained from laboratory databases and free-beta hCG multiple of the median (MoM) were compared between affected and unaffected boys. Statistical analysis: Fisher test and logistic regression.

RESULTS

Median free-beta hCG values and MoM were 25.92 ng/mL (2.7–224) and 1.47 (0.3–7.6) respectively amongst women with an infant with hypospadias and 1.0 in case of unaffected boy. No correlation was found ($p>0.05$). Stratified by suspected placenta dysfunction (prematurity, intrauterine growth retardation or low birth weight), median free-beta hCG MoM was 1.36 (0.7–7.6) ($p>0.05$). However, there was interestingly a significant trend towards high levels of free-beta hCG for severe types (1.87 (0.5–4.9) in proximal hypospadias (N=47) versus 1.14 (0.3–7.6) in distal hypospadias (N=102), $p<0.05$).

CONCLUSIONS

Our findings do not support the hypothesis that alteration in maternal hCG levels is associated with the development of hypospadias. However, higher free-beta hCG values were found in children with proximal hypospadias. Because of the small number of patients, further studies are needed and these preliminary results reported on should be interpreted with caution.

15:47 – 15:50

S3-5 (PP)

★ ISOLATED HYPOSPADIAS: IMPACT OF PRENATAL EXPOSURE TO PESTICIDES DETERMINED BY MECONIUM ANALYSIS

Elodie HARAUX[1], Pierre TOURNEUX[2], Erwan STEPHAN-BLANCHARD[3], Bernard BOUDAILLIEZ[4] and Karen CHARDON[5]

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PURPOSE

Although pesticides are suspected to increase the risk of hypospadias, none has been identified in human studies. We aimed to investigate whether prenatal exposure to pesticides detected in meconium constitutes a risk factor for isolated hypospadias (IH).

MATERIAL AND METHODS

In a case-control study, newborns with isolated hypospadias (n=32) matched with controls (n=90) were included (2011 – 2014) at birth. We focused on a selective population with no genetic or hormonal abnormalities, no syndrome, or any other abnormality of the genitalia. Maternal exposure was assessed by a questionnaire and a job-exposure matrix to endocrine-disrupting chemicals (EDCs). Fetal impregnation was assessed by the meconium concentrations of the 11 pesticides or metabolites (organophosphates, carbamates, phenylurea and phenoxyherbicides) commonly used in this region.

RESULTS

Maternal occupational exposure to EDCs and the domestic use of hair cosmetics were identified as exposure risk factors of IH (OR 3.94 (1.12 – 13.86) and 3.29 (1.22 – 8.85) respectively. The pesticides most commonly detected in meconium were organophosphates (in 24.2 % to 98.9 % of cases, depending on the substance) and phenylurea (> 86.8 %). Multivariate analysis showed an association between IH and the presence of 2 pesticides in meconium: MCPA, a phenoxyherbicide (OR 4.31 (1.22 – 15.20)) and isoproturon, a phenylurea (3.70 (1.06 – 12.84).

CONCLUSIONS

This study suggests the impact of multiple prenatal exposures to EDCs on the occurrence of IH such as those found in cosmetics and in pesticides. Prenatal impregnation to phenoxyherbicides and phenyluea assessed by meconium analysis was correlated with isolated hypospadias. These findings support prevention messages for pregnant women concerning exposure to pesticides.

15:50 – 15:53

S3-6 (PP)

GEL CASTING AS AN APPROACH FOR TISSUE ENGINEERING OF MULTILAYERED TUBULAR STRUCTURES: APPLICATION FOR URETHRAL RECONSTRUCTION

Melissa VAN VELTHOVEN[1], Rana RAMADAN[1], Barbara KLOTZ[2], Debby GAWLITTA[2], Miguel CASTILHO[3], Jos MALDA[3], Pedro COSTA[3], Laetitia DE KORT[1] and Petra DE GRAAF[1]

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PURPOSE

There is a lack of tissue-engineered solutions for replacement of urological tissues. Bottle necks are vascularization and the complex tubular organization with different cell layers. As the corpus spongiosum (CS) is an integral and functional part of the urethra, tissue engineering of the urethra should be combined with the CS. The CS is a multilayered, highly vascularized structure with distinct distribution of extracellular matrix components. Here we propose an innovative gel casting approach to engineer three-layered tubular constructs.

MATERIAL AND METHODS

A mold with three chambers was designed and fabricated. The chambers were loaded with gelatin-based hydrogels containing endothelial cells and pericytes (chamber 1 and 3 to form the inner and outer layer) and smooth muscle cells (chamber 2 to form the middle layer). A fiber mesh was placed at the base of the construct to serve as support for the gels and to roll the gel into a multilayered tubular construct. Hydrogels were mechanically tested and compared to native tissue.

RESULTS

The gel could be casted and rolled into a multilayered construct. The encapsulated cells formed little capillary-like structures (chamber 1 and 3) and produced elastin (chamber 2) within two weeks. The compressive modulus of the gel was comparable to native tissue.

CONCLUSIONS

Our approach enables to engineer tubular constructs with distinct compositions in the different layers. Cell survival and functionality up to two weeks has been achieved and the biomechanical properties were similar to native tissue. This approach towards tissue engineering of multilayered tubular structures may be applicable to the urological field as well as other fields of soft tissue engineering.

15:53–15:56

S3-7 (PP)

EFFICIENCY OF HORMONE STIMULATION TREATMENT BEFORE HYPOSPADIAS SURGERY: EXPERIMENTAL STUDY

Ozlem COLOGLU[1], Murat ALKAN[1], Emine Bagir KILIC[2] and Seyda ERDOGAN[2]

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PURPOSE

In hypospadias surgery, there is no consensus on the choice of hormone preparations, treatment period and surgical timing. The purpose of this study is to observe structural and histopathological changes of hormone stimulation therapy methods in the healthy (without hypospadias) animal model and evaluate the ideal surgical time period after hormone stimulation.

MATERIAL AND METHODS

50 Wistar Albino rats, 4–6 weeks old, were used. Rats were divided into 5 groups as parenteral human chorionic gonadotropin (hCG) group, parenteral testosterone (pT) group, topical dihydrotestosterone (tT) group, and control groups of parenteral and topical treatment groups. Penis diameter and length were measured throughout the study and after the application. Biopsies were taken from preputium for histopathological examinations and evaluated for vascularity, epithelial thickness, inflammation and fibrosis.

RESULTS

Increase of 56 %, 58 %, 84 % in penile length, 62 %, 59.8 %, 109 % in penile diameter, 46 %, 59 %, 100 % in number of vessels, observed in the group of hCG, pT and tT, respectively, of which statistically significant when compared to the control groups. The optimum time for surgical repair starting from the end of hormone administration was found as after the 4th, 6th and 1st week in hCG, pT, and tT groups, respectively.

CONCLUSIONS

This study has shown that human chorionic gonadotropin, parenteral testosterone and topical dihydrotestosterone treatments are useful in increasing penile size and tissue quality before hypospadias surgery. The ideal surgical time period is; 4th, 6th and 1st week after the administration of hCG, pT, and tT, respectively.

15:56–16:17

Discussion

16:17 – 16:20

S3-8 (PP)

RENAL REGENERATIVE CAPACITY RELATED TO STEM CELL RESERVE IN NEPHRECTOMIZED RATS

Songul ARABUL[1], Mustafa MELIKOGLU[1], Necdet DEMIR[2], Esma KONUK[2], Gungor KARAGUZEL[1] and Cem BONEVAL[1]

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PURPOSE

Although regenerative response of kidneys to partial/total nephrectomy is important from point of urological and nephrological morbidities, our information on this subject is rather limited. This experimental study was conducted to investigate renal regenerative capacity related to kidney stem cell reserve in different nephrectomy models.

MATERIAL AND METHODS

Three-week-old rat pups (n=84) and 8-week-old young adult rats (n=84) were randomly divided into four groups including controls and three nephrectomy subgroups (unilateral 1/3 nephrectomy, unilateral total nephrectomy, and 5/6 nephrectomy). In each group, biochemical (BUN and creatinine), immunofluorescence (stem cell reserve assessment with CD90 and CD105) and immunohistochemical (Ki67 as a proliferative marker) examinations were performed on postoperative days 15, 30 and 60.

RESULTS

While BUN values were significantly increased in unilateral total and 5/6 nephrectomized rats ($p < 0.01$), creatinine levels were significantly higher only in 5/6 nephrectomized rats ($p > 0.05$). When both age groups and all postoperative periods were considered, 8-week old rats undergone 5/6 nephrectomy had the highest CD90 and CD105 positivity. The positivity involved renal tubules on postoperative day 15 and then reached the highest level on postoperative day 60 by involving glomeruli and interstitial cells. The highest proliferative activity was seen in unilateral total and 5/6 nephrectomy subgroups of 3-week-old pups.

CONCLUSIONS

Kidneys may pose a regenerative response to tissue/volume loss through its own stem cell reserve. This response supports that kidneys may have a potential to overcome tissue/volume loss-related damage. However, further experimental and clinical studies are necessary to determine the exact role of stem cells on renal regenerative capacity.

16:20 – 16:23

S3-9 (PP)

NGAL, TGF-BETA1 AND L-FABP URINARY LEVELS IN THE DIAGNOSIS AND FOLLOW-UP OF CHILDREN WITH URETEROPELVIC JUNCTION OBSTRUCTION (UPJO)

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PURPOSE

The aim of the study was to evaluate the role of transforming growth factor-beta1 (TGF-β1), neutrophil gelatinase-associated lipocalin (NGAL), liver-type fatty acid-binding proteins (L-FABP) in the diagnosis and follow-up of children with UPJO.

MATERIAL AND METHODS

The study cohort consisted of 31 patients with severe UPJO (SFU Grade III and IV) who required surgery (median age 1,3 years) and matched control group of 15 healthy children. Urinary NGAL, TGF-β1 and L-FABP were measured in renal pelvic intraoperatively and in bladder urine preoperatively and 12 and 24 months after surgery. Bladder urine biomarkers were also measured in 15 age matched children without UPJO. All of the children had normal renal function.

RESULTS

In the obstructed group mean NGAL, TGF-β1 and L-FABP in the renal pelvic urine was 734,43±329,8 pg/ml, 102,79±34,1 pg/ml, 15,56±7,6 pg/ml respectively, or 1,7 – 3,4-fold that of bladder urine ($p < 0.001$). Mean bladder urine NGAL, TGF-β1 and L-FABP were 433,7±193,2 pg/ml, 54,2±31,9 pg/ml, 4,6±2,8 pg/ml respectively or 4,2 – 65,7-fold higher in patients with UPJO than in controls (6,6±4,3 pg/ml, 12,3±8,9 pg/ml, 0,2±0,2 pg/ml, $p < 0.001$) respectively.

Mean bladder NGAL, TGF-β1 and L-FABP 12 and 24 months after surgery showed a trend towards a decrease, albeit still insignificant (187,7± 67,5 and 92,2±27,6 pg/ml, 42,0±18,9 and 28,73±14,3 pg/ml, 2,6±1,2 and 1,3±0.9 pg/ml, respectively), $p < 0.08$).

24 months post-operatively a significant decrease in the AP diameter of the renal pelvis 31,9±4,7 mm vs. 11.7±4,3 mm) ($p < 0.01$) and significant improvement in renal function (45,7±6,7 % vs 48,8±6,5 %) ($p < 0.05$) were observed.

CONCLUSIONS

The measurement of urinary NGAL, TGF-β1 and L-FABP could become a useful tool for the diagnosis of obstructive hydronephrosis and the evaluation of the kidney function status, pre- and postoperatively. Elevated levels of biomarkers after surgery may indicate permanent kidney injury due to hydronephrosis despite successful repair of UPJO.

16:23–16:26

S3-10 (PP)

A NOVEL NON-INVASIVE TEST FOR PRIMARY HYPEROXALURIA (PH)

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PURPOSE

To report a comparative analysis of genetic testing of primary hyperoxaluria (PH) Type I, II and III with their histopathologically proven renal oxalosis.

MATERIAL AND METHODS

It is a prospective study of thirty cases where nephrectomies were performed for non functioning kidney secondary to urolithiasis and histopathology revealed findings consistent with oxalosis. For non invasive diagnosis of PH, same patients were screened for the sequencing of three genes that are known to cause three types of primary hyperoxaluria, PH type I, alanine glyoxylate aminotransferase (AGXT), PH type II, glyoxylate reductase/hydroxypyruvate reductase (GRHPR) and PH type III, 4-hydroxy-2-oxoglutarate aldolase 1 (HOGA1) genes.

RESULTS

Among these patients, 26 (86.6 %) were positive either for PH type I (80 %) or PH type II (6.6 %) gene mutations. Four cases (13.4 %) had no mutations in any of the three genes.

CONCLUSIONS

Genetic testing can be a very useful, reliable and almost non-invasive test for the diagnosis of primary hyperoxaluria with renal involvement compared to the gold standard liver biopsy. However there are some PH for which the exact genetic defect has not been identified yet. To the best of our knowledge this is the first documented study comparing the histopathology with genetic testing for primary hyperoxaluria.

16:26–16:29

S3-11 (PP)

MAGNETIC COMPRESSION ANASTOMOSIS DEVICE TO SIMPLIFY LAPAROSCOPIC PYELOPLASTY- REPORT OF PRELIMINARY EXPERIMENTAL RESULTS

Tamas CSERNI[1], Daniel HAJNAL[2], Andras NAGY[3], Daniel URBAN[2], Daniel ERCES[2], Rainer KUBIAK[4], George RAKOCZY[5], Josef KASZAKI[2] and Supul HENNAYAKE[1]

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PURPOSE

The Anderson-Hynes pyeloplasty is a technically challanging laparoscopic procedure. The most difficult part is the laparoscopic suturing of the uretero-pelvic anastomosis. Robotics is still an exepensive alternative. Our aim is to design a cheap purpose-made device to simplify laparoscopic pyeloplasty.

MATERIAL AND METHODS

After ethical approval laparoscopy was performed in 3 pigs to dissect the pyelo-ureteric junction (PUJ) and create a side-to-side uretero-pelvic anastomosis with magnetic cylinders on a modified "blue stent". The procedures were converted to open due to technical difficulty of inserting a nephrosytomy catheter with the magnet into the non-dilated renal pelvis. In 3 further pigs the ureter was first loosely ligated. Six weeks later transperitoneal laparoscopic procedure was successfully used to tailor the dilated renal pelvis and perform a magnetic compression uretero-pelvic anastomosis with a modified internal JJ stent. X-rays were performed on day 1, 7 and 14 postop. The animals were sacrificed 6 weeks later, the position of the magnets, the patency of the anastomosis was assessed and Hematoxilin-eosin staining was performed.

RESULTS

The magnets were found attached to each other on the 7th day postop. Narrow anastomosis was seen in 3 cases where the magnets moved below or above the anastomosis. Wide and patent anastomosis was found in 3 cases when the magnets remained at the level of the anastomosis 2 weeks after insertion.

CONCLUSIONS

It is possible to simplify laparoscopic pyeloplasty with a purpose-made magnetic compression device. Our prototype still needs refinements but it may become a cheap alternative of robotics in the future.

16:29–16:32

S3-12 (PP)

THE FETAL DIURESIS UNDER PHISIOLOGICAL PREGNANSY - THE NATURAL DIURETIC TEST

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PURPOSE

The fetal diuresis – an important physiological indicator, which reflects homeostasis, the hemodynamic in conditions of normal urodynamics.

The aim of the stude is to determine parameters of diuresis in the fetuses between 19 and 40 weeks of gestation under the physiological circumstances.

MATERIAL AND METHODS

The prenatal ultrasound cystometry with natural filling was used in 86 to study/. We registered the maximum and minimum volume of the bladder, the lengh of the micturition cycling, which allowed us to calculate diuresis of the fetus per minute (hour) taking into account the weight of the body. 56 prenatal ultrasound fetal urodynamic investigations were performed during normal pregnancy of the fetus in 19–40 weeks of gestation.

RESULTS

A high correlation between fetal diuresis, gestational age, fetal weight and capacity of the bladder (r -0.84), (r-0.76), (r-0.83) was noted. The normative values of diuresis of the fetus in different terms of gestation are calculated.

Diuretic parameters weeks	18–22	23–26	27–30	31–33	34–36	37–40
ml\minute	M = 0,07	M =0,13	M =0,21	M =0,48	M=0,71	M =0,64
ml\hour	M = 4,26	M =7,77	M =11,44	M =28,7	M =42,8	M =38,74
ml\hour\kg	M = 9.93	M =9,63	M =9,93	M=15,15	M=17,57	M =12,95

Comparison of diuresis of the fetus with diuresis of the newborn, it becomes evident that, starting from the 20th week of gestation, the fetal diuresis exceeds the newborn diuresis.

CONCLUSIONS

The fetus has high level diuresis, which can be regarded as a natural diuretic load, the special physiological significance of which can be the formation and regulation of the detrusor functions.

16:32–16:35

S3-13 (PP)

FLOW CHARACTERISTICS OF URETHRAL CATHETERS FOR CIC IN CHILDREN

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PURPOSE

For CIC, little information exists regarding catheter flow rates, to guide catheter selection.

MATERIAL AND METHODS

3 sizes – 8, 10, and 12 french, of 10 male catheters were selected. Using microscopic imaging and a precision caliper, we determined inner diameter (I.D.) and tip/inlet hole size. With a hydraulic system modified from ASTM specifications, we measured flow rate (Q) at 20 cmH2O and 40 cmH2O.

RESULTS

Average Q for 8, 10, 12 Fr. sizes respectively were 15 %, 33 %, 55 % lower than the laminar flow predictions. Since the flow regime of an 8 Fr. catheter was laminar (Reynolds number, Re<1100), the correlation between Q and I.D. matched well with predictions from the Hagan-Poiseuille equation, with minor impact of the inlet dimensions. All catheters had an opening area ratio (A.R. = area of inlet holes / lumen) larger than 1.0 – ranging from 1.1 < A.R. < 4.0, without size dependency. With 10 Fr. at 40 cmH2O and 12 Fr. at 20 and 40 cmH2O, we identified deviation from the laminar flow prediction. The impact of A.R. became significant as the flow transitioned to turbulence (Re>2000). Our results also show that the reversed, non-physiologic flow direction for Q measurement suggested by ASTM, overestimates Q at high Re conditions.

CONCLUSIONS

Though I.D. is the dominant parameter to characterize Q, there is a significant impact of A.R. on larger catheters with higher hydraulic pressure conditions. Proper configuration of inlet holes at the tip, could improve Q about 20 % for 12 Fr. catheters. Better design of catheters could lessen time for CIC.

16:35–16:38

S3-14 (PP)

★ NEUROBLASTOMA CHEMOTHERAPY CAN BE AUGMENTED BY IMMUNOTARGETING O-ACETYL-GD2 TUMOR-ASSOCIATED GANGLIOSIDE

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PURPOSE

Despite recent advances in high-risk neuroblastoma therapy, the prognosis for patients remains poor. In addition, many patients suffer from complications related to available therapies that are highly detrimental to their quality of life. New treatment modalities are, thus, urgently needed to further improve the efficacy and reduce the toxicity of existing therapies. Since antibodies specific for O-acetyl GD2 ganglioside display pro-apoptotic activity against neuroblastoma cells, we hypothesized that combination of immunotherapy could enhance tumor efficacy of neuroblastoma chemotherapy.

MATERIAL AND METHODS

Studies were done using Anti-OAcGD2 mAb 8B6 (IgG2a, kappa) previously obtained in our laboratory. An isotype-control mAb (DOTA-IgG2a, kappa) was used as a negative control. Evaluated chemotherapy was Topotecan. Human cell lines (LAN1, LAN5 and IMR5) were used for in vitro studies and mouse cell line NXS2 for in vitro and in vivo evaluation. Topotecan and mAb 8B6 interactions were analyzed for synergistic, additive, or antagonistic effect using the combination index (CI) method developed by Chou and Talalay.

RESULTS

We demonstrate here that combination of anti-O-acetyl GD2 monoclonal antibody 8B6 with topotecan synergistically inhibited neuroblastoma cell proliferation, as shown by the combination index values. Mechanistically, we evidence that mAb 8B6 induced plasma cell membrane lesions, consistent with oncosis. Neuroblastoma tumour cells treated with mAb 8B6 indeed showed an increased uptake of topotecan by the tumor cells and a more profound tumor cell death evidenced by increased caspase-3 activation. We also found that the combination with topotecan plus monoclonal antibody 8B6 showed a more potent anti-tumor efficacyin vivothan either agent alone. Importantly, we used low-doses of topotecan with no noticeable side effect.

CONCLUSIONS

Our data suggest that chemo-immunotherapy combinations may improve the clinical efficacy and safety profile of current chemotherapeutic modalities of neuroblastoma.

16:38–17:05

Discussion

S4: VESICOURETERAL REFLUX 1

Moderators: Ram Subramaniam (UK), Kathy Herbst (USA)

ESPU Meeting on Thursday 12, April 2018, 08:20 – 08:52

08:20 – 08:25

S4-1 (LO)

★ RANDOMIZED CLINICAL TRIAL BETWEEN POLYACRYLATE-POLYALCOHOL COPOLYMER (PPC) AND DEXTRANOMER-HYALURONIC ACID COPOLYMER (DX/HA) AS BULKING AGENTS FOR ENDOSCOPIC TREATMENT OF PRIMARY VESICOURETERAL REFLUX (VUR) GRADES III, IV AND V.

Luis GARCIA-APARICIO[1], Eva BLAZQUEZ-GOMEZ[2], Sonia PÉREZ-BERTÓLEZ[1], Jenny ARBOLEDA[1], Oriol MARTIN[1] and Xavier TARRADO[3]

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PURPOSE

The aim of our study is to compare the outcome of endoscopic treatment of VUR using PPC or Dx/HA.

MATERIAL AND METHODS

From October 2014 to April 2017 patients with VUR >= 3 that needed endoscopic treatment (ET) were eligible for this randomized clinical trial. Patients were randomized in two groups: PPC group and Dx/HA group. After endoscopic treatment a voiding cystourethrography (VCUG) was performed at 6 months; if VUR was still present a second and last ET was performed. Ureteral reimplantation was proposed if after two ET patient had a VUR>=3. Radiological success was considered if post-operative VUR grade was 0 and clinical success was considered if no more urinary tract infection (UTI) appeared. In bilateral cases, those ureters with VUR<3 were excluded.

RESULTS

Forty six patients were eligible but 2 did not accept the trial, then 44 patients with 63 refluxing ureters (RU)>=3 were included. PPC group: 21 patients (29 RU); and Dx/HA group: 23 patients (34 RU). Both groups were statistically homogeneous. Radiological success rate was 82.75 % of RU in PPC group and 79.4 % in Dx/HA group (p=0.496). Clinical success rate was 95.2 % of patients in PPC group and 91.3 % in Dx/HA group (p>0.05). There were no differences in the radiological success rate after one treatment. The volume of bulking agent used in those successfully treated is greater in Dx/HA group (p<0.05). After 2 endoscopic treatments, 3 patients with 5 RU in PPC group and 4 patients with 7 RU in Dx/HA group underwent ureteral reimplantation. On patient with 1 RU in Dx/HA were managed conservatively. Distal ureter in all cases of ureteral reimplantation post-PPC were excise, instead distal ureter was not excise in all ureters reimplanted post-Dx/HA injection.

CONCLUSIONS

PPC and Dx/HA has similar outcome, but we must warn that ureteral reimplantation after endoscopic treatment with PPC is difficult because of the periureteral fibrosis.

08:25–08:28

S4-2 (PP)

COMPARATIVE EVALUATION OF ENDOSCOPIC TREATMENT FOR HIGH GRADE VESICOURETERAL REFLUX IN CHILDREN USING HYALURONIC ACID COPOLYMER (URODEX) AND POLYACRYLATE-POLYALCOHOL COPOLYMER (VANTRIS)

Dmitry SHAKHNOVSKIY, Eranui BARSEGYAN and Sergei ZORKIN

National Medical Research Center of Children's Health, Urology, Moscow, RUSSIAN FEDERATION

PURPOSE

To date, endoscopic injection of bulking agents is a worldwide accepted first line option for treatment of all VUR grades due to it's minimal invasiveness and high success rate. The goal of this study was to evaluate an efficiency of endoscopic correction for high grade VUR using Vantris and Urodex bulking agents.

MATERIAL AND METHODS

From 2011 to 2016 a total of 199 children (86 boys and 113 girls) with a mean age of 2.1 years (range 7 months – 6,3 years) were treated endoscopically with Urodex and Vantris injection. In the study were included patients with only primary nonsyndromic VUR with grades IV–V. It was unilateral in 72 and bilateral in 127 patients, comprising 296 renal refluxing units (RRUs). We employed a single (STING/HIT1) injection technique for polymer insufflation. Results were evaluated using voiding cystouretrography after 6–8 months. Positive outcome we considered to be a complete elimination of reflux after a single injection.

RESULTS

148 children (223 RRUs) were treated using Urodex with a mean volume of bulking agent 1,6±0,3 ml. VUR resolution rate was 53,4 % after first injection. 51 children (73 RRUs) were treated using Vantris with a mean volume of bulking agent 0,35±0,15 ml. VUR resolution rate was 75,6 % after first injection. Vantris was found to be more effective than Urodex (Pearson χ^2 26,28, p=95 %). Vesicoureteral junction obstruction, requiring stent insertion, developed in 4 ureters in Vantris group (5,5 %). Six patients in both groups (3 %) developed febrile urinary tract infection.

CONCLUSIONS

Results of this study confirm that endoscopic correction of VUR using Urodex and Vantris bulking agents is an effective procedure for treating high grades of VUR. In single injection technique Vantris is more effective than Urodex, but the possibility of late ureteral obstruction has to be taken into account employing Vantris bulking agent.

08:28–08:34

Discussion

08:34–08:37

S4-3 (PP)

RESULTS OF A NEW TECHNIQUE ADDRESSING LATE OBSTRUCTIONS AFTER ENDOSCOPIC TREATMENT OF VESICOURETERAL REFLUX

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PURPOSE

Late obstructions (LO) belong to the most severe complications after endoscopic treatment of vesicoureteral reflux (VUR). Ureteral reimplantation is the most popular and efficient method of LO elimination. We analyzed the results of LO elimination by means of transurethral implantectomy accomplished through dissected bladder mucosa.

MATERIAL AND METHODS

During the recent 20 years, 4115 endoscopic VUR corrections were performed in 5 hospitals. LO were revealed in 27 cases. In 9 patients with post-STING mound formed inside the bladder, the obstruction was removed using transurethral dissection of the bladder mucosa above the implant, fragmentation of the latter and its evacuation from the bladder. Average age of the patients was 41±19 months (6 girls and 3 boys). Average reflux grade was 3,4. Unilateral VUR – 4 children, bilateral in 5 patients. LO was formed following the first endoscopic treatment in 6 cases, in 3 children – after the second implant injection. In 5 children a copolymer of polyacrylate-polyvinyl alcohol was used for the implant, in 4 – a dextranomer/hyaluronic acid based bulking agent. In 7 cases an ureteral stent was inserted. A follow-up examination took place after stent extraction (in 2 months), in 6 months ultrasonography, diuretic renography (DR) and micturating cystography (MC) were performed.

RESULTS

In 8 cases implant evacuation after transurethral mucosa incision was successful. One patient had a damaged wall of the intravesical ureter and therefore ureteral reimplantation was performed. In 2 months following the surgery a pronounced reduction of pelvicalyceal dilatation was noted in 7 children after the stent extraction and one child without drainage. In 6 months 6 patients were examined; according to the MC results, no reflux was found, DR returned no data indicating obstruction.

CONCLUSIONS

Transurethral mucosa dissection and evacuation of intravesicular implant is an efficient alternative to ureter reimplantation in LO cases.

08:37–08:40

S4-4 (PP)

IF THERE IS AN INCREASE IN UVJ OBSTRUCTION DURING LONG TERM FOLLOW AFTER ENDOSCOPIC CORRECTION OF VUR UTILIZING VANTRIS?

Stanislav KOCHEROV[1], Sergey NIKOLAEV[2], Jaber JAWDAT[1], Ludmila MENOVSHCHIKOVA[2], Semen KOVARSKIY[2], Tatiana SKLIAROVA[2] and Boris CHERTIN[3]

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PURPOSE

We present a long-term follow-up of patients who underwent VUR correction with Vantris injection with an emphasis on UVJ obstruction and urinary tract infection.

MATERIAL AND METHODS

During 2009–2012, 157children (106 girls and 51 boys) with mean age of 4.8 ± 2.8 years (mean ± SD) underwent endoscopic correction of VUR using Vantris. VUR was unilateral in 74 patients and bilateral in 83 comprising 240 renal reflux units (RRU). Of these, primary VUR was present in 197 RRU (82.1 %) and 43 (17.9 %) were complex cases. 126 (80.3 %) had Breakthrough febrile UTI and in 32 (19.7 %) patients reflux was diagnosed due to antenatal hydronephrosis. Median follow-up was 6 years (range 5–8 years).

RESULTS

Reflux was corrected in 222 RRU (92.5 %) after a single injection, after the second injection in 10 RRU (4.2 %). In RRU 7 (2.9 %), reflux downgraded to Grade I and II, and they were taken off antibiotic prophylaxis. One patient (0.4 %) failed endoscopic correction and required ureteral reimplantation (UR). 11 (4.6 %) RRU developed UVJ obstruction, of which 9 (3.8 %) required UR. In these patients reflux was Grade III in 1 RRU, Grade IV in 3 and V in 3 RRU respectively. All patients developed obstruction between one to two years after injection. All these ureters were injected with an average of 1.2 ml (0.6–1.8) of Vantris. 19 (12.1 %) patients developed low UTI, and 12 (7.6 %) patients developed febrile UTI during follow up. None of these patients had reflux recurrence.

CONCLUSIONS

Our data indicate that endoscopic correction utilizing Vantris does not increase the risk of obstruction during long term follow up and significantly reduces the risk of acute pyelonephritis after successful repair. However, the use of Vantris in patients with high-grade reflux and the injection of a large amount of material might lead to the increased incidence of UVJ obstruction and need in subsequent UR.

08:40 – 08:43

S4-5 (PP)

LOWER URINARY TRACT DYSFUNCTION IN PATIENTS WHO UNDERWENT URETERONEOCYSTOSTOMY DUE TO VESICOURETERAL REFLUX: LONG TERM FOLLOW-UP

Goksel BAYAR[1], Süleyman SAHIN[2], Hasan DEMIRKAN[2] and Kaya HORASANLI[2]

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2) Sisli Hamidiye Etfal Training and Research Hospital, Urology, Istanbul, TURKEY

PURPOSE
To evaluate the long-term lower urinary tract dysfunction (LUTD) in patients who underwent ureteroneocystostomy due to vesicoureteral reflux.

MATERIAL AND METHODS
Sixty-one patients were included in the study retrospectively. Patients were divided into three groups: Group 1 (n: 26) without LUTD; Group 2 (n: 23) with LUTD and Group 3 (n: 12) was composed of the patients who were not toilet trained preoperatively. Patients were reassessed about de novo or persistence of LUTD at least seven years later.

RESULTS
Mean age of the patients was 7 years (1 – 15 years) and surgical approach resulted in a 92 % success rate. Mean follow-up period was 10 years (7 – 12 years). Post-operative LUTD was present in 6 out of 26 (23 %) in Group-1; 12 out of 23 (52 %) in Group-2, and 1 out of 12 patients (8.3 %) in Group-3. Presence of LUTD before surgery and bilateral repair in the same setting were the predictive risk parameters for the presence of LUTD on long-term follow-up. LUTD was higher in Group-2 (52 %) than in Group-1 (23 %) and 3 (8.3 %) (p=0.015). De-novo LUTD presence was found significantly in Group-1 when compared to pre-op and post-op LUTD presence with Wilcoxon analysis (p= 0.031).

CONCLUSIONS
LUTD may not resolve after ureteroneocystostomy and additional therapy could be necessary. Due to the probability of damage to the ureterovesical nerve and/or disturbed bladder dynamics, de novo LUTD may occur in patients with bilateral high-grade reflux and without LUTD before ureteroneocystostomy.

08:43 – 08:52

Discussion

S5: VESICOURETERAL REFLUX 2

Moderators: Goedele Beckers (Netherlands), Alexander Springer (Austria)

ESPU Meeting on Thursday 12, April 2018, 08:52–09:34

08:52–08:55

S5-1 (PP)

★ POSTNATAL IMAGING OF PRENATALLY DETECTED HYRONEPHROSIS – WHEN IS VOIDING CYSTOURETHROGRAM NECESSARY?

Sofia VISURI[1], Reetta KIVISAARI[2], Timo JAHNUKAINEN[3] and Seppo TASKINEN[1]

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PURPOSE

To evaluate whether grade 4–5 vesicoureteral reflux (VUR) and increased risk for UTI can be predicted from renal ultrasound (RUS) findings and perform voiding cystourethrograms (VCUGs) only on high-risk patients.

MATERIAL AND METHODS

After ethical approval RUS and VCUG images of infants with prenatally detected hydronephrosis (HN) admitted to our institution between the years 2003–2013 were re-evaluated. The UTI episodes were collected retrospectively from the patient journals. Patients with complex urinary tract anomalies were excluded.

RESULTS

One-hundred-eighty patients (352 renal units (RU)), 23 (30 RU) of them having grade 4–5 VUR were included. The median age of the patients at the time of the RUS was 1.3 (0.1–3.0) months and the median follow up-time was 2.0 (0.1–11.2) years.

In multivariate analysis, a visible ureter (OR 12.72; CI 5.33–32.04, p<0.001) and shorter renal length (OR 2.67; CR 1.50–4.86, p<0.001) in RUS predicted grade 4–5 VUR while a visible ureter predicted UTI (OR 5.93; CI 2.83–12.30, p<0.001).

A three-grade risk score was developed based on the RUS findings and the patients were categorized into low-, intermediate- and high-risk groups. The incidence of grade 4–5 VUR was 2.9 % in the low-risk, 12.2 % in the intermediate-risk and 52.2 % in the high-risk groups. The sensitivity for detecting grade 4–5 VUR was 79 % and the specificity 82 % respectively.

CONCLUSIONS

A visible ureter and reduced renal length in RUS are significant risk factors for high-grade VUR. Our results suggest that by using RUS based risk scoring a significant portion of unnecessary VCUGs can be avoided.

08:55–08:58

S5-2 (PP)

DIAGNOSTIC ACCURACY OF VOIDING DYSFUNCTION PATTERNS AS A PREDICTIVE TOOL OF VESICOURETERAL REFLUX RESOLUTION AFTER FIRST ENDOSCOPIC TREATMENT

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La Fe Universitarian Hospital, Pediatric Urology Unit, Valencia, SPAIN

PURPOSE

To design a classification of dysfunctional voiding patterns associated with vesicoureteral reflux in children, to evaluate the diagnostic performance of it and compare it with the existing classification.

MATERIAL AND METHODS

Cross-sectional ambispective study of 48 children with vesicoureteral reflux treated between January 2013 and February 2015. Those with previous endoscopic treatment, age <3 years, anatomical or neurological abnormalities and a history of urethroplasty or major abdominal surgery were excluded. Demographic, anatomical, surgical and noninvasive urodynamic variables (voiding diary, uroflowmetry with electromyography, residual urine and bladder wall thickness) were collected. The outcome variable was the correctness of reflux (by isotopic cystography) three months after the endoscopic treatment. A classification of voiding patterns was performed taking into account the most relevant variables for the outcome and diagnostic performance was evaluated finally compared with the Van Batavia et al dysfunctional voiding classification 1.

RESULTS

Mean age of the sample was 6.8 +/- 2.28 years. The rate of reflux correction after the first treatment was 77 %. All urodynamic variables were included in the classification, which correctly identified 75 % of our sample, with sensitivity of 87.8 %, specificity 46.6 %, positive predictive value (PPV) 78.3 % and negative predictive value (NPV) 63,6 %. Using Van Batavia et al classification: sensitivity 32,4 %, specificity 54,55 %, PPV 70,59 %, NPV 19,35 %.

CONCLUSIONS

Our classification shows good sensitivity and better predictive values of the result after first endoscopic treatment and it can be compared with the Van Batavia et al classification.

08:58–09:01

S5-3 (PP)

FOOT PRINT SIGN: COULD VOIDING CYSTOURETHROGRAPHY DISCOVER POOR RENAL FUNCTION IN VESICOURETERAL REFLUX?

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PURPOSE

Imaging modalities compromise a critical part of patients' diagnosis and follow-up in the VUR. While VCUG is considered the standard technique for diagnosis, controversies exist on application of other modalities for investigating renal function. In this study we aim to introduce "foot print" sign; an acute-phase sign observed in VCUG that could add information regarding patient's renal function.

MATERIAL AND METHODS

In this retrospective study, medical records of 210 patients diagnosed with VUR were reviewed. Patients with either foot print sign in their VCUG or high grade VUR (grade IV, V) were included in the study. Renal function was compared between patients with or without foot print sign, by the aid of recorded Relative DMSA uptake percentages.

RESULTS

Fifty-nine patients with a mean age of 11.4 months were included. Among these patient, eleven renal units with foot print sign were recorded. Analysis of patients' records demonstrated that relative DMSA uptake percentage was significantly lower ($p<0.001$) in renal units with foot print sign (12.93 %) compared to those without this sign (37.91 %). Ten out of thirteen patients with relative DMSA uptake of less than 20 percent had footprint sign. Sensitivity, specificity, PPV, and NPV of the foot print sign for detection of refluxing units with relative DMSA uptake less than 20 % was 76.9 %, 99.7 %, 90.9 % and 93.6 % respectively.

CONCLUSIONS

Footprint sign could be an indicator of poor renal function, even in patients with moderate VUR; therefore, its observation in VCUG suggests further functional imaging including DMSA scintigraphy.

09:01–09:04

S5-4 (PP)

★ DID OUR CURRENT INITIAL TREATMENT PRACTICE CHANGE AFTER EAU/ESPU VESICOURETERAL REFLUX RISK GROUPING?

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PURPOSE

To investigate how our initial treatment procedures were affected by EAU/ESPU guideline reflux risk grouping in our patients with VUR.

MATERIAL AND METHODS

334 renal units with regular clinical follow-up who were treated due to VUR (vesicoureteral reflux) between years 2009–2017 were retrospectively reviewed. Preoperative clinical parameters as grade and laterality of reflux, presence of renal scar, initial and follow-up treatments, findings of medical treatment and surgical procedures were analysed. The initial medical and surgical methods were compared by categorizing patients according to risk groups before and after 2013.

RESULTS

Mean age and follow-up duration were 71,4(6–216)months and 47(4–141) months, respectively. VUR gradings of the preoperative voiding cystourethrography were determined as grade 1 in 3(0,9 %),grade 2 in 29(8,7 %),grade 3 in 173(51,8 %),grade 4 in 94(28,1 %) and grade 5 in 35(10,5 %) patients. We have noticed significant decrease of surgical treatment rates in low risk group after 2013. While no significant difference in medical and surgical treatment rates is observed after risk grouping system in low risk group, the percents of patients who are treated with surgical methods initially were significantly decreased in moderate and high risk groups (p:0,002,p:0,012). (Table).

Table: Distribution of EAU/ESPU VUR classification according to initial treatments.

EAU/ESPU VUR Grouping		Medical Treatment(%)	Surgical Treatment(%)	p value
Low risk	Before 2013	15(26,8)	41(73,2)	0.179
	After 2013	4(50)	4(50)	
Moderate risk	Before 2013	44(30,1)	102(69,9)	0.002
	After 2013	20(58,8)	14(41,2)	
High risk	Before 2013	20(26,7)	55(73,3)	0.012
	After 2013	9(60)	6 (40)	
Total		112(33)	222(67)	

CONCLUSIONS

EAU/ESPU VUR risk grouping system have changed our current practice. This difference caused us to prefer more conservative methods as initial treatment in all risk groups.

09:01 – 09:04

S5-5 (PP)

[PRESENTATION GROUPED WITH PREVIOUS] HOW DID OUR TREATMENTS BEFORE AND AFTER EAU/ESPU VUR RISK GROUPING SYSTEM AFFECT OUR EARLY SUCCESS RATES?

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PURPOSE

To compare the early clinical results of treatments performed before and after EAU/ESPU VUR classification due to vesicoureteral reflux.

MATERIAL AND METHODS

334 renal units with regular clinical follow-up who were treated due to VUR(vesicoureteral reflux) between years 2009–2017 were retrospectively reviewed. Preoperative clinical parameters as grade and laterality of reflux, presence of renal scar, initial and follow-up treatments, findings of medical treatment and surgical procedures were analysed by grouping patients according to initial treatment year,as before and after 2013. Clinical outcomes of surgical and medical treatments were compared in both groups; before and after 2013. Clinical failure was identified as; performing surgery for nonresponsive cases to medication, symptomatic urinary tract infection after surgery and new renal scar in postoperative DMSA.

RESULTS

Mean age and follow-up duration were 71,4(6–216)months and 47(4–141)months, respectively. We determined that VUR risk grouping does not change clinical success significantly in all risk groups (table)

VUR RISK GROUP	INITIAL TREATMENT YEAR	TREATMENT SUCCESS	MEDICAL(%)	SURGERY(%)
LOW RISK	BEFORE 2013	SUCCESSFULL	2(13)	38(93)
		UNSUCCESSFULL	13(87)	3(7)
	AFTER 2013	SUCCESSFULL	0	1(25)
		UNSUCCESSFULL	4(100)	3(75)
p VALUE			0.4	<0.001
MODERATE RISK	BEFORE 2013	SUCCESSFULL	5(11)	95(93)
		UNSUCCESSFULL	39(89)	7(7)
	AFTER 2013	SUCCESSFULL	5(25)	11(78)
		UNSUCCESSFULL	15(75)	3(22)
p VALUE			0.164	0.069
HIGH RISK	BEFORE 2013	SUCCESSFULL	1(5)	32(58)
		UNSUCCESSFULL	19(95)	23(42)
	AFTER 2013	SUCCESSFULL	0	4(67)
		UNSUCCESSFULL	9(100)	2(33)
p VALUE			0.495	0.688
TOTAL			112(34)	222(66)

CONCLUSIONS

Despite the fact that EAU/ESPU VUR risk classification changed our current practice in terms of initial treatment method, this different approach did not seem to affect early clinical success positively. There is still an absolute need for studies with larger sample size and long-term follow-up to reach more reliable results.

09:04–09:19

Discussion

09:19 – 09:22

S5-6 (PP)

CRITICAL ANALYSIS OF THE OUTCOME OF PRIMARY UNILATERAL VESICOURETERAL REFLUX IN A CONTEMPORARY SERIES

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PURPOSE

Vesicoureteral reflux (VUR) is a common finding in pediatric age with the risk of repeated urinary tract infections and renal damage. Herein we explored the possible risk factors which affect the resolution rate in patients with primary unilateral VUR under conservative treatment.

MATERIAL AND METHODS

We retrospectively evaluated all patients with VUR between 2006 and 2014 and only patients with primary unilateral VUR were included. Records were reviewed for age at diagnosis, antenatal history, gender, mode of presentation, side and grade of VUR, associated hydronephrosis (HN), presence of scarring and split function on DMSA. Clinical and radiological outcomes were assessed. Both univariate and multivariate analysis were conducted.

RESULTS

A total of 68 patients (32 boys and 36 girls) with primary unilateral VUR were included with a mean age at diagnosis of 10 months. Antenatal HN was detected in 50 % of patients. VUR was high grade (IV – V) in 22 patients (32 %). Associated HN was evident in 39 patients (57 %). DMSA scans showed renal scarring in 16 patients (23 %) and a mean split function of 47 %. After a mean follow-up of 7 years, VUR resolved in 49 patients (72 %). VUR grade, DMSA split function, and associated high-grade HN were significant predictors for VUR resolution. On multivariate analysis, the presence of high-grade HN with VUR was the only significant independent risk factor.

CONCLUSIONS

Resolution rate in primary unilateral VUR under conservative treatment is significantly affected by grade of VUR, split renal function on DMSA and presence of high-grade HN. Association of high-grade HN with VUR carries a low chance for spontaneous resolution.

09:22–09:25

S5-7 (PP)

A META-ANALYSIS OF THE FATE OF CONTRALATERAL VESICO-URETERAL REFLUX IN UNILATERAL MULTICYSTIC DYSPLASTIC KIDNEY

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PURPOSE

To describe the incidence, management (continuous antibiotic prophylaxis (CAP) use and surgical interventions) and evolution (UTI and spontaneous resolution rates) of each vesico-ureteral reflux (VUR) grade in the contralateral kidney of unilateral multicystic dysplastic kidney (MCDK) patients, in order to strengthen the scientific basis regarding the need for voiding cystourethrography (VCUG) screening.

MATERIAL AND METHODS

A comprehensive search of MEDLINE, EMBASE, CINHAL, WEB OF SCIENCE, COCHRANE and gray literature was performed (1950 – July 2015). Full-text screening, data abstraction and quality appraisal were conducted in duplicate. Included studies reported a primary diagnosis of unilateral MCDK with contralateral VUR determined by VCUG. Articles had to include a distribution of VUR grade to meet the eligibility criteria.

RESULTS

From 657 retrieved articles, 37 studies enrolling 2057 patients were analyzed. 87 % (80–92 %) were diagnosed with MCDK prenatally (80 % males). 1800 patients had VCUG, 303 had VUR (weighted proportion 17 %; 95 % CI: 14 %–20). Weighted proportions of VUR were 9 %, 7 % and 17 % for grades I–II, III–V, and I–V, respectively. 99 % of patients were on CAP and 18 % (95 % CI: 8–37 %) had UTIs, with a higher rate of UTIs (23 % vs 10 %) in patients with dilating (grades 3–5) VUR, over a mean follow-up of 40 months. In patients with dilating VUR, reflux resolved or downgraded to grade I in 52 % of patients, and 11 % had surgical correction of VUR.

CONCLUSIONS

Dilating VUR proportion is significant (7 %) in the contralateral functioning kidney of patients with unilateral MCDK but due to lack of sufficient conclusive data, VCUG screening cannot be explicitly recommended.

09:25–09:28

S5-8 (PP)

THE INCIDENCE AND RISK FACTORS OF BREAKTHROUGH URINARY TRACT INFECTION AND URINARY TRACT INFECTION AFTER STOPPING CONTINUOUS ANTIBIOTIC PROPHYLAXIS IN CHILDREN WITH PRIMARY VESICOURETERAL REFLUX

Michiko NAKAMURA[1], Kimihiko MORIYA[2], Yoko NISHIMURA[2], Masafumi KON[2], Yukiko KANNO[2], Takeya KITTA[2] and Nobuo SHINOHARA[2]

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INTRODUCTION

Our strategy for management of primary vesicoureteral reflux (VUR) is basically active surveillance. Continuous antibiotic prophylaxis (CAP) is indicated for all children with VUR. We retrospectively investigated the incidence and risk factors of urinary tract infection (UTI) during and after CAP in children with primary VUR.

PATIENTS AND METHODS

Among children with primary VUR, we included children who had first detected VUR before 36 months old in this study. VUR was classified into 5 grades, and high grade reflux was defined as grade 4 and 5. Statistical analysis was performed by Cox's proportional hazard regression model. $P<0.05$ was considered significant.

RESULTS

Of 240 children with primary VUR, 203 children (152 boys and 51 girls) were enrolled in the present study. Median age at initial evaluation was 5.6 months old, and median follow up was 5.2 years. Presenting symptom was mainly febrile UTI. CAP was administered in 196 children. Breakthrough UTI was detected in 51 children (26.0 %). Breakthrough UTI occurred within 20 months beginning CAP. Median age at stopping CAP was 24.1 months old. Of 126 children after stopping CAP, UTI was detected in 27 (21.4 %). Median age of UTI after stopping CAP was 45.7 months old. On multivariate analysis, risk factor of breakthrough UTI was high grade VUR on initial evaluation ($p=0.0202$). On the other hand, risk factors of UTI after stopping CAP were girls ($p=0.0408$) and abnormal findings of DMSA scan ($p=0.0383$). UTI during follow up had occurred within age of 10 years.

CONCLUSIONS

We revealed that high grade VUR was risk factor for breakthrough UTI, and girls and abnormal findings on DMSA scan were risk factors for UTI after stopping CAP. Longer administration of CAP or prophylactic surgery before recurrent UTI should be indicated in patients with these risk factors.

09:28–09:37

Discussion

S6: OBSTRUCTION & HYDRONEPHROSIS 1

Moderators: Josef Oswald (Austria), Darius Bagli (Canada)

ESPU Meeting on Thursday 12, April 2018, 09:34 – 10:20

09:34 – 09:39

S6-1 (LO)

★ SUPRANORMAL RENAL FUNCTION IN UNILATERAL HYDRONEPHROTIC PAEDIATRIC KIDNEYS: PREOPERATIVE AND POSTOPERATIVE PECULIARITIES

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PURPOSE
The meaning of supranormal (SN) differential renal function (DRF) on unilateral hydronephrotic kidneys remains controversial. Our objective was to compare preoperative and postoperative characteristics in SN DRF patients with non-SN DRF patients.

MATERIAL AND METHODS
Our prospectively collected pyeloplasty database was reviewed. Patients operated between 2012 and 2017 were included (n=91). We excluded 13 patients with bilateral hydronephrosis, vesicoureteral reflux, redo pyeloplasty or solitary kidney. SN-group was formed by the 9 patients (11.5 %) who had preoperative supranormal DRF defined as DRF ≥ 55 %. Remaining 69 patients formed the non-SN group. The following parameters were collected: age, sex, anteroposterior renal pelvis diameter, SFU hydronephrosis grade, laterality, aetiology, ultrasound measured kidney volume and renal pelvis volume and pre and postoperative DRF.

RESULTS
The preoperative anteroposterior pelvis diameter (27.4 mm vs. 35.4 mm, p=0.026) and the ratio between preoperative pelvis volume and kidney volume (0.34 vs. 0.93, p<0.0025) were higher in SN group. Preoperative pelvis diameter was a good predictor of supranormal DRF, with an AUC of the ROC curve of 0.804 (95 %CI: 0,707 – 0,902). A pelvis diameter ≥30 mm predicts a supranormal DRF with 88.9 % of sensitivity and 73.9 % of specificity. Pelvis volume/kidney volume ratio was an independent risk factor on multiple regression analysis (p=0.037). There was a greater postoperative loss of function in SN-group compared to non-SN group (-0.3 % vs -6.4 %, p=0.0049).

CONCLUSIONS
Patients with supranormal DRF had larger renal pelvis, higher pelvis volume/kidney volume ratio and function decreased more after pyeloplasty. This suggest that preoperative DRF was overestimated, questioning the role of preoperative function as the main parameter to indicate surgical procedure.

09:39 – 09:42

S6-2 (PP)

ROLE OF URINARY BIOMARKERS IN CORRELATION TO DIURETIC RENOGRAM IN CHILDREN WITH URETERO-PELVIC JUNCTION OBSTRUCTION UNDERGOING PYELOPLASTY

Waleed DAWOOD[1], Haitham BADAWY[2], Samir ORABI[2], Ahmed FAHMY[2], Mohamed YOUSSEF[2], Reham ABDELHALEEM[3] and Mohamed ABDELRAZEK[2]

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PURPOSE

Urinary biomarkers as KIM and NGAL could be used as predictors for structural and functional kidney damage resulting from UPJO, thus can replace diuretic renogram. Our study was to correlate urinary KIM and NGAL levels pre and postoperatively and with the DRF of the affected kidney.

MATERIAL AND METHODS

A prospective controlled study was done in 30 patients treated with unilateral dismembered pyeloplasty from 2016 to 2017. Urine samples were obtained preoperatively, intraoperatively, and 6 months postoperatively. A control group consist of 10 healthy children.

RESULTS

There was an increase in uKIM and uNGAL levels in pre and intraoperative urine samples (4.85 ng/ml, 5.40 ng/ml for NGAL, 0.32 ng/ml, 0.38 ng/ml for KIM), a significant reduction in these levels was found after surgical repair of UPJO (1.5 ng/ml for NGAL, 0.09 ng/ml for KIM), these high levels preoperatively don't significantly correlate with the DRF, also these levels preoperatively was significantly higher than that from control group concerning uNGAL (0.60 ng/ml) but insignificantly higher than that from control group concerning uKIM (0.20 ng/ml).

CONCLUSIONS

Preoperative uKIM-1and uNGAL levels were increased significantly in patients with UPJO undergoing pyeloplasty, these high levels don't significantly correlates with diuretic renogram, and also there was a significant reduction in their concentrations in the postoperative follow-up.

09:42 – 09:45

S6-3 (PP)

POSSIBLE PREDICTIVE FACTORS FOR A SAFE PRENATAL FOLLOW-UP OF FETUSES WITH HYDONEPHROSIS

Abdurrahman ONEN

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PURPOSE

Introduction: To determine the factors affecting the resolution of hydronephrosis, create a follow-up protocol to predict the probability of pre-and/or postnatal resolution, and to refine criteria for a safe follow-up of fetuses with hydronephrosis.

MATERIAL AND METHODS

Patients and methods: A total of 817 fetuses(1078 kidneys) who followed for antenatal hydronephrosis 2001–2016 were reviewed retrospectively. Ultrasound was used for diagnosis and follow-up. Fetuses were divided into two groups; such as <28 weeks and ≥28 weeks of gestation. AP diameter ≥4 mm in 16–27 weeks and ≥7 mm in ≥28 weeks of pregnancy was accepted as hydronephrosis according to UTD Classification System. Degree of hydronephrosis was determined according to AP diameter, Onen grading system and UTD classification. Mean follow-up was 8.2(1–16) years.

RESULTS

531 fetuses(727 kidneys) were diagnosed before 28 weeks of gestation. Of the 531fetuses(727 kidneys) <28weeks of gestation(group 1), AP diameter was 4–6 mm(UTD-1,Onen-1) in 366 kidneys, 7–10 mm(UTD-2,Onen-2) in 144, 11–15 mm(UTD-2–3,Onen-2–3) in 96, 16–20 mm(UTD-3,Onen-3) in 68, and >20 mm(UTD-3,Onen-4) in 53. At the postnatal period, 2.7 % of 4–6 mm patients, 10.4 % of 7–10 mm, 20.8 % of 11–15 mm, 41.2 % of 16–20 mm, 84.9 % of >20 mm required surgery. In group 1, a total of 118 kidneys(16.2 %) required surgery. Of the 286fetuses(351 kidneys)≥28 weeks of gestation(group 2), AP diameter was 7–10 mm(UTD-1,Onen-1) in 162kidneys, 11–15 mm(UTD-2,Onen-2) in 90, 16–20 mm(UTD-2–3,Onen-2–3) in 46, 21–25 mm(UTD-3,Onen-3) in 32, and >25 mm(UTD-3,Onen-4) in 21kidneys. At the postnatal period, 0.6 % of 7–10 mm patients, 5.6 % of 11–15 mm, 17.4 % of 16–20 mm, 28.1 % of 21–25 mm, 66.7 % of >25 mm required surgery. In group 2, a total of 37 kidneys (10.5 %) required surgery.

CONCLUSIONS

Onen grading system is more appropriate in defining the severity of hydronephrosis in utero compared to UTD classification and AP diameter because Onen grading determine whether there is cortical parenchymal loss or not. Fetuses with Onen-1 hydronephrosis or unilateral Onen-2 need to be seen in every 2 months, unilateral Onen-3 or bilateral Onen-2 cases in every month, bilateral Onen-3 or unilateral Onen-4 cases in every 2 weeks, and Onen-4 bilateral cases in every week.

09:45–09:54

Discussion

09:54–09:57

S6-4 (PP)

INCIDENCE OF POSTOBSTRUCTIVE DIURESIS AFTER RESOLUTION OF URETEROPELVIC JUNCTION OBSTRUCTION WITH A NORMAL CONTRALATERAL KIDNEY

Joshua ROTH[1], Jeffrey LEISER[2], Jessica CASEY[3], Konrad SZYMANSKI[1], Benjamin WHITTAM[1], Rosalia MISSERI[1], Martin KAEFER[1], Richard RINK[1] and Mark CAIN[1]

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PURPOSE

Postobstructive diuresis (POD) after pyeloplasty or percutaneous nephrostomy tube (PCN) insertion for ureteropelvic junction obstruction (UPJO) in patients with a normal contralateral kidney is not well described. We sought to determine its incidence and characteristics.

MATERIAL AND METHODS
We retrospectively reviewed pediatric UPJO treated with pyeloplasty or PCN at our institution from 7/1/2010 to 9/30/2017 to determine the rate of POD (urine output >300 % of calculated maintenance fluid) in patients with a normal contralateral kidney. Patients with a solitary kidney or bilateral procedures were excluded.

RESULTS
397/429 (92.5 %) patients with a normal contralateral kidney had treated UPJO. POD occurred 7 times (1.8 %): PCN (n=3), pyeloplasty (n=4). Median intervention age was 1.7 years (range 11 days – 18 years); median weight was 11.4 kg (range 3.7–54.2 kg). There was no significant difference in age, gender, affected kidney laterality, differential kidney size or function between those who developed POD and those who did not. Affected patients were managed with additional intravenous fluids and frequent electrolyte monitoring. Median initial post-procedure urine output was 5.9 mg/kg/hr (range 3.2 - 10.0 mg/kg/hr). Five had nephrostomy tubes following their procedure; two had indwelling stents. In those with nephrostomy tubes, median initial post-procedure urine output from the affected side was 6.1 mg/kg/hr (range 2.5–9.1 mg/kg/hr) and 0.8 mg/kg/hr (range 0.4–0.9 mg/kg/hr) from the non-affected side. Median POD resolution was 3 days (range 2–4 days). One patient developed acidosis, acute renal insufficiency and lethargy. Mild hyponatremia developed in 2, hypokalemia in 1, hypomagnesemia in 0, hypophosphatemia in 1, and hypoglycemia in 1.

CONCLUSIONS
POD after resolution of UPJO with pyeloplasty or PCN with a normal contralateral kidney is a rare event (1.8 %) that requires careful monitoring given the potential for significant dehydration and electrolyte disturbances.

09:57 – 10:00

S6-5 (PP)

PREDICTORS OF RECURRENCE AND COMPLICATIONS IN PEDIATRIC PYELOPLASTY

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PURPOSE
Failed pyeloplasties are challenging cases. To point out ways of better manipulation we assessed the predictors of recurrence and complications in pediatric pyeloplasty.

MATERIAL AND METHODS
We analyzed 490 renal units whom underwent primary dismembered pyeloplasty with eligible data between June 2001 and October 2016 retrospectively. Patient's demographic features, operative data, clinical findings, complications and recurrence rates were evaluated.

RESULTS
The mean follow-up time after pyeloplasty was 47.6 (±37.7) months. Our recurrence and complication rates were 6.7 % and 11.4 %, respectively. Urinary tract infection (7.8 %), diversion related complications (1.8 %) and urinoma (1.4 %) were the most common complications. Presence of preoperative diversion (p=0.020) and experiencing early complications (p<0.001) after pyeloplasty were significantly related to recurrence. Complication rates were founded less in children with

transanastomotic diversions (p=0.002) and children without pre-operative diversion (p=0.005). The analysis of patients in chronological order revealed an increase in prenatal diagnosis in the recent years (p<0.001). Recurrence and complications were not found to be related with age, gender, side, hydronephrosis grade, surgery type and surgical findings.

CONCLUSIONS

Surgical treatment of UPJ obstruction is satisfactory in any age and hydronephrosis grade. Recurrences are closely related to the presence of early postoperative complication and diversion type. Placing temporarily preoperative diversions (either internal or external) should not be encouraged since the postoperative complications and recurrences develop more. However, use of transanastomotic diversions are advantageous in terms of complications.

10:00–10:03

S6-6 (PP)

MANAGEMENT OF HYDRONEPHROSIS WITH LESS THAN 10 % FUNCTION

Rachida LAAMIRI, Nahla KECHICHE, Lasaad SAHNOUN, Mongi MEKKI, Mohsen BELGUITH and Abdelatif NOURI

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PURPOSE

To determine the efficacy and long-term outcome of pyeloplasty in poorly functioning kidneys (less than 10 %) in the pediatric age group.

MATERIAL AND METHODS

We retrospectively analyzed data from 17 infants (15 male, 2 female) with prenatally or postnatally diagnosed hydronephrosis due to UPJO treated by Anderson-Hynes pyeloplasty (AHP) in our hospital over 14 years. The length of postoperative followup was 26 months on average (range 3–80 months)

RESULTS

In 3 patients, percutaneous nephrostomy (PCN) was performed, followed by AHP. 14 patients underwent AHP without preceding PCN. DTPA renograms were done post pyeloplasty period in 10 patients (after 1 year). In 9 patients, split function increased from < 10 % preoperatively to 21,33 % (range 9 to 41 %) postoperatively. Of all patients, only one had significant deterioration in split function and underwent nephrectomy. No complications were noted after pyeloplasty in the 16 over cases.

CONCLUSIONS

Pyeloplasty gives good results in poorly functioning kidneys in the pediatric age group, and in most cases the sacrifice of such kidneys can be avoided. 1 year). In 9 patients, split function increased from < 10 % preoperatively to 21,33 % (range 9 to 41 %) postoperatively. Of all patients, only one had significant deterioration in split function and underwent nephrectomy. No complications were noted after pyeloplasty in the 16 over cases.

10:03–10:08

S6-7 (VP)

RETROCAVAL URETER: AN UNEXPECTED INTRAOPERATIVE FINDING DURING ROBOTIC REDO PYELOPLASTY

Hamdan ALHAZMI[1], Santiago VALLASCIANI[2], Abdulazeem ABASHER[2], Saeed ALSHAHRANI[2], Hossam ALJALLAD[2], Ahmed ALMATHAMI[2], Fadi AZAR[3], Ahmad ALSHAMMARI[4] and Craig PETERS[5]

1) King Saud University, King Saud University Medical City, Pediatric Urology Division, Department of Surgery, Riyadh, SAUDI ARABIA - 2) King Faisal Specialist Hospital and Research Center, Pediatric Urology Division, Urology Dept, Riyadh, SAUDI ARABIA - 3) King Faisal Specialist Hospital and Research Center, Nursing Department, Riyadh, SAUDI ARABIA - 4) National Guard Hospital, Pediatric Urology Division, Surgery Dept, Riyadh, SAUDI ARABIA - 5) Children's Medical Center, University of Texas Southwestern, Pediatric Urology Division, Surgery Dept, Dallas, USA

PURPOSE

Reoperative Pelvi Ureteric Junction obstruction (PUJO) cases are challenging due to the presence of scarring and anatomic distortion. In this video the unexpected intraoperative discovery of a high retrocaval ureter and its management are illustrated.

MATERIAL AND METHODS

a 3-year old male underwent open right Anderson-Hynes dismembered pyeloplasty through a flank incision at age 12 months. In 24 months of follow-up ultrasound and MAG3 scans revealed persistent severe hydronephrosis with an initially delayed washout pattern that bacame frankly obstructed. Robotic redo pyeloplasty was recommended. Retrograde pyelogram revealed a S-shape proximal ureter with a short narrow segment. Using a 3-trocar robotic approach the proximal ureter was found to be surrounded by scar tissue and with an abnormal retrocaval course. The ureter and lower pelvis were mobilized carefully from behind the cava. The prior anatomosis was visibly patent. A dismembered pyeloplasty was done with anterior transposition and partial excision of the retrocaval ureter.

DISCUSSION

Reoperative pyeloplasty requires careful exposure of the proximal ureter and ureteropelvic junction to define the anatomy and determine the cause of the failure of the first procedure. The laparoscopic approach provides excellent vision and exposure of all the structures potentially involved in the recurrence. This case demonstrates the possibility of an unrecognized retrocaval ureter as a cause for pyeloplasty failure.

CONCLUSION

In the case presented, even if unexpected, the retrocaval course of the ureter was able to be managed with this approach.

10:08–10:20

Discussion

S7: HYPOSPADIAS 1

Moderators: Yutaro Hayashi (Japan), Haytham Badawy (Egypt)

ESPU Meeting on Thursday 12, April 2018, 10:50–11:45

10:50–10:55

S7-1 (LO)

★ PREOPERATIVE TOPICAL ESTROGEN TREATMENT VS PLACEBO IN 241 CHILDREN WITH MIDSHAFT AND POSTERIOR HYPOSPADIAS: RESULTS OF A PROSPECTIVE, MULTICENTRIC, DOUBLE-BLIND, RANDOMIZED CONTROLLED STUDY.

Daniela-Brindusa GORDUZA[1], Laurent REMONTET[2], Claire-Lise GAY[3], Ingrid PLOTTON[4], Thomas BLANC[5], Alaa EL GHONEIMI[6], Marc David LECLAIR[7], Pascal ROY[8], Ségolène GAILLARD[9], Meriem EL JANI[9], Yanis MIMOUNI[9], Berouz KASSAI KOUPAI[9], Pierre CHATELAIN[10], Yves MOREL[11] and Pierre MOURIQUAND[12]

1) Hôpital Mère-Enfant - GHE, Service de Chirurgie Uro-Génitale de l'Enfant - Centre de Référence Maladie Rare : Développement…, Bron, FRANCE - 2) Hospices Civils de Lyon, Laboratoire de Biostatistique-Santé (UMR 5558), CNRS/Université Lyon 1, Pierre Bénite, FRANCE - 3) Hospices Civils de Lyon - Centre de Référence Maladie Rare : Développement Génital, Service d'Endocrinologie Pédiatrique, Bron, FRANCE - 4) Hospices Civils de Lyon - Université Claude-Bernard - Lyon 1 - Centre de Référence Maladie Rare : Dé, Service d'Hormonologie et Endocrinologie Moléculaires - Centre de Biologie et Pathologie, Bron, FRANCE - 5) Hôpital Necker - Enfants Malades, 5- Service de Chirurgie Viscérale et Urologie Pédiatrique - INSERM U-1151, Paris, FRANCE - 6) Hôpital Robert Debré - APHP - Université Paris Diderot., Service de Chirurgie et d'Urologie Pédiatriques - Centre de Référence Maladies Endocriniennes, Paris, FRANCE - 7) CHU de Nantes - Hôpital d'Enfants, Service de Chirurgie Pédiatrique, Nantes, FRANCE - 8) Hospices Civils de Lyon - Université Claude-Bernard - Lyon 1, Service de Biostatistique-Santé (UMR 5558), Pierre Bénite Cedex, FRANCE - 9) Centre d'Investigation Clinique 1407 - Hospices Civils de Lyon, INSERM - Université Claude-Bernard, Bron, FRANCE - 10) Centre de Référence Maladie Rare : Développement Génital - Service d'Endocrinologie Pédiatrique, Centre de Référence Maladie Rare : Développement Génital - Service d'Endocrinologie Pédiatrique, Bron, FRANCE - 11) Centre de Référence Maladie Rare : Développement Génital - Service d'Hormonologie et Endocrinologie, Centre de Référence Maladie Rare : Développement Génital - Service d'Hormonologie et Endocrinologie, Bron, FRANCE - 12) Centre de Référence Maladie Rare : Développement Génital - Service de Chirururgie Uro-Génitale, Centre de Référence Maladie Rare : Développement Génital - Service de Chirururgie Uro-Génitale, Bron, FRANCE

PURPOSE

Urethral fistulae and dehiscences are common after hypospadias surgery. Preoperative androgens have been considered as an option to reduce these complications although publications are equivocal. Dermatologists have reported the benefits of topical estrogens on skin healing. We investigated whether topical Promestriene could reduce healing complications.

MATERIAL AND METHODS
A prospective, randomized, placebo-controlled, double-blind parallel trial was conducted. Between 2011 and 2015, in 4 French centers, one-stage Transverse Preputial Island Flap Urethroplasty (Onlay urethroplasty) was proposed for severe hypospadias (i.e. midshaft or more proximal division of the corpus spongiosum). Promestriene or placebo were applied daily on the penis for 2 months before surgery.
The primary outcome was the presence of postoperative urethral fistula or dehiscence during the first year after surgery. Detailed hormonal and anatomical screenings were performed.

RESULTS
The study kept 122 cases in the placebo arm and 119 cases in the Promestriene arm. The primary outcome was unavailable for 11 patients. Healing complications were 16.4 % in the placebo arm (19/116) vs. 14.9 % in the Promestriene arm (17/114) and the adjusted odds ratio (odd Promestriene arm/odd Placebo arm) was 0.93 (p=0.86).

CONCLUSIONS
Although there is an overall drop of complications compared to previous publications from our group, the results of both arms are not statistically different. This can be due either to a lack of power of this study i.e. an insufficient number of cases in each group, or to an absence of benefit from Promestriene over placebo.
Promestriene was provided by former Theramex, now Teva Pharmaceutical Industries Ltd.

10:55–10:58

S7-2 (PP)

★ SCROTAL BASE DISTANCE; A NEW KEY GENITAL MEASUREMENT IN MALES WITH HYPOSPADIAS AND CRYPTORCHIDISM

Tariq Osman ABBAS [1], Mansour ALI [2] and Abdelrahman ELKADHI [2]

1) Hamad General Hospital, Pediatric Surgery, Doha, QATAR - 2) Hamad Medical Corporation, Pediatric Surgery Department, Doha, QATAR

PURPOSE
Anogenital distance (AGD) in animals and humans is a known biomarker of fetal endocrine disruption and the associated testicular dysgenesis syndrome (TDS). However, we introduce and investigate Scrotal Base Distance (SBD) as a sensitive genital anthropometric criterion in human infants with cryptorchidism and hypospadias, which are potential manifestations of TDS during childhood. We aim to compare SBD in boys with cryptorchidism or hypospadias against normative data.

MATERIAL AND METHODS
Boys with isolated cryptorchidism (n = 51, age 11.4 ± 4.8 months) or hypospadias (n = 61, age 17.4 ± 6.3 months) were recruited from a tertiary center for measurement of SBD, AGD and penile length; they were compared with 102 healthy full-term boys from standard ritual circumcision cohort by deriving age-specific standard deviation scores (SDS).

RESULTS
Boys with hypospadias had shorter mean SBD, AGD and penile length SDS than healthy boys (both $p < 0.001$). Mean SBD, AGD and penile length SDS values in boys with cryptorchidism were longer than mean values in boys with hypospadias (both $p < 0.01$) and shorter than mean values in healthy boys (both $p < 0.0001$). Mean penile length SDS decreased as the severity of hypospadias increased (ptrend = 0.078).

CONCLUSIONS
In the study population, SBD, AGD and penile length were reduced in boys with hypospadias or cryptorchidism relative to normative data derived from a longitudinal birth cohort. The findings support the use of SBD as a quantitative biomarker to examine the prenatal effects of exposure to endocrine disruptors on the development of the male genitals.

10:58 – 11:01

S7-3 (PP)

EXTERNAL URETHRAL MEATUS IN BOYS: WHAT IS NORMAL? AND IMPLICATIONS FOR HYPOSPADIAS REPAIR

Tariq Osman ABBAS[1], Dr Mansour ALI[2] and Abdelrahman ELKADHI[2]

1) Hamad General Hospital, Pediatric Surgery, Doha, QATAR - 2) Hamad Medical Corporation, Pediatric Surgery Department, Doha, QATAR

PURPOSE
To investigate the normal external urethral meatal anatomy in boys, and to examine the proportional relationship between meatal size and length of ventral glans closure.

MATERIAL AND METHODS
In all, 103 boys with presumed normal penile anatomy enrolled during ritual circumcision were considered eligible for the study; 9 were not assessed because either the boy or parents declined to participate, leaving 94 boys (mean age 5.9 years, range 0.6 – 13) who completed the study. Meatal length and ventral glans closure measured using ophthalmic calipers.

RESULTS
All 94 boys in the study had a vertical slit-like meatus that commenced at the tip of the penis and ran ventrally. The mean (SD) vertical meatal length was 5.3 (1) mm and the mean length of ventral glans closure was 4.8 (1.1) mm. There was an age-dependent increase in meatal length and a similar association was identified for the length of ventral glans closure. There was also a statistically significant proportional relationship between meatal length and length of glans closure ($r = 0.36$, confidence interval 0.14 – 0.54, $P < 0.001$).

CONCLUSIONS
The location and length of the urethral meatus in normal boys is consistent, and ventral glans closure is equal to or slightly less than meatal length. These data might be of interest to hypospadiologists in their efforts to reconstruct normal glanular anatomy.

11:01 – 11:04

S7-4 (PP)

THE MODIFIED ULAANBAATAR PROCEDURE: REDUCED COMPLICATIONS AND ENHANCED COSMETIC OUTCOME FOR THE MOST SEVERE CASES OF HYPOSPADIAS

Venkata JAYANTHI[1], Seth ALPERT[2], Daniel DAJUSTA[3], Christina CHING[3], Daryl MCLEOD[3] and Molly FUCHS[3]

1) Nationwide Children's Hospital, Section of Urology, Columbus, USA - 2) Nationwide Children's Hospital, Urology, Columbus, USA - 3) Nationwide Children's Hospital, Columbus, USA

PURPOSE

The “Ulaanbaatar” procedure for proximal hypospadias was described by Dewan as a modification of the classic 2-stage procedure in which the glanular urethra is constructed during the first stage. During the second stage, the penile skin between native proximal meatus and the distal reconstructed urethra is tubularized.

MATERIAL AND METHODS

We retrospectively reviewed all patients who completed both stages. The first stage is analogous to a classic repair with regard to urethral plate division and chordee correction. Our modification involves creation of a preputial tubularized island flap which is brought through the glans. The remaining penile skin is used for skin coverage and to bridge the native meatus and the distal neourethra. Six months later, the midline skin is tubularized reconstructing the urethra from the proximal meatus to the previously constructed glanular neourethra.

RESULTS

Forty-two boys underwent both stages. Mean age at 1st stage was 14.5 months (range 6 – 118). Twenty-seven had genital ambiguity(64 %). Thirty-eight (90 %) received pre-operative androgens. After urethral plate transection, persistent curvature was addressed with dorsal plication in 12, urethral plate transection alone in 6 or ventral grafting with small intestinal submucosa (SIS) in 24. Eighty-one % required no futher surgery. Five patients (12 %) developed a urethral diverticulum that required repair. One developed recurrent epididymitis related to an abnormal ejaculatory duct (no stricture) and underwent vasectomy. Only two patients developed a fistula. Another required redo penoscrotal transposition repair. Mean length of follow up is 20.8 months.

CONCLUSIONS

Fistulas are uncommon with this procedure as the gap left after the first stage serves as a controlled fistula, allowing the penile tissue to heal. This technique may improve the cosmetic appearance as the glans is only touched once and for the majority, no formal glanuloplasty is needed.

11:04 – 11:15

Discussion

11:15–11:18

S7-5 (PP)

INLAY BUCCAL MUCOSAL GRAFT, FIRST STAGE HYPOSPADIAS REPAIR: FACTORS PROMOTING SUCCESS

Ezekiel Harold LANDAU[1], Mordechai DUVDEVANI[2], Ofer Nathan GOFRIT[2], Dov PODE[2], Vladimir YUTKIN[2], Ofer Zeev SHENFELD[3], Matan MCKEITEN[2] and Guy HIDAS[1]

1) Hadassah Hebrew University Medical Center, Pediatric Urology Unit, Department of Urology, Jerusalem, ISRAEL - 2) Hadassah Hebrew University Medical Center, Department of Urology, Jerusalem, ISRAEL - 3) Shaarey Zedek Medical Center, Department of Urology, Jerusalem, ISRAEL

PURPOSE

Buccal mucosal (BM) graft is a common surgical method used in our armamentarium of complex hypospadias re-do surgical repair. Quality of the graft and the recipient graft bed determine graft take following first stage, and subsequent success of future urethral tubularization (UT).
We evaluated our outcome of buccal mucosal graft take, focusing on factors responsible for re-do grafting prior to UT.

MATERIAL AND METHODS

The medical records of patients who underwent a first stage inlay BM hypospadias repair (FSIBMHR) were retrospectively, reviewed. We analyzed success rate, and its association with patient's age, graft size, piercing, donor site, and number of previous procedures.

RESULTS

Sixty-one patients (mean age 6.65 years, range 1–25) underwent first stage inlay BM hypospadias repair in 2005–2017. Grafts were sutured to the edges of the urethral bed, and, with quilt sutures, to its underline bed. All patients were either post ritual circumcision (10), or hypospadias failed procedures(mean-2.3, range 1–10). Median graft size as was available from the charts of 48 patients was 25X15 mm. Forty eight grafts (78.7 %) were pierced prior to grafting. The lip served as donor site for 34 (55.7 %) grafts, and the cheek for 24 (39.3 %). 3 (4.9 %) grafts were harvested from both. In 10 (16.4 %) patients graft-take has partially failed and additional grafting was required. Patients' age (p=0.123), number of prior operations (p=0.328), graft size (p=0.247), piercing (p=0.76), and donor site (p=413) were not associated with the need for revision.

CONCLUSIONS

Re-do first stage dorsal inlay BM hypospadias repair was highly successful in our patient population. There was no single factor significantly contributing to failure. Graft piercing, and the type of graft donor site, were not associated with graft-take failure.

11:18–11:21

S7-6 (PP)

CHALLENGE OF POST HYPOSPADIAS REPAIR SKIN RECONSTRUCTION:MODIFIED NEW TECHNIQUE

Mamdouh AHMED, Paradip VINCENT, Islam AMER and Islam AMER

Ibn Sina hospital, Pediatric Urology Unit, Kuwait City, KUWAIT

PURPOSE

Skin reconstrution in hypospaidas repair is challenge to all hypospaidas surgeon. We report a modified and a very easy to practice and cosmetically acceptable technique of skin closure in completely degloved penis for hypospadias.

MATERIAL AND METHODS
In the period between 2014 and 2017, 180 patients with all types of hypospadias underwent surgical repair of skin closure with the modified technique based on our theory that dorsal penile skin provides better blood supply. Our technique consisted of 4 steps: (1) Deglovement of the penile skin till the base, (2) fixation of the penis at the base,(3) Initial fixation of skin at 12 O clock (4) Dorsal longitudinal incision with a Byer's flap on either side (5) Excision of the ventral skin and reconstruction of the penoscrotal angle with the dorsal flap in the midline, (6) dartos fascia dissected from the dorsal skin and used as 2nd layer over the urethroplasty.

RESULTS
The study 180 patients with all types of hypospadias Mean age at the time of surgery was 1.5 and mean operative time was 120 minutes. Routine follow up was achieved at 1,3 and 12 months.
The commonest post op complication encountered was oedema which resolved within 2 weeks in most, partially buried penis occurred in 5 patients post, 2 cases developed partial skin necrosis which resolved by local cream application, this technique avoid most complication occurred in previous skin closure which was skin necrosis. We report good cosmetic results, preservation of penile length and penoscrotal angle with our technique.

CONCLUSIONS
This modified new and simple technique of skin closure is very easy to adapt and perform with the least complication rate and good cosmetic results in hypospadias surgery.

11:21 – 11:24

S7-7 (PP)

CRIPPLED HYPOSPADIAS: ARE THE RESULTS OF STAGED REPAIR SATISFACTORY?

Haytham BADAWY[1], Ashraf SAAD[2], Mohammed YOUSSEF[3], Ahmed FAHMY[3], Akram ASSEM[3], Walid DAWOOD[3], Samir ORABI[3] and Ahmed HANNO[3]

1) University of Alexandria, Ped-urology, Alexandria, EGYPT - 2) Alexandria univ, Urology, Alexandria, EGYPT - 3) University of Alexandria, Urology, Alexandria, EGYPT

PURPOSE
Redo and crippled hypospadias where lack of vascularized flaps, ischemic and devitalized tissues constitute a major challenge in front of a salvage repair. Staged repair represents an excellent choice where such ischemic tissues are removed and replaced by a healthy graft to be used for urethral reconstruction on different stages. Herein, we opt to evaluate the outcome of a single surgeon use of staged repair using both buccal and inner preputial grafts in crippled cases of hypospadias.

MATERIAL AND METHODS
31 children collected from a prospectively designed database, operated a by a single surgeon with a median age of 96 months (18–216). Meatus is posterior in 20, distal shaft in 11. Buccal graft was used in 28 and preputial graft in 3 children during the first stage. Second stage was performed in 24, while 7 children did not yet have second stage performed. Tunica vaginalis flap was used in all children as a second layer cover over the constructed urethra. Urethral drainage is maintained for a period ranging from 7–10 days.

RESULTS
First stage was repeated in three children, overall success rate was 62.5 % for the completed second stage, and complications were glanular dehiscence in 6 children (5 with posterior and 1 with distal shaft meatus), complete dehiscence in 1, and urethrocutaneous fistula in 3 children.

CONCLUSIONS
Staged repair using buccal or inner preputial grafts in crippled hypospadias carries a good success rate. The most common complication is glanular dehiscence especially in proximal cases.

11:24 – 11:27

S7-8 (PP)

PROXIMAL HYPOSPADIAS REPAIR: A COMPARISON BETWEEN BILATERAL EXTERNAL SKIN TUBE (BEST) AND TUBULARISED INCISED PLATE (TIP) TECHNIQUES

Phitsanu MAHAWONG[1], Jaraspong VUTHIWONG[1], Wilaiwan CHONGRUKSUT[2] and Bannakij LOJANAPIWAT[1]

1) Chiang Mai University, Division of Urology, Department of Surgery, Faculty of Medicine, Chiang Mai, THAILAND - 2) Chiang Mai University, Research Unit, Department of Surgery, Faculty of Medicine, Chiang Mai, THAILAND

PURPOSE
The study objective is to compare bilateral external skin tube (BEST) and tubularised incised plate (TIP) repairs for treatment of proximal hypospadias.

MATERIAL AND METHODS
Between January 2009 and September 2017 92 boys underwent proximal hypospadias (perineum to proximal penile shaft meatus) repair. BEST repairs were performed in 54 patients and TIP repairs were performed in 38 patients. The principle of BEST repair is to use parameatal-based flaps with external foreskin extension for tubularised neourethroplasty. All the operations were done by one surgeon. Patient data was retrospectively reviewed.

RESULTS
The mean ages were 4.2 and 4.4 years old for BEST and TIP repairs, respectively (p=0.820). The mean operative times were 141.3 and 146.2 minutes in BEST and TIP repairs, respectively (p=0.450). The mean catheter time was 8.8 days in the BEST group and in the TIP group was 9.9 days (p=0.004). The mean postoperative hospital stay was 9.3 days in the BEST group and 10.1 days in the TIP group (p=0.062). The mean follow-up times were 12.1 months and 26.2 months for the two groups respectively (p<0.001). Fistulas occurred in 13/54 (24.0 %) and 8/38 (21.1 %) of cases in the BEST and TIP repair groups, respectively (p=0.805). Wound bleeding, glans dehiscence, recurrence of ventral curvature, and meatal stenosis rates were not statistically different between the two groups.

CONCLUSIONS
BEST and TIP repairs are equally effective for treating proximal hypospadias. However a BEST repair requires a shorter catheter time than TIP repair.

11:27 – 11:32

S7-9 (VP)

REVERSE PEDICLE FLAP AS A BARRIER LAYER FOR CIRCUMCISED PATIENTS WITH MEGAMEATUS HYPOSPADIAS

Mark ZAONTZ and Christopher LONG

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

PURPOSE

Intact prepuce megameatus hypospdias is seen in approximately 5 % of all hypospadias cases. Unfortunately, many of these children are inadvertantly circumcised at birth creating a dilemma for obtaining good barrier layer coverage at the time of the surgical repair. Hill and Waxman et al in 1993 described a novel way to provide this coverage in the form of a reverse pedicle flap that is presented in this video.

MATERIAL AND METHODS

Over the past 12 months, 6 circumcised boys ages ranged from 6 months – 8 years, mean 320 months) underwent hypospadias repair. The surgical technique involved the Thiersch Duplay repair and incorporated a reverse pedicle barrier flap. This was accomplished by making a U-shaped marking line proximal to the hypospadias meatus that was equidistant from the proximal point of the incision, such that when the flap was procured and the skin de-epithelialized, it could easily reach the distal glans for complete coverage over the neourethra.

RESULTS

All 6 boys had excellent results with no complications in the short term follow-up ranging from 1 month to 7 months (mean 3.7 months).

CONCLUSIONS

This "older" technique should be a part of every reconstructive pediatric urologists armamentarium in circumstances when there is no available prepuce for barrier layer coverage over the neourethral reconstruction. While the midline suture line tends to be longer in these instances, the cosmesis has been excellent and is a worthwhile tradeoff for an excellent outcome. Longer term follow-up will be needed to validate that these findings stand the test of time.

11:32 – 11:45

Discussion

S8: ADOLESCENT UROLOGY 1

Moderators: Radim Kocvara (Czech Republic), Hezi Landau (Israel)

ESPU Meeting on Thursday 12, April 2018, 11:45–12:15

11:45–11:48

S8-1 (PP)

★ LONG-TERM FOLLOW-UP OF ADOLESCENTS OPERATED FOR PROXIMAL HYPOSPADIAS; ARE PSYCHOSOCIAL AND SEXUAL OUTCOMES AFFECTED?

Marie ANDERSSON[1], Lisa ÖRTQVIST[2], Agneta NORDENSKJÖLD[2], Sofia SJÖSTRÖM[1] and Gundela HOLMDAHL[1]

1) The Sahlgrenska Academy, Department of Pediatric Urology, Queen Silvia's Children's Hospital, Sahlgrenska University Hospital, Gothenburg, SWEDEN - 2) Karolinska Institutet, Department of Pediatric Surgery, Astrid Lindgren Children's Hospital, Karolinska University Hospital, Stockholm, SWEDEN

PURPOSE

Long-term studies of psychosocial and sexual outcomes after hypospadias surgery are few with diverging results, often not considering grade of hypospadias. We hypothesized that psychosocial outcomes and sexual aspects of hrQoL in adolescents with proximal hypospadias are negatively affected and tested this in a prospective matched control study.

MATERIAL AND METHODS

57 young men ≥ 14 years operated between 1996–2005 for penoscrotal to perineal hypospadias at a single center were identified. 33 patients, Md age 17.5 years (14–25) accepted clinical assessment and answered a web-based questionnaire, designed to reflect social factors, general wellbeing, body esteem, penile perception and sexual well-being including the validated tests PGWB (Psychological General Well Being), BESAA (Body Esteem of Adults and Adolescents) and PPPS (Pediatric Penile Perception Score). 25 age-matched healthy men, Md age 17.5 years (14–25) and 31 patients treated for distal hypospadias, Md age 19 years (14–35) served as controls.

RESULTS

No differences in educational levels were found, but extra support in school was more frequent among boys with proximal hypospadias (p=0.024 vs distal, p=0.068 vs control).

There were no differences regarding PGWB, BESAA or PPPS. Proximal hypospadias patients were more unsatisfied with penile length (39 %) compared to controls (12 %) (p=0.049).

No difference in satisfaction regarding meatal position, shape of glans, penile skin or glanular sensibility (controls uncircumcised) was found. Interest in sex, age at sexarche and satisfaction with sexual experiences were comparable although among proximal hypospadias 3/30 (10 %) reported occasional erectile problems and 11/28 (39 %) uncertainty regarding ejaculation (p=0.032 and p=0.0054 vs distal, ns vs control).

CONCLUSIONS

Adolescents with proximal hypospadias showed no differences in psychosocial and sexual outcome in most regards. Despite concerns regarding penile length, sexual experiences were comparable to other adolescents.

11:48 – 11:51

S8-2 (PP)

★ FERTILITY IN HYPOSPADIAS: A NATIONWIDE REGISTER-BASED COHORT STUDY WITH SIBLING ANALYSIS

Anna SKARIN NORDENVALL[1], Christina NORRBY[2], Qi CHEN[2], Louise FRISÉN[3], Anna NORDENSTRÖM[1], Catarina ALMQVIST[2] and Agneta NORDENSKJÖLD[1]

1) Karolinska Institutet, Department of women's and children's health, Stockholm, SWEDEN - 2) Karolinska Institutet, Department of Medical Epidemiology and Biostatistics, Stockholm, SWEDEN - 3) Karolinska Institutet, Department of Clinical Neuroscience, Stockholm, SWEDEN

PURPOSE

Fertility in men with hypospadias may be impaired due to anatomical, surgical or etiological factors and associated conditions. Fertility is further influenced by sociocultural and genetic factors, often shared within families. Only a few previous studies have investigated birthrates in men with hypospadias. The aim of this study was to evaluate fertility in men born with hypospadias by register-based data.

MATERIAL AND METHODS

Population-based cohort of 1.2 million men born in Sweden between 1964 and 1998, identified through national demographic and healthcare registers. Each individual was followed from 15 years of age to first outcome event, emigration, death, or 31 December 2013. Associations between being born with hypospadias and 1) being the biological father of children, 2) conceiving through assisted reproductive technologies and 3) receiving a diagnosis of male infertility, were investigated in the whole cohort with Cox proportional hazard models, expressed as hazard ratios (HRs) with 95 % confidence intervals (CIs). A stratified proportional hazard model, conditional on sibling group, was used to estimate the effects of shared familial confounding. Additional sensitivity analyses on the effect of associated malformations, cryptorchidism and psychiatric illness were conducted.

RESULTS

Men with hypospadias, as an aggregate, had a lower probability of having biological children (adjusted HR 0.87, 95 % CI 0.83 to 0.92). A significant association was present in both distal (adjusted HR 0.90, 95 % CI 0.85 to 0.96) and proximal hypospadias (HR 0.59, 95 % CI 0.42 to 0.81). Point estimates remained similar, however non-significant, in sibling comparison. Further, men with either distal or proximal hypospadias demonstrated an increased probability of conceiving through ART, regardless of concomitant cryptorchidism. Men with proximal hypospadias were at increased risk of having a registered diagnosis of male infertility.

CONCLUSIONS

The results of this study suggest that fertility in men with both distal and proximal hypospadias is impaired, and the analysis in brothers implies that this is not due to shared familial factors.

11:51 – 11:57

Discussion

11:57 – 12:00

S8-3 (PP)

PSYCHIATRIC OUTCOME IN MEN WITH HYPOSPADIAS

Lisa ÖRTQVIST[1], Hedvig ENGBERG[2], Anna STRANDQVIST[2], Anna NORDENSTRÖM[2], Gundela HOLMDAHL[3], Agneta NORDENSKJÖLJD[4] and Louise FRISÉN[5]

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PURPOSE

Population studies have shown an increased risk for neurodevelopmental disorders in males born with hypospadias. We aimed to investigate psychiatric morbidity in men with hypospadias in a retrospective clinical cohort study.

MATERIAL AND METHODS

One hundred and sixty-seven men born with hypospadias, with a mean age of 34 years, completed self-rating scales screening for depressive, anxiety, and obsessive-compulsive symptoms (CPRS-S-A), as well as symptoms of ADHD (ASRS-short). Thirty-three of these men also underwent an interview screening for psychiatric morbidity (MINI). Their results were compared with those of age-matched population-derived controls.

Numerical outcome variables were analyzed with the Mann Whitney-U test and one-way ANOVA. Chi-square or Fisher's exact test was used for qualitative data. $P<0.05$ was considered significant.

RESULTS

There were no significant differences regarding symptoms of ADHD, neither affective symptoms between patients and controls. Seven patients (21 %) and 10 controls (21 %) reported current or previous psychiatric symptoms (p=NS). The distribution did not differ significantly between the different severity groups of hypospadias.

CONCLUSIONS

These results do not support an increase in psychiatric morbidity in men with hypospadias. In order to assure that small differences are found, a larger study population would be necessary.

12:00 – 12:03

S8-4 (PP)

ADULT NON-URETHRAL COMPLICATIONS AFTER HYPOSPADIAS REPAIR IN CHILDHOOD

Vladimir KOJOVIC[1], Marta BIZIC[2], Borko STOJANOVIC[2], Marko BENCIC[2], Vojkan VUKADINOVIC[3], Zoran KRSTIC[3], Gradimir KORAC[4] and Miroslav DJORDJEVIC[3]

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PURPOSE

Urethral complications after hypospadias repair are the most common, but there is another group of postoperative complications defined as "non-urethral" complications that carry a risk of multistage surgeries. Aims of this study are to present treatment of these complications and to highlight their impact on patients' life.

MATERIAL AND METHODS

Between March 2003 and May 2017, 95 patients, aged 6.5 to 40 years (mean 19) underwent surgical repair for non-urethral complications after hypospadias repair in childhood: glans deformity (36), residual curvature (46) and trapped penis (32). Some patients had two or more complications at the time of corrective surgery. Mean period after first hypospadias repair was 13.6 years. Glans repair was performed in 29 patients by creation of conically shaped glans with wide glans wings creation, while in 7 cases "double-faced" skin flap was used to enlarge small and deformed glans. Residual curvature was repaired by tunica plication in all cases, while in 25 cases additional urethral reconstruction was needed. Trapped penis was repaired using vascularized genital skin flaps or free skin grafts as one or two stage repair.

RESULTS

Mean follow-up was 64 months (ranged 5 – 174 months). One-stage surgery repair was successful in 78 patients, while 17 patients required additional surgery. Twelve patients underwent two-stage penile skin reconstruction due to lack of genital skin and five patients underwent repeated correction of the penile curvature due to its late onset.

CONCLUSIONS

Non-urethral complications after hypospadias repair carry a risk of repeated surgeries and may lead to severe sexual and psychological dysfunction. Active surgical treatment should enable full sexual functionality. Long-term follow-up of these patients should be extended until beginning of their sexual activity and even in their early adulthood.

12:03–12:06

S8-5 (PP)

LONG-TERM FOLLOW-UP OF ADOLESCENTS OPERATED FOR PROXIMAL HYPOSPADIAS; DO UROLOGICAL RESULTS DIFFER COMPARING 3 SURGICAL TECHNIQUES?

Marie ANDERSSON[1], Monika DOROSZKIEWICZ[2], Sofia SJÖSTRÖM[1] and Gundela HOLMDAHL[1]

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PURPOSE

Surgery for proximal hypospadias is challenging and entails risk of complications. The primary aim of this prospective cohort study was to reinvestigate adolescents operated for proximal hypospadias in childhood with three different techniques, Tubularized Incised Plate (TIP), vascularized graft as Onlay or tubularized (Duckett), comparing urological outcome and complication rates.

MATERIAL AND METHODS

57 adolescents ≥ 14 years of age operated for proximal hypospadias (penoscrotal to perineal) between 1996–2005 and followed at a single center were identified. 40 accepted participation with a clinical assessment, at Md 16.5 years (14–25), including voiding history, genital examination and uroflowmetry. Results were matched with data from charts regarding operations and previous urinary flow.

RESULTS

30 penoscrotal and 10 scrotal/perineal hypospadias were operated with TIP (N=14), Onlay (N=14), Duckett (N=11) and chordee-correction only (N=1). Curvature correction was performed with plication (N=12) and rotation of corpora (N=4).

Nineteen patients (48 %) had one surgical event, but 29 % (4/14) of TIP, 50 % (7/14) of Onlay and 82 % (9/11) of Duckett required reinterventions (p=0.0062). TIP patients had longer penile length (Md 9.4 cm; 7.5–11.0) than Onlay (8.0 cm; 4.0–11.0) and Duckett (8.0 cm;5.0–10.0) (p=0.016, p=0.045) but more curvature at puberty than Duckett (p=0.0062). There was no difference in glanular sensibility comparing different methods of urethroplasty, nor comparing number of reoperations neither different curvature correction procedures. Maxflow at puberty was Md 12.4 ml/s (2.5–47.3). Impaired flows (≤10 ml/s) were found in 3/14 of TIP, 1/14 of Onlay and 1/11 of Duckett (ns). There was significant improvement in all groups compared to maxflows at five years of age.

CONCLUSIONS

This study showed that Duckett required significantly more reoperations than TIP but TIP, with preservation of the urethral plate, had more curvature at puberty. Uroflowmetry results were acceptable and comparable between groups.

12:06–12:15

Discussion

S9: GENITALIA 1

Moderators: Katja P. Wolffenbuttel (Netherlands), Marco Castagnetti (Italy)

ESPU Meeting on Thursday 12, April 2018, 14:00–14:38

14:00–14:05

S9-1 (LO)

★ SCROTAL VERSUS INGUINAL ORCHIDOPEXY IMPACT ON POSTOPERATIVE PAIN AND COMPLICATIONS: A RANDOMIZED CONTROLLED TRIAL

Luis H BRAGA[1], Melissa MCGRATH[2], Bethany EASTERBROOK[2], Kizanee JEGATHEESWARAN[2], Natasha BROWNRIGG[3], Jorge DEMARIA[4] and Armando J LORENZO[5]

1) McMaster University - McMaster Children's Hospital, Department of Surgery / Urology, Hamilton, CANADA - 2) McMaster University, McMaster Pediatric Surgery Research Collaborative, Hamilton, CANADA - 3) McMaster University - McMaster Children's Hospital, Paediatrics, Hamilton, CANADA - 4) McMaster University - McMaster Children's Hospital, Surgery, Hamilton, CANADA - 5) University of Toronto, Surgery, Toronto, CANADA

PURPOSE

To compare scrotal (SO) vs. inguinal orchidopexy (IO) impact on analgesic use, postoperative pain scores and complication rates.

MATERIAL AND METHODS

A superiorityRCT including boys 10–95 months of age at surgery, diagnosed with palpable UDT was conducted. Patients with non-palpable or bilateral testes, previous orchidopexies and concurrent procedures were excluded. Block randomization with 1:1 allocation ratio to IO or SO was utilized, as was a standardized anesthesia protocol with peri/post-operative analgesia. Primary outcome: postoperative pain and analgesic use in hospital(FLACC/CHEOPS) and at home(PPPM/TPPS) using validated pain scales. A 2-point difference in the pain scale was considered as minimally important difference. Secondary outcomes: operative time (OpT), conversion and success rates, and complications assessed at 6–8-week F/U.

RESULTS

Of 1093 screened patients, 154(14 %) were eligible and 112(72 %) recruited. Of the 99 boys who completed F/U, 50 had IO and 49 SO. Baseline demographics are presented in table 1.

Characteristics	Inguinal n=50(%)	Scrotal n=49(%)
Median age at surgery (IQR)	22(IQR:13-64)	26(IQR:14-64)
Mean weight (kilograms±SD)	15±6.5	16±6.1
Location of testis Canalicular Above external inguinal ring Below external inguinal ring Pre-scrotal	17(34) 23(46) 10(20) 0(0)	15(31) 18(37) 14(28) 2(4)

No significant differences in number of analgesic doses given in hospital and in mean pain scores over the 48-hour time period were observed. Mean analgesic use at home was higher for SO($p<0.01$). Mean OpT was not significantly different with ITT approach. Per treatment(including conversions) analysis showed that IO was 7 min faster(40±11vs.33±15; $p<0.01$). Conversions occurred in 16/99(16 %) testes(75 %-canalicular). Overall complication rate=3 %(1-reascent/1-incision dehiscence-SO; 1-wound infection-IO).

CONCLUSIONS

We found no difference in post-operative pain, analgesic consumption, OpT(ITT) and complications between IO and SO. SO may not be a suitable approach for all patients with canalicular testes. Its indications may need to be tailored to testis position for optimal results.

14:05–14:08

S9-2 (PP)

★ CONTRALATERAL TESTICULAR VOLUME IN CASES OF UNILATERAL NONPALPABLE CRYPTORCHIDISM — A DIAGNOSTIC CRITERION FOR OPTIMIZATION OF SURGICAL TACTICS

Vladimir ORLOV[1], Vladimir SIZONOV[2], Mikhail KOGAN[1] and Ilia KAGANTSOV[3]

1) The Rostov State Medical University, Urology, Rostov On Don, RUSSIAN FEDERATION - 2) Regional Children's Hospital, Paediatric Urology, Rostov On Don, RUSSIAN FEDERATION - 3) Syktyvkar State University named after Pitirim Sorokin, Paediatric Urology, Syktyvkar, RUSSIAN FEDERATION

PURPOSE

The effort to decrease the frequency of unjustified laparoscopic interventions in cases of unilateral non-palpable cryptorchidism determines the interest towards revealing the diagnostic criteria for optimization of tactical surgery planning. Contralateral testicular volume can be employed as such criterion.

MATERIAL AND METHODS

Contralateral testicular volume was prospectively studied in 76 patients (up to 9 years old) with unilateral nonpalpable forms of cryptorchidism. In all patients, the length, width, and height of the contralateral testis were measured. Testicular volume=length*width*height*0.71. Depending upon the undescended testicle condition, the patients were subdivided into two groups: those with viable and nonviable testes. A comparison of basic data in the groups was carried out using the Mann-Whitney test. To build the diagnostic model, logical regression was used. We analyzed the significance of regression coefficients evaluating for the regressor the odds ratio (OR) and the 95 % confidence interval. A Receiver Operating Characteristic (ROC) curve was built then for the model and a threshold level was selected to match the optimal ratio between sensitivity and specificity.

RESULTS

Among the 78 patients, viable testes (intraabdominal or inguinal) were found in 41 (52.6 %), and in 37 (47.4 %) nonviable or missing testes were found. Whenever the contralateral testicular volume exceeded 2.25 ml, a nonviable testicle was identified (sensitivity – 100.0 %, specificity – 73.0 %); when the volume was less than 1.04 ml, viable undescended testes were found in all patients (specificity – 100 %, sensitivity – 34 %). During quality assessment, the area under the ROC curve reached 92.6 % indicating high predictive power of the model.

CONCLUSIONS
Revision scrototomy is indicated in all cases, when the testicular volume exceeds 2.25 ml, diagnostic laparoscopy is an optimal starting procedure for patients with the contralateral testicular volume under 1.04 ml.

14:08 – 14:11

S9-3 (PP)

TUBULAR FERTILITY INDEX (TFI) IN CORRELATION WITH TESTIS POSITION, CONSISTENCY, EPIDIDYMAL ANATOMY AND AGE AT ORCHIDOPEXY IN 237 BOYS WITH CRYPTORCHIDISM

Katja P. WOLFFENBUTTEL[1], Ries KRANSE[2], Hans J.A. STOOP[3], Fred VAN DER TOORN[1], J.W. OOSTERHUIS[3], Katharina BIERMANN[3], Jeroen R. SCHEEPE[1], Joop VAN DEN HOEK[1] and Leendert H.J. LOOIJENGA[3]

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PURPOSE
Epididymal anomalies in cryptorchidism are common, especially in proximal positioned testes. Aims of the study were to: 1. classify epididymal anatomy according to a modified scoring system in 8 categories; 2. investigate the percentage of germ cell containing seminiferous tubules, Tubular Fertility Index (TFI), in a testicular biopsy taken during orchidopexy; 3. compare TFI with recorded clinical information on testis position, consistency, epididymal anatomy and age at orchidopexy.

MATERIAL AND METHODS
Between 2001 and 2017 testicular histology from 237 patients (263 testes) with cryptorchidism was available for review; 60 patients (68 testes) with missing data on clinical variables but with documented TFI and age at surgery were initially excluded. The remaining 177 patients (195 testes), aged between 5 and 244 months (mean 39 months) were investigated. For statistical analysis fractional logistic regression analysis was used.

RESULTS
Testis position was abdominal in 20 (11 %), internal ring in 54 (27 %), canalicular in 84 (43 %) and external ring in 37 (19 %). Testis consistency was normal in 58 (30 %), soft in 59 (30 %) and intermediate in 78 (40 %). Normal epididymal anatomy (category 1 and 2) was seen in only 68 (35 %) testes. The TFI was >60 % in 50 testes (26 %); 30 – 60 % in 55 (28 %); < 30 % in 65 (33 %) and 0 (SCO) in 25 (13 %). Fractional logistic regression analysis showed that age at orchidopexy was the only clinical parameter that significantly predicted the TFI (p 0.00). The obtained model for TFI was validated in the initially excluded 68 testes because of incomplete data, but documented TFI and age at surgery.

CONCLUSIONS
Exclusively age at orchidopexy correlated significantly with TFI. TFI decrease with age at surgery suggests that current guidelines for timing of orchidopexy in boys with undescended testes (between 6 and 18 months) should be tightened to the age of 6 months or soon afterwards.

14:11 – 14:20

Discussion

14:20 – 14:23

S9-4 (PP)

LATE ASCENDED TESTES: IS ECTOPIC GUBERNACULAR INSERTION A CRITERION FOR AN EMBRYOLOGIC PATHOGENETIC BACKGROUND?

Bernhard HAID[1], Anne-Françoise SPINOIT[2], Anna RADFORD[3], Patrick REIN[1], Josef OSWALD[1] and Mesrur-Selcuk SILAY[4]

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PURPOSE

Ascension of testes from a scrotal position is described with an incidence of up to 45 % in those, who are operated after the age of 4 with a high potential for damage to their germ cells if treatment is deferred. Speculations with regard to etiology of late ascension of testes include the fixation of the testis by a non-occluded processus vaginalis peritonei and growth of the child. We aimed at investigating a pathologic gubernacular insertion in boys with late ascended testis as a possible causative factor pointing at a primary, embryologic etiology of ascended testes.

MATERIAL AND METHODS

A multicenter prospective study was carried out between 05/2016 and 09/2017 in children with well-documented ascended testes in 4 pediatric urology centers. Children with previous inguinal surgery and those with retractile testes were excluded. All patients were evaluated regarding their gubernacular insertion during orchidopexy. The presence of a patent processus vaginalis and dissociation between the epididymis and testis were documented.

RESULTS

77 patients were included prospectively. Mean age at surgery was 73.1 months. The previous scrotal position of the testis was documented in 49.4 % by a pediatric urologist and in 50.4 % by a pediatrician.

In 3.9 % we found an orthotopic, deep scrotal gubernacular insertion, whereas it was non-orthotopic in 96,1 % (34.2 % groin, 63.2 % high scrotal). 35.1 % had an open processus vaginalis peritonei, 15.6 % had a small, dysplastic appearing testis with testis-epididymis dissociation.

CONCLUSIONS

Our results point at a causative role of an ectopic gubernacular insertion and therefore an embryologic pathogenetic background in patients with well-documented ascending testes.

14:23 – 14:26

S9-5 (PP)

LONG-TERM EFFECTS OF TESTICULAR TORSION ON PATERNITY AND QUALITY OF SEX-LIFE

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Helsinki University Hospital, Paediatric Surgery, Helsinki, FINLAND

PURPOSE

To evaluate the long-term effects of pediatric testicular torsion on male fertility and sexual function.

MATERIAL AND METHODS
Questionnaires concerning male fertility and erectile function (IIEF-5 questionnaire) were mailed three times to 74 men, who had been treated for spermatic cord torsion (SCT) as well as to 92 controls treated for torsion of testicular appendage (TAT) in 1977–1995 and who were currently older than 30 years.

RESULTS
35/74 (47 %) of SCT patients and 58/92 (63 %) of the TAT patients responded. The median age at investigation was 41 (IQR 36–46) within the SCT group and 41 (IQR 38–46) years in the control group, p=0,814. The paternity rate was 23/35 (66 %) in the SCT group and 26/34 (76 %) in the controls, p=0.43. Within 30–50 year old SCT patients, 9/16 (56 %) had children after orchiectomy and 13/16 (81 %) after detorsion (p=0.252).
IIF-5 total score was lower in SCT patients than in the controls; median 24 (IQR 22–25) vs 25 (IQR 24–25), p=0.020. Especially significant the difference was in confidence to get and keep an erection (Q 1), p=0.005. However, significant or moderate erectile dysfunction (score <12) was rare in both groups (3/32 (9 %) in the patients and 1/35 (3 %) in the controls, p=0.342.

CONCLUSIONS
Paternity rate was similar on SCT patients and the controls. Neither the type of surgery (orchiectomy vs. detorsion) affected paternity rates. Erectile function scores were somewhat better in the controls. However, moderate and significant erectile dysfunction was rare in both groups.

14:26–14:29

S9-6 (PP)

SURGICAL OUTCOME IN NEWLY TRAINED GENERAL PRACTITIONER FOR MALE INFANT CIRCUMCISION BY PLASTIBELL DEVICE IN A COMMUNITY CLINIC

Abdul Rauf KHAN[1], Mohammed Ruhul AMIN[2], Darrel GREGORY[2], Shabir MERALI[2] and Murtaza KHANBHAI[2]

1) Thornhill Circumcision Centre, Paediatric Surgery, Luton, UNITED KINGDOM - 2) Thornhill Circumcision Centre, GP surgery, Luton, UNITED KINGDOM

PURPOSE
Male infant circumcision (MIC) is performed across the country by many General Practitioners (GP). There is no national MIC training centre for newly qualified GPs. Our aim is to review the surgical outcome in a newly trained GP at our centre as compared to experienced GPs for MIC by Plastibell device to validate our training program.

MATERIAL AND METHODS
We reviewed the surgical outcome of MIC conducted by experienced GPs (eGP) and newly trained GP (nGP) over a 1 year period (May 2016 to April 2017). A GP was trained in our centre (MIC was observed n=10, assisted n=20 and performed under supervision n=15) by modified WHO MIC training course for 9 weeks before study began. The nGP received mentoring during the study but otherwise performed MIC independently. Data was collected prospectively and early postoperative complications were compared between nGP and two eGPs who have performed more than 2000 MICs. Follow-up was arranged if required.

RESULTS
Total 566 MICs (eGP n=468, nGP n=98) were performed during this period. Mean age was 58 ± 2.7 days (median 32) which was comparable in both cohorts. Overall early postoperative complications reported 3.1 %(n=17/556). Infection 1.6 %(n=9), post-operative bleeding 0.7 %(n= 4), ring impaction 0.4 %(n= 2) and preputial adhesions 0.4 %(n=2). There is no significant difference in early complication rate (p>0.5) between GPs (nGP 3 %,3/98, eGP 3.0 %,14/468). Mean follow-up was 17 days±4.5 (median 6), there is no significant difference between nGP and eGP follow-up(p>0.5).

CONCLUSIONS
This study demonstrates that there is no difference in incidence of early complications in MIC after a structured training program. A newly-trained GP can safely perform male infant circumcision in a community clinic under local anaesthesia using Plastibell device. These results also validate the male infant circumcision training program at our centre.

14:29 – 14:38
Discussion

S10: ADOLESCENT UROLOGY 2

Moderators: Rosalia Misseri (USA), Dan Wood (UK)

ESPU Meeting on Thursday 12, April 2018, 14:38–15:15

14:38–14:43

S10-1 (LO)

ADOLESCENTS WITH POSTERIOR URETHRAL VALVE: KIDNEY AND BLADDER FUNCTION AT TRANSITION TO ADULT CARE

Michal MATERNIK[1], Ilona CHUDZIK[1], Andrzej GOLEBIEWSKI[2] and Aleksandra ZUROWSKA[1]

1) Medical University of Gdansk, Pediatric Nephrology and Hypertension, Gdansk, POLAND - 2) Medical University of Gdansk, Pediatric Surgery and Urology for Children and Adolescents, Gdansk, POLAND

PURPOSE

The short-term prognosis for boys with posterior urethral valves (PUV) has improved in recent decades, but the long-term outcome for kidney and bladder function are not well defined. Our purpose was to report the incidence of bladder and kidney dysfunctiion in PUV adolescent patients at the time of transition to adult care.

MATERIAL AND METHODS

The data of 41 boys with PUV were analyzed at time of transition to adult care. The median follow-up after valve ablation was 16 years (15–18 yrs). Outcome measures were defined as kidney and urinary tract damage or loss of function. Kidney damage was assessed by ultrasound (lack of corticomedullary differentiation) and kidney function by eGFR with KDOQI categorization of Chronic Kidney Disease (CKD). Urinary tract damage was assessed by ultrasound (presence of hydronephrosis) and bladder function by bladder diary (diurnal and/or nocturnal incontinence) and uroflow measurements (bladder capacity (BC) and post void residual (PVR)).

RESULTS

34 boys (83 %) of subjects developed CKD. The majority (49 %) had CKD1 with normal eGFR, the remaining 34 % had decreased eGFR (17 %-CKD2, 7 %-CKD3, 2 %-CKD4) with 2 boys requiring renal replacement therapy (5 %-CKD5). 29 % received antihypertensive treatment to control elevated blood pressure. Kidney ultrasound showed loss of corticomedullary differentiation in 60 % and persistent hydronephrosis in 51 % of the cohort. Incontinence was reported by 24 %. Uroflow revealed a bladder capacity above 150 % of EBC (expected bladder capacity for age) in 19 (46 %) and PVR greater than 10 % of bladder capacity in 13 (31 %).

CONCLUSIONS

CKD was present in 83 % boys with PUV and 46 % have bladder dysfunction at time of transition to adult care. Adolescent boys with PUV require close surveillance and active treatment when transferred to adult nephrology and urology care due to the high risk of developing both ESRD and bladder insufficiency.

14:43–14:46

S10-2 (PP)

MULTIVARIATE ANALYSIS OF FACTORS AFFECTING THE COMPLIANCE OF ADOLESCENCE PATIENTS FOR CLEAN INTERMITTENT CATHETERIZATION: A HARD TOPIC IN TRANSITIONAL UROLOGY FOCUSING ON QUALITY OF LIFE

Perviz HAJIYEV[1], Aykut AKINCI[2], Baris ESEN[2], Gunay EKBERLI[1], Adem SANCI[2], Tarkan SOYGUR[1] and Berk BURGU[1]

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PURPOSE

We aimed to identify the impact of several factors including quality of life in that can predict the CIC compatibility young patients.

MATERIAL AND METHODS

We conducted a cross-sectional data study to define the impact of multiple factors (age, gender, frequency of CIC, quality of life, presence of catheterizable channels and cystoplasty, starting age of CIC, self-sufficiency for CIC (hand function), renal and continence status and initial diagnosis, mobility and body mass index, referring specialist,) on CIC compliance in adolescents. Compatibility was investigated with a questionnaire to be filled in both by parents and the teenager. Besides the patient was asked to video-record his/her face before each CIC for a period of one week to reliably document the compliance. Each patient was asked to fill in a validated quality of life evaluation form. Incompatibility was defined as skipping more than 25 % of the prescribed CIC/per week and/ or a high score(>14)in the compliance questionnaire.

RESULTS

56 out 63 patients (12–21 years/mean age 14.5) under CIC who had reliable results were evaluated. The age at which CIC began 2.3–14.7 years (median 5.6) and follow up interval to the interview ranged from 6 months–14 years (median 5.7). Patients were evaluated in three age-related groups as 12–15/15–18/18–21. The CIC frequency ranged from 3 to 6 hours (median 4). Only 3 patients had overnight catheterization. While 12–15 age interval, male gender, late start on CIC, low quality of life score and absence of catheterizable channels were statistically significantly had a negative effect on compliance in univariate analysis, multivariate analysis revealed that 12–15 age interval and late-onset were the only statistically significant parameter affecting the compliance rate.

CONCLUSIONS

Children of specific age group especially transiting from childhood to teenager period are to less adherent, apart from every single entity, only the age that initial CIC started seems to be the most important for patient compliance.

14:46–14:49

S10-3 (PP)

★ TOTAL MOTILE COUNT (TMC) INCREASES WITH AGE IN ADOLESCENT VARICOCELE PATIENTS; SPERM CONCENTRATION IS AN AGE INDEPENDENT PARAMETER

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PURPOSE

Total motile count (TMC) has been reported recently to improve overtime with conservative and surgically managed varicocele patients 14.8–21.8 years. The aim of this study is to identify if TMC is correlated with age and can be reliably used to assess changing in fertility in adolescent varicocele patients.

MATERIAL AND METHODS

Data was prospectively collected from a single institution from 2009 to 2017. All post-pubertal varicocele patients aged 12 to 18 years who successfully produced semen samples by masturbation were included. Sperm parameters were recorded, TMC calculated and data presented as median (IQ range). The correlation with age was analysed using Kendall's rank correlation and 2-sided confidence intervals, $p<0.05$ was considered significant.

RESULTS

135 sperm samples were analysed from 109 adolescent patients (17 visible and 92 palpable left sided varicoceles). Median patient age was 15.9 years (15.0–17.1).

The following subgroups were identified:

Group A (72 samples) symmetrical testicular volumes managed conservatively

Group B (9 samples) asymmetrical testicular volumes awaiting surgery

Group C (29 samples) undergone surgery for asymmetrical testicular volumes

Group D (25 samples) undergone surgery for pain

Parameter	Median (Interquartile range)	Kendal's rank Correlation coefficient (r)	P value 2-sided confidence interval	P value sub-group analysis
Semen volume (mls)	1.9 (1.0-3.4)	0.24	<0.0001*	0.0002* (Group A)
Total motile count (mls)	27.5 (5.5-56.0)	0.24	<0.0001*	0.007* (Group A) 0.03* (Group A)
Concentration (millions/ml)	31.0 (10.2-56.0)	0.10	0.09	
Forward motility (%)	50 (35-50.5)	0.11	0.06	0.02* (Group C)

*p<0.05

The semen volume and total motile count was significantly correlated with age in the overall and sub group analysis.

CONCLUSIONS

TMC increases with age in the adolescent period and therefore cannot be reliably interpreted in adolescent varicocele patients. Sperm concentration and forward motility should be used instead.

14:49–14:58

Discussion

14:58–15:01

S10-4 (PP)

HOW TO DEFINE RECURRENCE AFTER ADOLESCENCE VARICOCELE REPAIR? WHAT IF THEY STILL HAVE RETROGRADE FLOW POSTOPERATIVELY?

Perviz HAJIYEV[1], Onur TELLI[2], Baris ESEN[3], Aykut AKINCI[3], Eriz OZDEN[4], Vahid SOLAK[3], Tarkan SOYGUR[1] and Berk BURGU[1]

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PURPOSE

There is no definition of adolescence varicocele recurrence after surgery. We aimed to evaluate the presence of retrograde flow and if present the Peak Retrograde Flow (RPF) after varicocelectomy in adolescents. We also investigated its relation with catch-up growth, Total motile sperm count, and potential paternity.

MATERIAL AND METHODS

The study involved 126 adolescent patients with a mean age of 13.9 years (range, 10.7 to 18 years) who underwent subinguinal varicocelectomy between 2006–20016. Indication for surgery was asymmetric testicular growth>20 %, PRF>35 cm/s and pain with grade 3 varicocele. Post-operatively, patients were evaluated both clinically and sonographically for recurrence and testicular volume. Catch-up growth was also compared in patients with significant pre-operative asymmetry at a mean of the postoperative period of 16.3 (9–36) months. Mean follow up was 4.7 years (1–8.2 years). At least one Semen analysis was performed in patients with Tanner V during the follow-up period. All patients above 18 were phoned to determine the paternity for the study.

RESULTS

96 of our patients (76 %) showed catch-up growth on follow up. 56 patients (44 %) showed PRF>20 cm/s on follow up. 35 of these patients had PRF 20–35 cm/s and 21 patients had a PRF>35 cm/s. Catch-up growth showed statistically no significant difference between high and low-pressure peak retrograde flow groups. TMC in patients with PFR >35 cm/s was significantly lower. Only 4 patients out of 56 patient with a retrograde flow above 20 cm7sn reported paternity and 1 was in the PFR >35 cm/sn group.

CONCLUSIONS

Despite the presence or absence of catch up growth, PRF above 35 cm/s should be taken as the definition of recurrence after varicocelectomy in adolescents. However, this still can not properly predict paternity.

15:01 – 15:04

S10-5 (PP)

SEMEN ANALYSIS OF ADOLESCENTS WITH VARICOCELE: WHAT IS IT TELLING US?

Marianna MASPERO[1], Arianna LESMA[1] and Francesco MONTORSI[2]

1) Ospedale San Raffaele, Pediatric Urology, Milano, ITALY - 2) Ospedale San Raffaele, Urology, Milano, ITALY

PURPOSE

In absence of semen analysis (SA), current recommendations for adolescent varicocele repair are limited to presence of testicular hypotrophy or symptomatic varicocele. Is there a risk of under-treatment?

PATIENTS AND METHODS

We retrospectively reviewed the SA of adolescents and young adults affected by grade III asymptomatic varicocele without testicular hypotrophy, not submitted to treatment. Exclusion criteria were other causes of male infertility, such as: history of cryptorchidism, testicular torsion, disorders of sexual differentiation, hormonal disturbances, etc. We analyzed the entire cohort, then divided it into patients younger than 18 years at SA and patients 18 and older, and compared the two groups using Chi-square test.

RESULTS

Between 2007 and 2017, 75 patients performed SA at our Institute. Mean age at diagnosis was 14,8 years (9 – 17 years). 61 (81 %) had left-sided varicocele, while 14 (19 %) had bilateral. Mean age at SA was 17,5 (15 – 23 years). 21 (28 %) had normozoospermia; 22 patients (30 %) had one altered value (14 teratozoospermia, 8 asthenozoospermia); 24 (32 %) had two altered values (1 oligoteratozoospermia, 23 asthenoteratozoospermia); 6 (8 %) had oligoasthenoteratozoospermia; and 2 (2 %) had azoospermia. No significant differences in SA results were found between patients younger than 18 years and patients 18 and older ($p > 0.05$).

CONCLUSIONS

Early alteration of semen analysis is possible even in absence of symptomatic varicocele or testicular hypotrophy.

15:04 – 15:07

S10-6 (PP)

VARICOCELE SURGERY CAN RESTORE NORMAL SPERM PARAMETERS IN ADOLESCENT PATIENTS WITH TESTICULAR ASYMMETRY

David KEENE and Raimondo CERVELLIONE

Royal Manchester Children's Hospital, Department of Paediatric Urology, Manchester, UNITED KINGDOM

PURPOSE

Adolescent patients with varicocele and testicular asymmetry (>20 %) have significantly impaired sperm concentration and forward motility (Keene 2012). Varicocele surgery can result in catch-up growth of the affected testis. The authors aimed to determine if varicocele surgery also results in improved sperm parameters in this group of adolescent patients.

MATERIAL AND METHODS

Paired data was prospectively collected from a single institution from 2009 to 2017. All patients aged 12 to 17 years post-pubertal with visible or palpable varicoceles and testicular asymmetry (>20 %) were eligible. Patients produced semen samples by masturbation before and 6 months following varicocele surgery. Outcomes were sperm concentration and forward motility. Data is expressed as mean (standard deviation). Paired t test was used to compare pre and post-surgery sperm parameters.

RESULTS

28 patients underwent surgery for testicular symmetry, 13 underwent laparoscopic selective vein ligation and 15 underwent antegrade sclerotherapy. 9 of these patients produced paired sperm data (before and 6 months after surgery) and were eligible for inclusion. 7 had visible varicoceles and 2 had palpable varicoceles. All had spontaneous venous reflux on Doppler examination pre-op and all were successfully treated.

	Pre-op	Post-op	P value
Age (years)	14.4 (1.3)	16.2 (1.6)	
Abstinence interval (days)	4.4 (1.8)	4.2 (2.2)	0.8
Concentration (millions/ml)	7.2 (10.1)	30.5 (31.3)	0.01*
Forward motility (%)	26.1 (22.7)	48.1 (21.5)	0.01*

*p<0.05

Pre-op all 9 patients had abnormal sperm parameters (either concentration <15 millions per ml or forward motility <32 %). Post-op 4 out of 9 patients had normal sperm parameters. The remaining 5 patients had improved concentration and forward motility post-op.

CONCLUSIONS

Varicocele surgery in adolescents with testicular asymmetry significantly improves sperm parameters and in 44 % restores them to normal.

15:07 – 15:15

Discussion

S11: HYPOSPADIAS 2

Moderators: Luis Braga (Canada), Mehmet Eliçevik (Turkey)

ESPU Meeting on Thursday 12, April 2018, 16:00–16:34

16:00–16:03

S11-1 (PP)

★ DOES THE ANOGENITAL DISTANCE PREDICT OUTCOME OF HYPOSPADIAS REPAIR?

Ursula TONNHOFER[1], Manuela HIESS[2], Martin METZELDER[1], Doris HEBENSTREIT[3], Christoph KRALL[4] and Alexander SPRINGER[5]

1) Medical University Vienna, Pediatric Surgery, Vienna, AUSTRIA - 2) Medical University Vienna, Department of Urology, Vienna, AUSTRIA - 3) Wilhelminenspital der Stadt Wien, Department of Urology, Vienna, AUSTRIA - 4) Medical University Vienna, Department of Statistics, Vienna, AUSTRIA - 5) Medical university Vienna, Paediatric Urology, Vienna, AUSTRIA

PURPOSE

The anogenital distance (AGD) is androgen action dependent. It is sexually dimorphic and seems to be shorter in androgen-action related diseases like hypospadias. In this study we sought to determine whether the anogential distance is predictive for surgical outcome of hypospadias repair.

MATERIAL AND METHODS

Patients were collected prospectively. AGD was measured in OR prior to surgery by 2 surgeons (blinded, each 3 times). Outcome parameters were defined as: 1.) complications (fistula, breakdown, glans dehiscence) and 2.) need for staged repair. There were 186 prepubertal boys: 119 controls 2.38 yrs (0.02–10.2) and 67 hypospadias (45 distal hypospadias 2.89 yrs (0.07–9.67) and 22 proximal hypospadias 2.66 yrs (0.58–9.76). Mean follow- up was 1.5 yrs.

RESULTS

There was no difference in AGD in controls and mild hypospadias. Severe hypospadias had a significantly shorter AGD (p=0.003). AGD was significantly shorter in patients undergoing staged repair (36 mm vs. 27 mm, p=0.001). AGD was significantly shorter in patients who developed postoperative complications (38 mm vs. 30 mm, p=0.04).

CONCLUSIONS

The AGD seems to have predictive value regarding outcome of hypospadias repair. Hypothetically, a short AGD resembles impaired intra uterine androgen action (low androgens, androgen receptor problems, counteracting endocrine disruptors, and unknown genetic androgen interaction). These fetal androgen problems may be reflected in hypospadias minor tissue quality resulting in delayed wound healing, inflammation and a higher complication rate or more difficult surgery resulting in staged repair.

16:03–16:08

S11-2 (LO)

★ HYPOSPADIAS OBJECTIVE PENILE EVALUATION (HOPE) SCORE AFTER DISTAL- AND MID-TYPE HYPOSPADIAS REPAIR IN THE DUTCH HYPOSPADIAS STUDY

Fred VAN DER TOORN[1], Barbara KORTMANN[2], Piet CALLEWAERT[3], Piet HOEBEKE[4], Eric VAN DER HORST[5], Martijn STEFFENS[6], Frank FROELING[7], Keetje DE MOOIJ[8], Rien NIJMAN[9], Mark WILDHAGEN[10], Sten WILLEMSEN[11] and Marleen VAN DEN HEIJKANT[12]

1) Sophia Children's Hospital, Paediatric Urology, Rotterdam, NETHERLANDS - 2) Radboud University Medical Center Nijmegen, Pediatric Urology, Nijmegen, NETHERLANDS - 3) Maastricht University Medical Center, Pediatric Urology, Maastricht, NETHERLANDS - 4) University Hospital Gent, Pediatric Urology, Gent, BELGIUM - 5) VU University Medical Center Amsterdam, Pediatric Urology, Amsterdam, NETHERLANDS - 6) Isala Hospital Zwolle, Pediatric Urology, Zwolle, NETHERLANDS - 7) Haga Hospital The Hague, Pediatric Urology, The Hague, NETHERLANDS - 8) Pediatric Renal Center, University Children's Hospital UMC, Pediatric Urology, Utrecht, NETHERLANDS - 9) University Medical Center Groningen, Pediatric Urology, Groningen, NETHERLANDS - 10) Erasmus Medical Center Rotterdam, Unit of Trials and Research Coördination, Rotterdam, NETHERLANDS - 11) Erasmus Medical Center Rotterdam, Biostatistics, Rotterdam, NETHERLANDS - 12) University Hospital Leuven, Pediatric Urology, Leuven, BELGIUM

PURPOSE

Creation of a normal anatomic appearance is an important goal in hypospadias surgery. Our Hypospadias Objective Penile Evaluation (HOPE)-score is a validated objective outcome measure which incorporates all surgically correctable items: meatal position, meatal shape, glans shape, skin shape and penile axis. Aim of current study is to determine appearance outcomes in the subgroup of (sub)coronal, distal- and mid-shaft hypospadias.

MATERIAL AND METHODS

In our national prospective multicenter study a professional panel independently assessed standardized anonymized pictures before and 6 months after surgery using the HOPE-score. This HOPE(item)-score ranges from 1 (minimum) to 10 (maximum). The HOPE-score improvement was calculated as the difference between the mean post- and pre-operative HOPE-score.

RESULTS

Sufficient photographic quality in this subgroup was available in 706 patients pre-operatively, 437 post-operatively and in 347 patients at both time points.

In the preputial excision (PE) and preputial reconstruction (PR)-group the total HOPE-score improvement was (PE/PR) TIP 2.72/2.68, MAGPI 1.62/1.82, Urethral Advancement (UA) 1.40/1.41, modified-Mathieu (MM) 1.51/1.18 and Duckett-Onlay (DO) 1.91/-. In both PE- and PR-groups the highest score improvement of 3.3 points was achieved by surgeons using TIP.

The HOPE-item score improvement for meatal position (PE/PR) was TIP 3.09/2.92, MAGPI 1.30/1.62, UA 1.83/1.51, MM 2.04/1.62, DO 3.25/-, meatal shape TIP 2.5/2.13, MAGPI 0.53/0.67, UA 0.67/-0.42, MM -0.07/-1.0, DO 1.13/-, glans shape TIP 3.17/2.75, MAGPI 1.76/1.14, UA 1.17/0.69, MM1.0/1.07, DO 2.0/- and shape skin TIP 4.41/5.71, MAGPI 4.26/5.82, UA 3.5/6.8, MM 5.5/6.4, DO 4.13/-.

CONCLUSIONS

In our study the HOPE-score identifies TIP as technique with the best appearance outcomes for especially meatal shape and glans shape. This HOPE-score can also indicate aspects of the operative procedure that need critical attention and can help to initiate a cycle for improvement in striving to create a normal anatomic appearance for our hypospadias patients.

16:08 – 16:11

S11-3 (PP)

GMS SCORE AND PENILE MEASUREMENTS AS PREOPERATIVE ASSESSMENT TOOLS FOR HYPOSPADIAS SURGERY OUTCOME

Ahmed ABBAS[1], Mohamed ABD EL WAHAB[2], Ahmed SHOUKRY[2], Wasim ABU EL ELA[2], Waleed GHONEIMA[2], Ahmed SHOUMAN[2], Mohamed EL GHONEIMY[2], Hani MORSI[2], Hesham BADAWI[2] and Mohamed EISAA[2]

1) Police Hospital, Urology Department, Giza, EGYPT - 2) Abu El Rish Children Hospital Cairo University, Urology Department, Cairo, EGYPT

PURPOSE

An objective measure for reconstructive surgeries is the ultimate dream for every surgeon. Our aim was to assess the correlation between GMS score (Glans-Urethral Meatus-Shaft score), penile measurements and risk of postoperative complications.

MATERIAL AND METHODS

Prospective study included children with a mean age of 3.28±2.61 years having coronal, distal or mid penile hypospadias. They underwent Tubularized incised plate (TIP) repair from 2015 to 2017 and were assessed preoperatively by measuring GMS score, penile length, glans width, penoscrotal length, urethral plate length and urethral plate length/penile length. Follow up for 3 months. Step wise logistic regression model was used.

RESULTS

Mean age, GMS score, glans width, penile length, penoscrotal length, urethral plate length and urethral plate length/penile length ratio were 2.9±2.1 years, 6.8±1, 1.2±0.1 cm 3[AS1] .8±0.8 cm, 7.4±1.1 cm, 1.1±0.3 cm, 30.32±9.11 respectively, in complicated patients.

There was a statistical significance difference between complicated and non-complicated patients regarding GMS score, glans width, penile length, penoscrotal length, and urethral plate length/ penile length ratio.

Complication rate for patients with GMS score ≤ 6, glans width ≥ 14 mm, penoscrotal length > 5 cm was 37.5 %, 12.5 %, 12.5 % respectively. Patients with a GMS score > 6, glans width < 14 mm and penoscrotal length ≤ than 5 cm was 62.5 %, 87.5 %, 87.5 % respectively.

Step wise logistic regression model demonstrated that an in increase in GMS score by one value, patients probability of having a complication is 3 fold.

CONCLUSIONS

GMS score > 6 is associated with a higher complication risk following TIP repair. Glans width ≥ 14 mm, penoscrotal length ≥ 5 cm have lower complication rate. Penile length and urethral plate / penile length ratio have a clinical utility and statistical significance in anticipating complication rate in distal penile hypospadias patients.

16:11 – 16:20

Discussion

16:20–16:25

S11-4 (LO)

★ A NEW OBJECTIVE SCORING SYSTEM FOR THE PREDICTION OF COMPLICATIONS AFTER HYPOSPADIAS SURGERY

Halil TUGTEPE[1], David Terence THOMAS[2], Zeynep CALIKLI[3], Arzu CANMEMIS[1], Raziye ERGUN[1], Nicat VALIYEV[4] and Tolga DAGLI[1]

1) Marmara University School of Medicine, Department of Pediatric Surgery, Division of Pediatric Urology, Istanbul, TURKEY - 2) Maltepe University Faculty of Medicine, Department of Pediatric Surgery, Istanbul, TURKEY - 3) Marmara University School of Medicine, Department of Pediatric Surgery, Surgical Nurse, Istanbul, TURKEY - 4) Marmara University School of Medicine, Department of Pediatric Surgery, Istanbul, TURKEY

PURPOSE

Despite several studies, there is no universally accepted scoring system that predicts the development of complications of hypospadias surgery, based on preoperative factors. The aim of this study is to develop a new objective scoring system to predict the development of complications after hypospadias surgery.

MATERIAL AND METHODS

The scoring system included glans diameter, groove, plate and meatal location plus the presence of chordee. For each factor, points of 1–3 (glans diameter, groove and plate) or 1–4 (meatal location or chordee) were scored (total between 5–17). Patients who underwent surgery for hypospadias between May 2011 and January 2017 with a minimum of 3-month follow-up were included. Prospectively collected data was analysed retrospectively. Patients undergoing two session repair were not included. Patients' scores were compared with complications using ROC curves. The appropriate cut-off value was calculated using the Youden method.

RESULTS

Five hundred and twenty-three patients (average age: 42.0±33.7 m, average follow-up: 39.6±23.4 m) were included. Complications were observed in 51 (9.8 %) patients. The cut-off value for optimal prediction of complications was determined as 10 with a negative predictive value of 93.9 %. The complication rate of patients who had 10 or fewer points was 7.4 % (n=32/430), the complication rate for those with 11 or more points was 20.4 % (n=19/93) (p=0.0001).

CONCLUSIONS

This new objective scoring system was found to successfully predict complications after hypospadias surgery. Patients with scores of 11 and above have statistically significantly more complications. We believe this new objective scoring system will be a guide surgeons who perform hypospadias surgery.

16:20–16:25

S11-5 (LO)

★ [PRESENTATION GROUPED WITH PREVIOUS] PREDICTION OF TIPU COMPLICATIONS USING AN OBJECTIVE SCORING SYSTEM

David Terence THOMAS[1], Zeynep CALIKLI[2], Arzu CANMEMIS[3], Raziye ERGUN[3], Nicat VALIYEV[4], Tolga DAGLI[4] and Halil TUGTEPE[3]

1) Maltepe University Faculty of Medicine, Department of Pediatric Surgery, Istanbul, TURKEY - 2) Marmara University School of Medicine, Department of Pediatric Surgery, Surgical Nurse, Istanbul, TURKEY - 3) Marmara University School of Medicine, Department of Pediatric Surgery, Division of Pediatric Urology, Istanbul, TURKEY - 4) Marmara University School of Medicine, Department of Pediatric Surgery, Istanbul, TURKEY

PURPOSE

Tubularized incised plate urethroplasty is the most commonly used method for the treatment of hypospadias. Its complication rate is reported to be between 3–33 %. The aim of this study is to evaluate the usefulness of a newly developed objective scoring system to predict the development of complications after TIPU.

MATERIAL AND METHODS

The scoring system included glans diameter, groove, plate and meatal location plus the presence of chordee. For each factor, points of 1–3 (glans diameter, groove and plate) or 1–4 (meatal location or chordee) were scored (total between 5–17). Patients who underwent surgery for hypospadias between May 2011 and July 2017 with a minimum of 3-month follow-up were included. Prospectively collected data was analysed retrospectively. Patients undergoing two session repair were not included. Patients' scores were compared with complications using ROC curves. The appropriate cut-off value was calculated using the Youden method.

RESULTS

Three hundred and ninety-four patients (average age: 41.9±33.4 m, average follow-up:43.9±24.7 m) were included. Complications were observed in 49 (12.4 %) patients. Those with complications had a slightly higher but statistically significantly higher average score (9.02±2.09 vs 9.86±2.52, $p<0.05$.) The cut-off value for optimal prediction of complications was determined as 10 with a negative predictive value of 90.4 %. The complication rate of patients who had 10 or fewer points was 11.1 %, the complication rate for those with 11 or more points was 20.4 % ($p=0.01$).

CONCLUSIONS

Our objective scoring system was found to successfully predict complications after TIPU for hypospadias repair. Patients with scores of 11 and above have statistically significantly more complications. This objective scoring system can be a guide surgeons who perform TIPU.

16:25–16:28

S11-6 (PP)

★ NON-MODIFIABLE PREDICTIVE FACTORS FOR COMPLICATIONS IN THE DUTCH HYPOSPADIAS STUDY

Goedele BECKERS[1], Fred VAN DER TOORN[2], Keetje DE MOOIJ[3], Robert DE GIER[4], Rien NIJMAN[5], Piet CALLEWAERT[6], Martijn STEFFENS[7], Eric VAN DER HORST[8], Piet HOEBEKE[9], Frank FROELING[10], Mark WILDHAGEN[11] and Katja P. WOLFFENBUTTEL[12]

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PURPOSE

The position of the meatus and of the division of the corpus spongiosum (DCS) are considered predictive factors for the outcome of hypospadias surgery. We determine the odds of non-modifiable factors registered in the Dutch Hypospadias Study database (DHyS) for postoperative complications.

MATERIAL AND METHODS

The DHyS contains prospective data of 1233 evaluable patients. The relation between pre- and dysmaturity, meatal position, position of DCS, preoperative penile length, penile curvature (more than 30 degrees after deglovement) and complications 6 months after first correction were investigated with logistic regression. Categorical variables were coded from less to more severe.

RESULTS

46(5.4 %) children were born pre- and/or dysmaturely: median age at birth gestational week 35(IQR 32–37), birth weight 1862grams(IQR 1200–2500). Birth weight of all other children was not registered.

For all cases, meatal position was 291 glanular, 757 coronal/distal shaft, 83 midschaft, 56 proximal and 46 penoscrotal. The position of DCS was: 681 distal shaft, 392 midshaft, and 160 proximal shaft. Preoperative penile length was 43 mm(IQR 35–50). Penile curvature was seen in 894 cases. 185 children had no urethraplasty. 250 children(20 %) had a postoperative complication.

Univariate and multivariate analysis of significant outcome variables are shown. Pre-or dysmaturity and penile length at operation were not significant for outcome(p=0.538 and p=0.581 resp).

	Univariate analysis		Multivariate analysis	
	Odds	CI	Odds	CI
Meatal position	1.652	1.537–1.775	1.415	1.281–1.562
Position division corpus spongiosum	1.835	1.667–2.020	1.346	1.180–1.534
Penile curvature	1.587	1.363–1.848	0.996	0.910–1.090

CONCLUSIONS

Meatal position and position of DCS are the only contributing non-modifiable predictive factors for complications after hypospadias surgery. Pre- or dysmaturity, penile length and penile curvature did not influence outcome significantly.

16:28–16:37
Discussion

S12: GENITALIA 2

Moderators: Nicolas Kalfa (France), TBA

ESPU Meeting on Thursday 12, April 2018, 16:34–17:14

16:34–16:37

S12-1 (PP)

DEVELOPMENT OF A NOVEL SCORING SYSTEM FOR DIAGNOSIS OF TESTICULAR TORSION "CLINICAL & RADIOGRAPHIC EXPLORATION OF SUSPECTED TORSION" (CREST)

Tariq Osman ABBAS[1], Mansour ALI[2] and Abdelrahman ELKADHI[2]

1) Hamad General Hospital, Pediatric Surgery, Doha, QATAR - 2) Hamad Medical Corporation, Pediatric Surgery Department, Doha, QATAR

PURPOSE

We introduce a novel scoring for diagnosing testicular Torsion in children; The Clinical & Radiographic Exploration of Suspected Torsion (CREST) which uses urological history, physical examination and Doppler ultrasound findings to assess risk of Testicular torsion preoperatively. Parameters include: sudden pain (2 points), testis swelling (1 points), vomiting (1 point), heterogenous testis (3 points), hydrocele (1 point) and absent vascularity (2 points). We assessed the usefulness of the CREST score when determined by pediatric surgeons mirroring emergency room evaluation of acute scrotal pain.

MATERIAL AND METHODS

Children following surgical scrotal exploration for acute scrotum over the study period were retrospectively enrolled in this study. After retrieving basic history, physical examination findings, two independent pediatric radiologists blinded to the intra-operative findings reevaluated the imaging of all patients in order to calculate CREST score. All data were captured into REDCap™ and ROC curves were used to evaluate the diagnostic usefulness of CREST.

RESULTS

Of 65 patients (mean age 10.3 years) 44 (13.0 years) had torsion. CREST score cutoff values of 0 and 10 derived from ROC analysis identified 21 high, 37 intermediate and 7 low risk cases (positive predictive value 97.5 %, negative predictive value 99 %).

CONCLUSIONS

CREST score assessed by pediatric surgeons and radiologists is accurate. Low risk patients do not require surgical exploration. High risk patients can proceed to surgery, with > 50 % avoiding negative exploration. Surgical personnel may be able to calculate CREST score to guide immediate surgical intervention and help reducing morbidity and costs of negative surgical explorations.

16:37 – 16:42

S12-2 (LO)

★ SPINAL ANESTHESIA IN THE YOUNGEST OF PATIENTS: NO NEED FOR ADVANCED AIRWAY MANAGEMENT AND REDUCED NARCOTIC USAGE

Kristin EBERT[1], Emmett WHITAKER[2] and Venkata JAYANTHI[1]

1) Nationwide Children's Hospital, Section of Urology, Columbus, USA - 2) Nationwide Children's Hospital, Anesthesia, Columbus, USA

PURPOSE

Concerns regarding potential negative effects of inhalataional and intravenous anesthetics on neurocognitive development has led to a growing interest in alternative forms in infants. We report on our institution's outcomes with the use of spinal anesthesia (SA) for urological surgery in infants less than 90 days of age, and compare their outcomes with a matched cohort of patients who underwent general anesthesia (GA).

MATERIAL AND METHODS

Patients less than 90 days of age who underwent SA for four procedures (inguinal hernia repair, scrotal exploration for torsion, PUV ablation, ureterocele puncture) were identified from our SA database. An age- and procedure-matched control cohort was identified from a list of patients who underwent the same procedures under GA. Outcomes recorded included success rate of spinal, complications, narcotic and supplemental medication usage, airway management, need for supplemental oxygen, and length of hospital stay.

RESULTS

Forty patients were identified; 20 in the SA group and 20 in the GA group. The mean age of the entire cohort was 45.3 days. Eighty percent (16/20) of SA patients had successful SA without conversion to GA; reasons for conversion included 3 with a failed lumbar puncture and 1 with refractory agitation. All GA patients had endotracheal intubation, whereas none of the successful SA patients needed any airway management. SA patients were significantly less likely to receive narcotics during the operative procedure compared to the GA group ($p=0.001$), and also had a significantly lower mean morphine equivalent dose/kilogram ($p=0.002$). Patients in the SA group were also significantly less likely to receive any supplemental medications during the operative procedure ($p=0.001$), particularly intravenous corticosteroids ($p<0.001$). There were no significant differences in length of hospitalization between groups.

CONCLUSIONS

The use of SA in babies obviates the need for endotracheal tube placement and airway management, and avoids the theoretic concerns regarding the effects of GA on neurocognitive development.

16:42–16:45

S12-3 (PP)

RE-AUDIT OF EARLY COMPLICATION ESPECIALLY IMPACTION OF DISPOSABLE DEVICE: IMPROVING OUTCOMES OF CIRCUMCISIONS WITH PLASTIBELL AND CIRCUMPLAST RINGS IN CHILDREN IN A COMMUNITY CLINIC

Abdul Rauf KHAN, Mohammed AMIN, Darrel GREGORY, Samantha HARRISON and Murtaza KHANBHAI

Thornhill Circumcision Centre, GP surgery, Luton, UNITED KINGDOM

PURPOSE

To evaluate the early postoperative complications particularly impaction of disposable devices in children's circumcision procedures under local anaesthesia between different age groups, size and types of rings, and different doctors in a community clinic.

MATERIAL AND METHODS

In our re-audit, the outcome of circumcisions (n=1449) was studied over a 1 year period (May 2016 to April 2017) performed under local anaesthesia, by trained doctors in a community clinic doing Circumplast Circumcisions (CC)(n=470) and Plastibell circumcisions (PC)(n=979). Data was collected prospectively and early postoperative complications especially ring impaction were compared between age of the child, size and types of device, and doctors who have performed the circumcision. Follow-up was arranged if required.

RESULTS

The mean age was 6.5±0.4 months (median 1.6). Overall complication rate was 6.7 % (97/1449). There is no significant difference in overall complications rate in CC (7 %n=33/470) versus PC (6.5 %n=64/979) ($p>0.5$). Although ring impaction is significantly lower in CC (0.4 %n=2/470) versus PC (3.4 %n=33/979) ($p<0.05$) but it has significantly improved from the previous audit (CC 3.2 % n=7/208 versus PC 8.7 % n=102/1179 – ESPU 2016). There is significantly lower incidence in ring impaction with Plastibell size 1.4 as compared to 1.3, 1.5 and 1.7. There is no impaction in 1.1 and 1.2 sizes. Ring impaction was significantly lower in infants versus over 1 year child (1.5 % vs 10 % n= 19/1280 vs 17/169, $p<0.5$) respectively. There is no significant difference in complications (8.5 %, 7.1 %, 6.5 %, 5.8 % and 5 %) among the five doctors' cases ($p>0.5$). Mean follow-up for 354 (24 %) children were 14 days (median 6).

CONCLUSIONS

This concludes that no significant difference noted in overall early complications of circumcisions between age of the child, size and types of device used, and among different doctors. However, ring impaction was significantly lower in infants, Plastibell size 1.4 and Circumplast.

16:45–16:54

Discussion

16:54–16:57

S12-4 (PP)

ABDOMINAL ULTRASOUND IS UNECESSARY IN VARICOCOELE EVALUATION

Martin KAEFER, Benjamin WHITTAM, Konrad SZYMANSKI, Katherine CHEN, Rosalia MISSERI, Richard RINK and Mark CAIN

Indiana University School of Medicine, Pediatric Urology, Indianapolis, USA

PURPOSE

The evaluation and treatment of the pediatric varicocele remains controversial. The paradigm for management has often been based on the strategy used for adults. It has been commonly taught that an adult, who presents with sudden onset varicocele, bilateral varicoceles, or unilateral right-sided varicocele, should be evaluated for an intra-abdominal process that could be causing external compression of the gonadal vein. Abdominal ultrasound has been the modality of choice employed in the evaluation of these individuals. We sought to determine the value of this practice in the pediatric population.

MATERIAL AND METHODS

A retrospective chart review was made of all individuals presenting to our pediatric unit between 1999 and 2012. All patients who underwent abdominal imaging as a part of their evaluation were included. Patients older than 18 years were excluded. Age at presentation, laterality, grade, calculated testicular size and mode of abdominal imaging were recorded.

RESULTS

Eighty-eight of 600 boys presenting with a varicocele underwent abdominal imaging (15 %). Indications included left sided varicocele (48), bilateral varicocele (11), right-sided varicocele (5), and recurrent varicocele (2). Twenty-two patients underwent abdominal imaging due to concern over other systemic complaints (for example abdominal discomfort). A total of 98 imaging studies were obtained (94 ultrasounds, 3 CTs, 1 MRI). In no case did the abdominal imaging reveal an intraperitoneal process causing compression of the gonadal vasculature. One case of focal nodular hyperplasia of the liver was identified in a patient with a left sided varicocele, but the involvement was well away from the contralateral renal hilum and gonadal vein.

CONCLUSIONS

Although abdominal imaging for rapid onset left, bilateral, or unilateral right-sided varicoceles has been proposed in adults, such screening is of negligible value in the pediatric population.

16:57–17:00

S12-5 (PP)

THE CAUSE OF SURGICAL FAILURE IN VARICOCELECTOMY – AN ANALYSIS OF INTRAOPERATIVE VENOGRAPHY

Kyung Tak OH[1], Sang Won HAN[1], Yong Seung LEE[1], Sang Woon KIM[1], Sung Hoon KIM[2] and Cho Nyeong LEE[2]

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PURPOSE

In children and adolescents with varicocele, preservation of the internal spermatic artery may be advantageous in terms of catch-up growth, but the success rate might be lowered. In order to overcome this drawback, intraoperative venography is performed to distinguish veins from arteries and lymphatics. To analyze the cause of surgical failure, we reviewed the pattern of remained veins through intraoperative venography.

MATERIAL AND METHODS

From January 2005 to December 2016, we retrospectively analyzed patients who underwent varicocelectomy using Palomo approach before 20 years of age and were followed up for more than 6 months. After catheterization of internal spermatic vein(ISV), visually distinct ISVs were ligated. After ligation, radio contrast was injected through the catheter and retrograde venography was taken. If there was remained veins, vessel type was classified in Bahren classification.

RESULTS

A total 156 patients underwent venography during the operation. Primary varicocelectomy was performed in 147 patients(94.2 %) while redo varicocelectomy was in 9 patients(5.8 %). Among these, open varicocelectomy was performed in 107 patients(68.6 %) by 5 surgeons and laparoscopic varicocelectomy was done in 49 patients(31.4 %) by single surgeon. The mean age at operation was 13.5±2.5 years. Remaining veins at venography after first ligation was found at 50 patients(32.1 %). Bahren type 3 was observed in 45 cases(90.0 %) while Bahren type 4 was observed in 5 cases(10.0 %). They were ligated again after venography and were confirmed again using venography. Varicocele recurrence requiring operation was in 5 patients(3.2 %) including persistence in 1 patient(0.6 %) and relapse in 4 patients(2.6 %).

CONCLUSIONS

The most common cause of failure in varicocelectomy is to leave the collateral veins of ISV. It may be overcome as surgery is performed at upper level or as the proficiency of surgery increases. An external spermatic vein(ESV) that merges with the ISV at the higher level is present at about 3.2 %. This is considered to be an unidentifiable structure if venography is not performed.

17:00–17:05

S12-6 (VP)

ROBOTIC EXCISION OF A NON-COMMUNICATING RUDIMENTARY UTERINE HORN WITH ENDOMETRIOSIS IN A POST PUBERTAL FEMALE

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1) Apollo Children's Hospital, Pediatric Urology, Chennai, INDIA - 2) Apollo Children's Hospital, Pediatric Surgery, Chennai, INDIA

PURPOSE

A non-communicating uterine horn with endometrial lining can lead to severe dysmenorrhoea at menarche and endometriosis. The risk of an ectopic pregnancy and rupture add to the surgical indications. Under the American Society of Reproductive Medicine Classification this condition is classified as a 2B Mullerian Duct Anomaly.

MATERIAL AND METHODS

A 15 year old girl with severe dysmenorrhea of six months duration was evaluated in the Emergency Department. She had marked left iliac fossa tenderness and a palpable mass. MRI of the pelvis revealed a left sided unicornuate uterus markedly distended with blood, a large hematosalpinx and multiple ovarian chocolate cysts.

RESULTS

Robotic excision was done successfully. The Harmonic scalpel was particularly useful and helped in ovarian preservation. Dissection was done without fear of ureteric injury as she also had left renal agenesis. Three menstrual cycles following surgery were painless and ultrasound has shown normal ovaries.

CONCLUSIONS

The video aims to demonstrate the use of Robotic Assistance in tackling this difficult and rare mullerian anomaly with an excellent outcome and minimal morbidity.

17:05–17:14

Discussion

S13: ONCOLOGY

Moderators: Yves Heloury (Australia), Sergei Zorkin (Russia)

ESPU Meeting on Friday 13, April 2018, 08:00–08:52

08:00–08:03

S13-1 (PP)

★ NEPHRON SPARING SURGERY VERSUS SIMPLE NEPHRECTOMY FOR UNILATERAL LOCALIZED WILMS TUMOR

Shankar K, R.B. NERLI, Shridhar GHAGANE and Neeraj DIXIT

Department of Urology, KLES Kidney Foundation, KLES Dr. Prabhakar Kore Hospital & MRC, Belagavi, Ind, Department of Urology, Belagavi, INDIA

PURPOSE

Traditionally children with Wilms tumor (WT) were managed with radical nephrectomy. More recently NSS has been reported for children with WT in the absence of absolute indications. In this present study we have prospectively assessed survival and local recurrence rates in children with unilateral localized Wilms tumor (WT) treated with either nephron sparing surgery (NSS) or simple nephrectomy with removal only of the perirenal fat adherent to the tumor surface. In this present study we have prospectively assessed survival and local recurrence rates in children with unilateral localized Wilms tumor (WT) treated with either nephron sparing surgery (NSS) or simple nephrectomy with removal only of the perirenal fat adherent to the tumor surface.

MATERIAL AND METHODS

Children presenting with unilateral Wilms tumor during the period Jan 2006 to Dec 2015 were prospectively randomized to undergo either simple nephrectomy along with removal of perirenal adherent fat or nephron sparing surgery. Treatment was administered to children according to the SIOP protocol 2001.

RESULTS

During the study period 28 children with Wilms tumor were operated. Thirteen children underwent simple nephrectomy, whereas the remaining 15 underwent nephron sparing surgery. The opposite kidneys were normal on USG and CT. The mean age at intervention was 44 months. Eight children had stage I disease and the remaining had stage II disease. No intraoperative complications were noted. The follow-up ranged 24–136 months and all children are alive. Only one child had local recurrence and underwent radiotherapy and chemotherapy. The was no difference in overall survival in both the groups. The post-operative GFR was significantly higher in children undergoing NSS, though the serum creatinine was within normal range in all children. The eventful survival was 96.42 %.

CONCLUSIONS

The oncological outcome of NSS for unilateral Wilms tumor is as good as simple nephrectomy with better preservation of renal function.

08:03–08:06

S13-2 (PP)

THE IMPACT OF NEO-ADJUVANT CHEMOTHERAPY ON NEPHRON SPARING SURGERY AND LAPAROSCOPIC RESECTION IN WILMS TUMOUR, A SINGLE CENTRE EXPERIENCE

Annie ROBERTS[1], Aurore BOUTY[1], Michael NIGHTINGALE[2], Martin CAMPBELL[3] and Yves HELOURY[1]

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PURPOSE

Increasingly, the treatment of Wilms tumour is turning to optimisation of long-term outcomes such as the rate of impaired renal function and adhesive obstruction. Increasing evidence that nephron sparing surgery (NSS) and laparoscopic resection reduce these two morbidities has driven us to review cases of Wilms in our centre from 2011–2017 to establish the impact of preoperative chemotherapy on the use of both NSS and laparoscopic resection.

MATERIAL AND METHODS

Retrospective case review of all patients undergoing resection for histologically confirmed Wilms tumour from January 2011– October 2017 in a single institution. Data included demographic, diagnostic, preoperative and postoperative information. Eligibility for laparoscopic or nephron sparing surgery was determined using the SIOP 2014 umbrella protocol.

RESULTS

Of the 61 children reviewed, 10 underwent NSS and 22 underwent laparoscopic resection. Of the 10 patients undergoing NSS, 8 (80 %) would have been ineligible prior to neoadjuvant chemotherapy. Neoadjuvant chemotherapy also resulted in 9 (41 %) of the laparoscopic group being eligible for the laparoscopic approach that would not have been amenable prior.

Median tumour volume reduction was larger in the laparoscopic group (71 %) compared to the open group (46 %), with a similar median preoperative volume (laparoscopic 365 ml vs open 314 ml). Conversion to open occurred in 2 cases (9 %).

CONCLUSIONS

Neoadjuvant chemotherapy increases the likelihood of successful NSS or laparoscopic resection in Wilms tumour. This has the potential for improved long-term morbidity, adding further weight to the argument for neoadjuvant chemotherapy.

08:06–08:09

S13-3 (PP)

INFERIOR VENA CAVECTOMY FOR COMPLETE EXCISION OF WILMS' TUMOUR

Sadaf ABA UMER KODWAVWALA[1], Sajid SULTAN[1], Bashir AHMED[1], Shamvil ASHRAF[1], Muhammad MUBARAK[2], Abdaal WASIM KHAN[3], Zaid SUFI[4], Philip G RANSLEY[1] and Adeeb Ul Hasan RIZVI[1]

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PURPOSE

To evaluate the outcome of patients who underwent “enbloc” inferior venacavectomy with tumour nephrectomy for Wilms’ tumour.

MATERIAL AND METHODS

Of the 194 patients of Wilms’ tumour managed during 2001–2017, we retrospectively reviewed the prospectively collected data of Six patients who underwent “en bloc“ inferior venacavectomy and tumour nephrectomy. Data was reviewed with regard to the findings, treatment and event free and overall survival. Statistical analysis was done on SPSS v.20 using Paired samples T- Test.

RESULTS

Mean age was 4.3 +/- 1y. Five (83 %) were right sided. All presented with abdominal mass. The mean tumour volume was 803 +/- 748 cm^3 and three had pulmonary metastases. The IVC thrombus was infrahepatic in two and intrahepatic in four with distal extension to the bifurcation.

Neoadjuvant chemotherapy reduced the mass to a mean volume of 305 +/- 185.9 cm^3 ($p = 0.09$) and all pulmonary metastases resolved with no significant change in IVC thrombus. Enbloc inferior venacavectomy and nephrectomy was performed in all patients, sparing the hepatic veins. The contralateral renal vein was ligated beyond the thrombus. The postoperative complications included deranged LFT’s with subacute intestinal obstruction in one and one patient needed postoperative ventilatory support for 2 days. Histopathology showed 100 % necrosis in 3 patients. Of the six patients, 4 needed abdominal radiotherapy along with chemotherapy. Overall and event free survival is 83 % with mean follow up period of 25 +/- 14 months.

CONCLUSIONS

Our results show Enbloc inferior venacavectomy and tumour nephrectomy is safe and effective management for Wilms’ tumour with subdiaphragmatic IVC thrombus not amenable to intravascular retrieval.

08:09–08:12

S13-4 (PP)

PULMONARY METASTASES AND WILMS' TUMOR HISTOPATHOLOGY, AN ASSOCIATION?

Seppo TASKINEN[1], Minna KOSKENVUO[2], Jouko LOHI[3], Outi LESKINEN[4] and Mervi TASKINEN[2]

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PURPOSE

To evaluate if Wilms' tumor histopathology is different in patients with and without pulmonary metastases.

MATERIAL AND METHODS

Operative database was evaluated for Wilms' tumors during years 1988–2015. Pathology samples were re-evaluated from all 59 patients who had diagnostic cutting needle biopsy (CNB) and nephrectomy samples after neoadjuvant chemotherapy available. Tumor volumes at diagnosis and preoperatively were measured from all 52 patients, who had CT- or MRI-images available for re-evaluation. Pulmonary metastases were diagnosed by CT scan.

RESULTS

Fifteen out of the 59 (25 %) patients had pulmonary metastases in CT-scans. Radiological Wilms' tumor volume and CNB blastemal cell proportion were usually higher in patients with pulmonary metastases (903 ml (IQR 807–1215) vs. non-metastatic 428 ml (IQR 299–765), p<0.001) and 75 % (IQR 50–97) vs. 50 % (IQR 20–80), p=0.025 respectively). The proportions of stromal and epithelial cells were similar between those with and without metastases (p=0.229 and 0.257 respectively). Nephrectomy samples belonged to low risk, intermediate risk and high risk in 5 (11 %), 33 (75 %) and 6 (14 %) patients without pulmonary metastases and in 1 (7 %), 13 (87 %) and 1 (7 %) patients with pulmonary metastases respectively. At nephrectomy samples, the proportion of necrosis was bigger in patients with than without metastases (95 % (IQR76–99) vs. 60 % (IQR 20–96), p=0.033 respectively). In 12/15 cases the pulmonary metastases disappeared during preoperative chemotherapy, with no difference in Wilms' tumor histopathology between the cases with responding or resistant metastases.

CONCLUSIONS

Large-volume blastemal-rich Wilms' tumors are most prone to present with pulmonary metastases. 80 % of pulmonary metastases disappear with preoperative chemotherapy.

08:12–08:24

Discussion

08:24 – 08:29

S13-5 (VP)

ROBOT-ASSISTED LAPAROSCOPIC NEPHROURETERECTOMY FOR WILMS' TUMOR : PRELIMINARY RESULTS

Thomas BLANC[1], Luca PIO[1], Yves HELOURY[1], Daniel ORBACH[2], Véronique MINARD-COLIN[3], Pauline CLERMIDI[1] and Sabine SARNACKI[1]

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PURPOSE

The role of minimally invasive surgery for the treatment of Wilm's tumors has been limited to pioneer groups.

The purpose of this prospective study is to present the preliminary results of robot-assisted laparoscopic (RAL) nephrectomy for Wilms' tumor in the first year of a robotic program.

MATERIAL AND METHODS

Children with unilateral non-metastatic Wilms' tumor were preoperatively treated according to the SIOP 2001 protocole, and afterwards were submitted to RAL nephrectomy and lymph node sampling. A four-trocar transperitoneal approach was used. The tumor was extracted inside a plastic bag and without morcellation through a Pfannenstiel incision.

RESULTS

4 children underwent right RAL nephrectomy at a mean age of 4.6 years (3.7 – 5.2).

The first patient was converted due to renal vein injury. The third patient had a misdiagnosed renal vein tumor thrombus found during the procedure. The nephrectomy was performed with the RAL technique. The thrombus could not be treated robotically, with conversion to open procedure.

In all patients the tumor was completely removed, as well as lymph node samples and no ruptures occurred.

The staging was: 2 stage I; 1 stage 2, 1 stage III (lymph nodes involvement). Three patients had a standard histology and 1 a diffuse anaplasia.

The postoperative course was free of complications and all the patients were discharged from day 2 to day 7. No recurrences or long-term complications have been detected in 1 – 10 months of follow-up.

CONCLUSIONS

RAL nephrectomy for Wilms' tumor is a feasible and safe procedure in a selected group of children after chemotherapy. It reproduces all the steps of the open surgical approach required to treat the tumor in order to maintain an excellent oncological result, with the advantages of a short hospital stay and cosmetically more acceptable incisions.

08:29 – 08:32

S13-6 (PP)

★ ASSESSMENT OF UROFLOWMETRY PARAMETERS IN HEMATOPOIETIC CELL TRANSPLANTATION RECIPIENTS COMPLICATED BY HEMORRHAGIC CYSTITIS

Sahar EFTEKHARZADEH[1], Mehrnoosh SAMAEI[1], Seyed Farshad SEYED TAHER[1], Amirali HAMIDIEH[1] and Abdol-Mohammad KAJBAFZADEH[2]

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PURPOSE

Hemorrhagic Cystitis (HC) constitutes a common yet serious complication in hematopoietic cell transplantation (HCT) recipients; although preventive measures against HC are taken still it could lead to severe morbidity and mortality in these patients. In this study we aim to assess value of uroflowmetry parameters in prediction of HC occurrence.

MATERIAL AND METHODS

Thirty-seven patients with a mean±SD age of 9.98±3.77 years, who received HCT from July 2011 till July 2015 were randomly included in this prospective study. Patients' uroflowmetry parameters in the day of transplantation, 1 day after transplantation and 15 days after transplantation were recorded. In case of accessibility uroflowmetry was performed at the time of HC as well.

RESULTS

Eighteen patients (48.6 %) faced HC 38.44±28.60 days following HCT. Uroflowmetry parameters were compared among patients who suffered from HC and those who did not. Analysis of data indicates that voided volume and average flow rate on the 15th days after transplantation were significantly higher in patients who faced HC($p<0.05$), also it indicates that distribution of voided volume and average flow rate on the 15th days after transplantation differs significantly between who suffered from HC and those who did not ($p<0.05$). Kendall's tau and Spearman's (rho) rank correlation coefficient tests also indicate significant correlation between mentioned two parameters and occurrence of cystitis ($p<0.05$).

CONCLUSIONS

This study suggests that uroflowmetry parameters could be valuable in predicting HC occurrence; however, further studies with larger populations are needed to confirm its predictive values.

08:32–08:35

S13-7 (PP)

DO IMAGE-DEFINED RISK FACTORS RELIABLY PREDICT THE RISK OF ASSOCIATED NEPHRECTOMY IN ABDOMINAL NEUROBLASTOMA SURGERY?

Sebastien FARAJ[1], Estelle THEBAUD[2], Marie Pierre QUERE[3], Stephanie PROUST[4], Isabelle PELLIER[4] and Marc David LECLAIR[1]

1) CHU Nantes, Pediatric Surgery, Nantes, FRANCE - 2) CHU Nantes, Pediatric Oncology, Nantes, FRANCE - 3) CHU Nantes, Pediatric Radiology, Nantes, FRANCE - 4) CHU Angers, Pediatric Oncology, Angers, FRANCE

PURPOSE

Image Defined Risk Factors (IDRF) represent a list of preoperative protocol criteria to assess potential resectability of neuroblastoma, hence the need for preoperative chemotherapy. We investigated the prevalence of renal vessels infiltration criteria, its evolution before/after chemotherapy, and its impact on the risk of associated nephrectomy.

MATERIAL AND METHODS

Retrospective monocentric study of 81 consecutive abdominal neuroblastic tumours (1999–2016). Double blinded review of all preoperative CT-scan studies (at diagnosis and after chemotherapy) by pediatric surgeon and radiologist assessing the presence of the renal IDRFs (infiltration or encasement of renal pedicle). Main outcome measures were difficulties of surgical resection, the need for additional organ resection (based on surgical report), and the extent of surgical resection (based on pathology report).

RESULTS

Among 28/81 children without any renal IDRF present at diagnosis, 27/28 underwent complete macroscopic tumour resection, and none required nephrectomy in addition to tumour resection. When infilitration of renal pedicle was present at diagnosis, it disappeared in 21/53 (40 %) after chemotherapy, in whom none underwent nephrectomy. Among the 32 children who kept renal IDRF after chemotherapy, 7/32 had macroscopic incomplete resection, and 12/32 required associated nephrectomy. There was no difference between “infiltration” and “encasement” IDRFs to predict the risk of associated nephrectomy (12/53, 23 % vs 11/35, 31 %, p=0,8).

CONCLUSIONS

Renal IDRFs are relevant to predict safe resectability of neuroblastoma. Children with IDRF which disappear after chemotherapy achieve the same surgical outcome than those without IDRF.

08:35–08:40

S13-8 (VP)

PRONE RETROPERITONEOSCOPY FOR ADRENAL TUMORS

Maria Esmeralda KUAN[1], Jerónimo GONZÁLAVEZ[1], Natalia GALLEGO[1], María Soledad FERNÁNDEZ[2] and Pedro ALCARAZ[1]

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PURPOSE

In adrenal tumors 5 cm or less, with no invasion and metastasis are feasible through MIS. Prono retroperitoneoscopy is a feasible technique due to its direct access to the adrenal gland and its vessels, avoiding the time and morbidity of mobilizing the colon in the transabdominal approach.

MATERIAL AND METHODS
Retrospective cases from 2012 and June 2017 of patients with adrenal tumors removed by prono retroperitoneoscopy.

RESULTS
There were 4 patients with a mean age of 12 months (8,6), with solid lesion in adrenal gland with a mean diameter of 3,7 cm (0,49), 3 left 1 right, all of them with diagnosis of neuroblastoma. All patients were positioned fully prone. The retroperitoneal space was created using the Gaur technique, 1 optical port and 2 working ports were used. With blunt dissection and diathermy the adrenal was exposed and the vessels identified, they are individual divided either with clips or a vessel sealing device. The tumor was removed complete with a specimen retrieval system. Mean surgery time was 170 min (30,5). There was one case of capsule rupture, and no reconversions. No postoperative complications. The mean postoperative LOS was 2,3 (0,96) days. All lesions were margin free and none required adjuvant chemotherapy. The mean follow up was 17 months (24,6); there have been no recurrence, and an overall survival of 100 %.

CONCLUSIONS
Retroperitoneoscopic adrenalectomy is a feasible procedure, in selected cases it can be used to safely treat benign and malignant adrenal masses in children with minimal morbidity and a shorter hospital stay.

08:40 – 08:52
Discussion

S14: LAPAROSCOPY / ROBOTICS

Moderators: Rafal Chrzan (Poland), Aseem Shukla (USA)

ESPU Meeting on Friday 13, April 2018, 08:52–09:46

08:52–08:55

S14-1 (PP)

★ FEASIBILITY AND BENEFITS OF THE RETROPERITONEAL LAPAROSCOPY IN THE TREATMENT OF URETEROPELVIC JUNCTION OBSTRUCTION IN CHILDREN UNDER ONE YEAR, COMPARED TO OPEN SURGERY

Anthony KALLAS-CHEMALY, Matthieu PEYCELON, Liza ALI, Christine GRAPIN-DAGORNO, Elisabeth CARRICABURU, Pascale PHILIPPE-CHOMETTE, Goharig ENEZIAN, Annabel PAYE-JAOUEN and Alaa EL-GHONEIMI

Robert-Debré University Hospital, AP-HP; Université Paris Diderot, Sorbonne Paris Cité, Paediatric Urology, National reference center of rare urinary tract malformations (MARVU), Paris, FRANCE

PURPOSE

The advantage and feasibility of laparoscopy in the treatment of ureteropelvic junction obstruction (UJPO) remains controversial in children under twelve months of age. The aim of this study was to evaluate the feasibility and benefits of retroperitoneal laparoscopy (RL) in this age group, compared to open surgery.

MATERIAL AND METHODS

From 2012, the choice of the approach for children less than twelve months of age was decided according to the laparoscopic experience of the surgeon; two surgeons operated by RL, 3 trocars standardized technique (5, 3, 3 mm) while others operated them by dorsal lumbotomy (DL). Analgesics and criteria for discharge were conducted according to pre-established protocol. Intra- and postoperative parameters have been analyzed retrospectively.

RESULTS

During 5-year period, 24 RL (mean age 7 months: 1,5–11) 55 DL (5,2 months: 2–11), were included with a mean follow-up of 27 months (5–63). Postoperative drainage was performed by double-J stent in 13 (RL) and 5 patients (DL) or external stent in 11(RL) and 50 patients (DL).
There was no conversion in RL. Hospital stay and IV analgesics duration were significantly lower in the RL group (2.83 days vs 2.35 days, p=0.02 respectively) while operative time was significantly longer (163.05 min vs 85.76 min, p=0.001). A redo surgery was needed for one patient in each group (UPJ stenosis).
34 % of DL 12 % of RL patients were operated by the fellow assisted by the senior staff.

CONCLUSIONS

Although, RL remains challenging in infants with longer operative time, it is feasible without added morbidity compared to open surgery. The hospital stay and analgesic requirements are less. Some drawbacks still need to improve: higher use of double J stent and the lower number of patients done by fellows of pediatric urology.

08:55–08:58

S14-2 (PP)

ROBOTIC PYELOPLASTY IN CHILDREN AND ADULTS: ASSESSMENT OF COMPLICATIONS

Kristian FOG-POULSEN and L. Henning OLSEN
Aarhus University Hospital, Skejby, Department of Urology, Aarhus N, DENMARK

PURPOSE

When surgical reconstruction for UPJO is indicated, access can be gained either by the transperitoneal or the retroperitoneal approach. No study has shown significant differences in complication rates between transperitoneal (TA) and retroperitoneal (RA) pyeloplasty and the choice of route depends on the surgeon's preferences. We assessed the complication rates in children (RA) and adults (TA) to contribute to the discussion about which route to take.

MATERIAL AND METHODS

Data were obtained from UroLap, a Danish nationwide quality assessment database. Data were analysed from 2009 and to 2014 after introduction of the Clavien-Dindo classification. Operative data were sampled prospectively, while incidence of complications was obtained by chart review retrospectively. In this period a total of 93 children (3–16 years) were admitted for robotic RA pyeloplasty and 113 adults (>16 years) for robotic TA pyeloplasty.

RESULTS

Conversion rates to open surgery were 3,5 % in adults and 4,3 % in children. A total of 89 RA pyeloplasties in children and 109 TA pyeloplasties in adults were completed as robotic-assisted laparoscopic procedures. Mean operative time was 137 minutes in children and 103 minutes in adults. Length of hospitalization was 1.9 days in children and 1.6 days in adults. Overall complication rate (Clavien-Dindo) was 16,9 % in children and 24,8 % in adults. Grade 1 occured in 8,9 % in children and in 8,6 % of adults. Grade 2 occurred in 3,4 % of children and in 10,1 % of adults. Grade 3 was reported in 4,5 % of children and 6,4 % of adults. Urinary leakage was seen in five adult patients. No grade 4 or 5 complications were reported.

CONCLUSIONS

This series of robotic retroperitoneal pyeoloplasty in children is the largest to our knowledge and contribute to a more valid estimate of the true complication rate of robotic-assited retroperitoneal pyeloplasty in the paediatric population. No clinically significant urinary leakage occurred in children, which strengthens the hypothesis of a closer anastomosis sealing after disinflation of the retroperitoneal space.

08:58–09:01

S14-3 (PP)

RETROPERITONEAL APPROACH FOR URETEROPELVIC JUNCTION OBSTRUCTION: MOVING FROM LAPAROSCOPIC TO ROBOT-ASSISTED LAPAROSCOPIC REPAIR. PRELIMINARY RESULTS

Thomas BLANC, Pauline CLERMIDI, Henri LOTTMANN, Nathalie BOTTO, Luca PIO and Yves AIGRAIN

Hôpital Necker - Enfants Malades, Department of Pediatric Surgery and Urology, Paris, FRANCE

PURPOSE

Robot-assisted laparoscopic pyeloplasty (RALP) has been gaining acceptance among pediatric urologists. Few studies have evaluated the retroperitoneal approach of RALP. Our aim was to evaluate our preliminary results in terms of safety and efficacy during the first year of a muldisciplinary paediatric robotic program.

MATERIAL AND METHODS

We performed a prospective analysis of children undergoing RALP for ureteropelvic junction obstruction (n=22). The diagnosis of ureteropelvic junction obstruction was confirmed by ultrasound and Tc-99m mercaptoacetyltriglycine renal scan or MRI; same criteria were used to evaluate the outcome. The retroperitoneal approach was done according to specific algorithm. Transperitoneal approch (n: 8) was chosen for horseshoe kidney, ectopic kidney, and redo surgery. We analysed the 14 cases done through the lateral retroperitoneal approach. Dismembered pyeloplasty was done for all, anastomosis was performed using a running monofilament 6/0 absorbable suture. All were drained by double J.

We evaluated operating room parameters and complication rates.

RESULTS

Mean age was 9 years (3–16) and mean weight was 30 kg (15–55). Mean set-up time, from skin incision until the end of docking, was 1 hour (47–82 min). Mean surgeon's console time was 169 min (108–300). No conversion to an open operation was necessary. The postoperative course was free of complications. All the patients but one were discharged on day one. Mean follow-up was 6 months (1–10). Redo pyeloplasty was not needed. Transmission to trainees was feasible only after 10 cases done by the same surgeon.

CONCLUSIONS

These early results suggest that retroperitoneal RALP in children is feasible, safe and effective; a longer term follow-up is awaited.

09:01 – 09:04

S14-4 (PP)

LEARNING CURVE OF PEDIATRIC SURGERY USING VESICOSCOPIC ACCESS

Aleksandr PIROGOV[1], Vladimir SIZONOV[2] and Mikhail KOGAN[3]

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PURPOSE

The learning rate of surgical interventions used in cases of bladder and ureterovesical junction diseases in children and based on vesicoscopic access (VA) remains understudied. We analyzed the learning curve based on the experience of 157 vesicoscopic surgeries performed by a single surgeon (P.A.V.).

MATERIAL AND METHODS

From 2012 through 2017, VA was used in surgical treatment of 157 patients ranging in age from 2 months to 18 years (average age 4.9±8.7 years) – 79 girls and 78 boys. 110 patients (70.0 %) had unilateral ureteroneocystostomy carried out using vesicoscopic access: (21 (18.2 %) cases – ureterovesical junction (UVJ) obstruction, 89 (81.8 %) – vesicoureteral reflux (VUR). 44 patients (28.0 %) had bilateral ureteroneocystostomy performed using vesicoscopic route (VUR – 43 patients (97.7 %), 1 (2.3 %) – UVJ obstruction), 3 children (1.9 %) – diverticulectomy. To determine the learning curve, we fitted a nonlinear regression of a point set with every point representing the duration of a unilateral ureteral reimplantation for VUR correction.

RESULTS

It was established that the learning plateau (the shortest possible surgery duration) was 82 minutes. According to our data, the surgeon needed to carry out 25 unilateral anti-reflux surgeries to reach the 90 % potential (reflecting the corresponding learning rate). In addition, by the time when 25 unilateral anti-reflux interventions were performed, 69 children had been operated using VA.

CONCLUSIONS

A large number of VA operations necessary to develop manual skills to an optimal level demonstrates the complexity of vesicoscopic surgery and determines the need for a certain dedication to learning of the technique. However, the attainable reduction of surgery duration to values comparable with open surgery combined with its less traumatic character completely justifies the efforts invested in mastering the procedure.

09:04–09:07

S14-5 (PP)

URETERAL STENT COLONIZATION AND URINARY TRACT INFECTION IN CHILDREN UNDERGOING MINIMALLY INVASIVE PYELOPLASTY

Amos NEHEMAN[1], Ashraf TAMIMI[1], Miki HAIFLER[1], Kobi STAV[1], Abd El-Halim DARAWSHE2[2], Ilan LEIBOVITCH[2], Galina GOLTZMAN[3] and Amnon ZISMAN[1]

1) Assaf Harofeh Medical Center, Urology Department, Rishon Le Zion, ISRAEL - 2) Meir medical center, Urology Department, Kfar Saba, ISRAEL - 3) Assaf Harofeh Medical Center, Infectious diseases Department, Rishon Le Zion, ISRAEL

PURPOSE

To evaluate the association between the microorganisms causing urinary tract infection (UTI) and stent colonization in children with indwelling double J ureteral stents (DJS) after minimally invasive pyeloplasty.

MATERIAL AND METHODS

We reviewed the medical records of 30 (22 males and 8 females) consecutive patients who underwent laparoscopic and robotic assisted pyeloplasty with DJS insertion. Urinary cultures were obtained before surgery, before stent extraction (if any urinary tract infection was suspected during the indwelling period) and one month after extraction. Proximal, mid and distal parts of the stent were sent for culture.

Univariate and multivariable logistic regression analyses were utilized to find predictors for post-operative UTI and stent colonization.

RESULTS

The median age at surgery was 2.1 years (range 2 month to 17 years). The median period for stent indwelling was 5.09 (4.57–6.00) weeks. UTI during the stent indwelling period occurred in 30 % of cases. 63 % of stent cultures were positive. Stent and urinary cultures were identical in only one case. There were no cases of UTI one month after stent extraction, however, 3 cases of asymptomatic bacteriuria were observed. There was no statistically significant association between clinical UTI, gender, stent diameter and indwelling period duration.

CONCLUSIONS

The causative pathogen of UTI after minimally invasive pyeloplasty is unrelated to the isolated bacteria from stent cultures. Therefore, routine stent culturing is of low clinical significance. Small caliber stents and longer indwelling periods do not seem to be risk factors for UTI.

09:07–09:22

Discussion

09:22 – 09:25

S14-6 (PP)

RETROPERITONEOSCOPIC PYELOPLASTY DRAINAGE, TRANSPELVIC IS THE WAY!

Joana LOPES[1], Oliver SANCHEZ[2], Andrew ROBB[1], Liam MCCARTHY[1], Karan PARASHAR[1] and Harish CHANDRAN[1]

1) Birmingham Children's Hospital, Paediatric Surgery and Urology, Birmingham, UNITED KINGDOM - 2) Centre Hospitalier Universitaire Vaudois, Department of Pediatric Surgery, Lausanne, SWITZERLAND

PURPOSE

There is a wide variety in post-operative pyeloplasty drainage practices. Our previous practice consisted of cystoscopy for JJ stent insertion, followed by patient repositioning for retroperitoneoscopic pyeloplasty (RPP), and stent removal at 6 weeks under general anaesthetic. We have recently changed to a simplified percutaneous drainage (PD), by transanastomotic stenting with a shortened Salle intraoperative pyeloplasty stent (Cook® Medical) introduced through the pelvis.

MATERIAL AND METHODS

We analysed the short-term results of our first 32 PD cases (Group 2) versus the previous 32 internally drained (ID) patients (Group 1) with a retrospective review of case notes collecting demographic data, operative details, post-operative course including re-admissions, symptomatic leak and urinoma, early recurrence, reoperation, drainage malfunction or problem during stent retrieval. Comparisons were made by Mann-Whitney test, $p<0.05$ taken as significant.

RESULTS

64 consecutive retroperitoneoscopic pyeloplasties were analysed, performed between August 2014 and October 2017. Mean age in our cohort was 8,1 +/- 5,5 years, 1F : 1.6M. Mean operative time in Group 2 was 144 +/- 6,5 min while it was 181 +/- 8,2 min in Group 1 ($p = 0.001$). The post-operative median length of stay was 2 days in both groups. 2 patients needed reoperations in PD Group - one stent retrieval failure, and one for JJ stent insertion. In the ID Group - 2 patients needed reoperations for drainage of urinoma; one patient needed a cystotomy at time of JJ removal due to failure to retrieve stent. In each group there was one readmission due to pain, without further interventions.

CONCLUSIONS

The percutaneous drainage has significantly shortened the overall procedure time, avoided lower urinary tract instrumentation in 97 % of patients and avoided an additional general anaesthetic in 94 %. There was no increase in early complications or readmissions and no symptomatic urine leaks. We will further analyse the mid and long term results.

09:25–09:28

S14-7 (PP)

USING TIME-DRIVEN ACTIVITY-BASED COSTING TO IDENTIFY OPPORTUNITIES FOR PROCESS EFFICIENCY AND COST OPTIMIZATION FOR THE ROBOT-ASSISTED LAPAROSCOPIC PYELOPLASTY

Yves J.L. BODAR[1], Arun K. SRINIVASAN MD[1], Apurva S. SHAH MD, MBA[2], Trudy KAWAL MD[1], Meaghan LUTTS MBA[3] and Aseem R. SHUKLA MD[1]

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PURPOSE

Robot-Assisted Laparoscopic Pyeloplasty (RALP) is a commonly performed procedure in children, but as an emerging technology, a standard methodology to assess costs and opportunities for work flow optimization lacks elucidation. We hypothesized that time-driven activity-based costing (TDABC) yields granular data points to determine the true costs of a procedure, and can be utilized to maximize cost and time-flow efficiency.

MATERIAL AND METHODS

The RALP care pathway was defined as a single day process from patient arrival to the pre-operative suite to discharge from the post-anesthesia care unit (PACU). Process maps were created with an interdisciplinary team to survey RALP activities. Retrospective time stamps from EPIC™ were analyzed for fiscal year 2016 (FY16) RALP cases. Prospective stop watch timing was performed for 13 RALP cases to validate retrospective data. Maintenance and disposable costs were calculated, amortized and categorized. Personnel costs for each phase of care were measured using TDABC. Per-minute capacity costs were calculated using FY16 financial data, and multiplied by the time stamps.

RESULTS

A total of 25 RALP cases were analyzed from FY16, and TDABC calculation determined a cost of $11906.67 including overhead and indirect robot costs. Current robot usage is 22 % of total available capacity, and per case costs could be reduced by 15 % if total capacity is utilized. Cost categories with the most variance were pre-operative services (115 min, 27.5 SD), robotic console (142 min, 30.7 SD) and PACU times (145 min, 101.1SD). Robotic console time and operating room turnover/preparation comprised the costliest categories by TDABC calculation.

CONCLUSIONS

TDABC offers a novel approach to cost accounting of the RALP that most accurately measures resource utilization. TDABC also identifies high-cost/high variability loci in the RALP process map that will be targeted for process/quality improvement that is ongoing at our institution.

09:28–09:31

S14-8 (PP)

ROBOTIC SURGERY IN PEDIATRIC UROLOGY: 5 MM INSTRUMENTS ARE SAFE FOR PEDIATRIC UROLOGIC RECONSTRUCTIVE PROCEDURES

Trudy KAWAL, Aseem SHUKLA, David CHU, Yves BODAR and Arun SRINIVASAN

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

PURPOSE

The aim of this study is to examine the overall experience at a single pediatric urology center using 5 mm instruments with no planned additional assistant ports during common robotic procedures. We hypothesized this approach is safe and feasible for a variety of pediatric urologic reconstructive procedures.

MATERIAL AND METHODS

We retrospectively reviewed all major robotic procedures entered into an IRB approved data registry. The analysis was performed only for procedures in which 5 mm instruments were used exclusively with hook diathermy. Procedures that utilized 8 mm instrumentation were excluded from the study. Data were abstracted according to patient age, weight and robotic surgery performed. Outcomes included post-operative complications, operative time, operative blood loss, need for assistant port placement and conversion rates to open or laparoscopic surgery.

RESULTS

From 2012 to 2016, 220 consecutive pediatric RAL urological surgical cases were performed on 201 patients. These comprised pyeloplasty (n=102) 46.4 %, ureteral reimplants (n=84) 38.2 % and ipsitateral ureteroureterostomy (n=34) 15.5 %. Median age at surgery was 4 years (3 months to 18 years). There were no conversions to open or laparoscopic surgery. Placement of an additional Assist port was documented in 7 cases. Severe (Clavien grade 4) complications occurred in 2 patients requiring ICU admission: one for sepsis and one ventilator dependent patient having increased work of breathing post op. Intra-op blood loss was minimal (<50 ml) in 97 % of cases. Patients ≤ 1 year of age comprised 28.6 % of the study population. Univariate analysis revealed no association between age and occurrence of complications (p=0.957)

CONCLUSIONS

This study represents one of the largest series of consecutive robotic assisted laparoscopic surgery using 5 mm instruments in pediatric urology. We conclude that the use of 5 mm instruments gives excellent operative outcomes in pediatric reconstructive procedures.

09:31 – 09:34

S14-9 (PP)

SINGLE INSTITUTION EXPERIENCE AND TECHNIQUE FOR ROBOTIC-ASSISTED LAPAROSCOPIC DISMEMBERED URETERAL REIMPLANTATION

Arun SRINIVASAN, Jay SHAH, Diana BOWEN, Jason VAN BATAVIA, Yves BODAR, Christopher LONG and Aseem SHUKLA

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

PURPOSE

Robotic assisted laparoscopic extravesical ureteral reimplantation (RALUR-EV) can be utilized for primary obstructive mega-ureter (POM) or ureters associated with diverticula. We hypothesize that RALUR-EV approach is feasible and effective for dismembered reimplant with or without tapering and tailoring of ureter.

MATERIAL AND METHODS

All patients undergoing robotic surgery at our institution are prospectively entered into an IRB approved registry. We retrospectively reviewed patients who underwent dismembered RALUR-EV from April 2009 to August 2017, and had at least one post-operative ultrasound. Inclusion criteria included POM, ureter associated with a bladder diverticula, distal ureteral stricture, or high grade VUR. Patient demographics and outcome variables analyzed included age, gender, ureteral stent placement, length of hospital stay (LOS), urinary tract infection (UTI), and complications by Clavien grade.

RESULTS

25 patients (17 male, 8 female) had dismembered RALUR-EV with a median age of 4 years (IQR 1.4,8.5) and median follow up of 11.6 months (IQR 5,33). Diagnoses included POM in 13 patients (52 %), UVJ obstruction in 6 (24 %), diverticulum in 4 (16 %) and high grade VUR in 2 (8 %). Median operative time for RALUR-EV without tapering was 230 minutes (IQR 191,270; n=22) compared with RALUR-EV with tapering which was 250 minutes (IQR 195,461; n=3). Median LOS was 2 days. Ureteral stenting was used in 22 patients (88 %) for a median of 6 weeks (IQR 4,8.5). 3 patients (12 %) developed febrile UTIs when they had stents in place and 4 (16 %)developed febrile UTIs after stent was removed. There were no other complications. Postoperatively RBUS has shown significant improvement in all patients with one patient having new vesicoureteral reflux diagnosed after urinary tract infection.

CONCLUSIONS

Robot assisted laparoscopic approach for dismembered reimplantation with or without ureteral tailoring yields excellent results and is comparable to other approaches.

09:34 – 09:46

Discussion

S15: OBSTRUCTION & HYDRONEPHROSIS 2

Moderators: Anthony Herndon (USA), Alex Turner (UK)

ESPU Meeting on Friday 13, April 2018, 10:16–10:50

10:16–10:19

S15-1 (PP)

OUTCOMES FOLLOWING PRIMARY ENDOSCOPIC DECOMPRESSION OF DUPLEX SYSTEM URETEROCELE AND PREDICTORS OF LONGTERM SYMPTOMOLOGY

Caroline Mary MACDONALD[1], Robert SMALL[2], Martyn FLETT[2], Salvatore CASCIO[2] and Stuart O'TOOLE[2]

1) The Royal Hospital for Children, Paediatric Surgery, Glasgow, UNITED KINGDOM - 2) The Royal Hospital for Children, Paediatric Urology, Glasgow, UNITED KINGDOM

PURPOSE

Advocates of primary endoscopic decompression (PED) and upper tract or primary reconstructive surgeries for duplex system ureterocele (DSU) quote rates of reoperation as evidence to support surgical preference. We aim to report long-term functional and symptomatic outcomes following PED and perform analysis to predict outcomes.

MATERIAL AND METHODS

We performed a retrospective review of all children with DSU between 2004–2014, with minimum 2.5 years follow up. We perform 'selective' PED and follow up surgery based on symptomology. Demographic and diagnostic variables were collected including: antenatal diagnosis, age at presentation and surgery, weight, comorbidity, VUR status, bladder dysfunction, intra/extravesicular, hydroureteronephrosis and upper pole function. Primary outcomes were: successful PED, worsening moiety function, further surgery indicated (FSI), voiding dysfunction (VD) and treatment free status (TFS). Demographic and diagnostic variables were compared with primary outcomes to test association (chi^2 and spearman rho correlation).

RESULTS

We identified 41 cases of DSU, with a 77 % successful PED decompression rate. At mean follow up 6 years (range 2.5–10.2): 17.1 % showed worsened renal function, 63.4 % required FSI and 36.6 % had some VD but overall 61.5 % were treatment free.

We compared the data before and after 2011, when routine fetal anomaly scanning was introduced, and showed association only with improved TFS (42 % vs 80 % p=0.02) at 8.5 and 4.1 years follow up respectively. Presentation in urosepsis was associated with later VD, female sex with FSI (OR 13.7 p=0.001) and lower TFS, and earlier age of intervention with VD and lower TFS.

CONCLUSIONS

DUS is associated with long-term ongoing treatment in 38.5 % but this improves with time. Predictors of symptomology include female sex, presenting in urosepsis and earlier age of surgical intervention.

10:19–10:22

S15-2 (PP)

ENDOSCOPIC BALLOON DILATATION IN PRIMARY OBSTRUCTIVE MEGAURETER IN INFANTS: LONG-TERM RESULTS

Isabel CASAL BELOY, Miriam GARCÍA GONZÁLEZ, Ivan SOMOZA ARGIBAY and Teresa DARGALLO CARBONELL

Children's Hospital "Teresa Herrera-Materno Infantil", A Coruña, Pediatric Surgery. Urology Division., A Coruña, SPAIN

INTRODUCTION

The endoscopic balloon dilation is a new minimal invasive alternative for the treatment of Primary Obstructive Megaureter in infants. This is an effective procedure in short-term follow-up but few studies have shown its long-term efficacy. The aim of this study is to evaluate the long-term results of ballon dilation.

MATERIAL AND METHODS

We performed a retrospective review of patients treated with balloon dilation. The indications for surgery were: worsening of the hydronephrosis, renal function impairment and recurrent urinary tract infections. All patients were followed 6 months after endoscopic procedure with ultrasonography, MAG-3 renogram and voiding cystouretrography. Annual ultrasound was performed until now.

RESULTS

We treated 13 patients, (median age 9 months, range 2 to 24). 10 patients had prenatal diagnoses of hydronephrosis and in 3 the diagnoses was made after a urinary tract infection. No intraoperative complications were observed. 1 double-J stent was replaced after endoscopic procedure for malpositioning. 4 patients developed an urinary tract infection after surgery. All patients had non-obstructive MAG-3 diuretic renogram 6 months after surgery. The mean washout on the renogram and the ultrasound pelvic diameter showed pre and postoperative statistical differences. All patients maintained their results without recurrence in the long-term. The median of follow-up was 10.3 years, (Range: 4.7 to 12.2).

Outcomes			
	Preoperative	6 months after surgery	P-value(Wilcoxon test)
Median distal ureter diameter (mm)	15 (range: 7-22)	4 (range: 3-9)	P < 0.001
Median pelvis diameter (mm)	20 (range: 13-25)	11 (range: 3-15)	P < 0.001
Median DRF (%) MAG-3 renogram	49.7 (range: 29-58)	51 (range: 43-56)	P = 0.249
T ½ (minutes) MAG-3 renogram	73 (range: 25-150)	5.5 (range: 5-20)	P < 0.001

CONCLUSIONS

Balloon dilation can be an effective procedure for the treatment of Primary Obstructive Megaureter in long-term follow-up. More studies are needed to demonstrate these results.

10:22–10:25

S15-3 (PP)

EVOLUTION AND POSTNATAL OUTCOME OF PRENATALLY-DIAGNOSED SIMPLE RENAL CYSTS

Stavros LOUKOGEORGAKIS[1], Elisabetta SANNA[2], Ingrid DERWIG[2], Gauri PARAMASIVAN[2], Christoph LEES[2] and Marie-Klaire FARRUGIA[1]

1) Chelsea and Westminster Hospital, Paediatric Urology, London, UNITED KINGDOM - 2) Queen Charlottes and Chelsea Hospital, Centre for Fetal Care, London, UNITED KINGDOM

PURPOSE

To establish pre- and post-natal evolution and outcome of prenatally-diagnosed simple renal cysts.

MATERIAL AND METHODS

We retrospectively reviewed all prenatally-diagnosed simple renal cysts (2005–2016) in a single tertiary fetal centre, using the Astraia Obstetrics database (Astraia Software Gmbh). The diagnosis was based on the presence of a solitary, non-septated non-commiunicating cyst in an otherwise normal kidney. Gestational age (GA), location and size of the renal cyst at diagnosis and subsquesnt scans were recorded. Fetuses were delivered locally. Following ethical approval, we reviewed postnatal scans and patient records at each hospital.

RESULTS

Renal cysts were indentified in 31 fetuses at a median GA of 23 (20–36) weeks. Cysts were bilateral in 3 fetuses (9.6 %) and unilateral in 28 fetuses (90.4 %) with equal left/right distribution. Median maximum diameter was 15 (4–35) mm. Antenatal cyst resolution was observed in 4 fetuses (12.9 %), and the diagnosis was modified in 5 (16.1 %) to hydronephrosis (3), adrenal mass and echogenic kidney. Postnatal follow-up data was available for the remaining 22 patients. Eight cysts (36.4 %) resolved; whereas 3 (13.7 %) persisted and were managed conservatively for a median 51 (39–60) months. In the remaining 11 (50 %), postnatal findings were MCDK (3), duplex kidney with dilated upper moiety (3), adrenal mass (3) patients and unilateral renal agenesis (2).

CONCLUSIONS

Our study suggests caution when counselling for prenatally-diagnosed renal cysts as in over half the cases postnatal investigation reveals alternative diagnoses such as a cystic duplex or adrenal mass which may require further investigation. It is also interesting to note that the cyst may be a part of an involuting MCDK resulting in postnatal renal agenesis.

10:25–10:34

Discussion

10:34–10:39

S15-4 (VP)

ROBOT-ASSISTED RESECTION OF ECTOPIC KIDNEY: SAFE AND EFFECTIVE

Achilles PLOUMIDIS[1], Marjan WATERLOOS[2], Athanasios PAPPAS[1], Steven WEYERS[3], Piet HOEBEKE[2] and Anne-Françoise SPINOIT[2]

1) Athens Medical Centre, Urology, Athens, GREECE - 2) Ghent University Hospital, Urology, Ghent, BELGIUM - 3) Ghent University Hospital, Gynecology, Gent, BELGIUM

PURPOSE

Failure of migration of the kidney during early embryonic life results in an ectopic kidney, with an incidence varying from 1/500 to 1/1200.
This video illustrates robotic resection of ectopic pediatric kidney.

MATERIAL AND METHODS

A 7-years-old girl was referred to our center with a history of recurrent urinary tract infections with vaginal discharge. Ultrasound demonstrated a unique orthotopic kidney on the right-hand side, confirmed by DMSA scan showing 100 % of function right. Additional imaging was realized with a T2-weighted magnetic resonance imaging showed a dysplastic ectopic kidney located in the pelvis, with ureter draining into the vaginal wall.

RESULTS

The patient was positioned in a classical robot-adapted lithotomy position, with indwelling bladder catheter. The camera-trocar was placed in the umbilicus and two additional 8 mm ports were inserted at the mid-clavicular line bilaterally, with an additional 5 mm port on the left-hand side. A side-docking position was adopted, allowing thereby further cystoscopic and vaginosopic evaluation during the procedure. A uterus bicornis was found, with a normal vaginal opening for the age. After opening of the peritoneum medially from the internal iliac vessel, the ectopic kidney was progressively dissected. The ectopic ureter was dissected towards it drainage in the vaginal wall, where it was sutured and resected. The dysplastic kidney and ureter were removed trough the right iliac port. Dissection deep into the pelvis towards the vaginal wall is aided by the robotic dexterity and facilites complete resection of the structure, avoiding to leave an ureteric stump into the vaginal wall. The postoperative period was uncomplicated, and the child could be discharged on the first day after surgery.

CONCLUSIONS

Robot-assisted surgery is a safe and effective for resection of ectopic kidneys with ectopic ureter. Dissection up until the vaginal wall in children is aided by robotic dexterity.

10:39 – 10:44

S15-5 (VP)

2 CASES OF LAPAROSCOPIC TRANSURETEROURETEROSTOMY IN CHILDREN

Yong Seung LEE[1], Sang Woon KIM[1], Sung Ku KANG[1], Sung Hoon KIM[2] and Sang Won HAN[1]

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PURPOSE

Trans-uretero-ureterostomy (TUU) has been known to be a safe and reliable procedure in patients with complex ureteral problems. However, it was rarely reported with minimal invasive surgery in children. We report the feasibility and short term results of laparoscopic TUU in children.

MATERIAL AND METHODS

Transperitoneal laparoscopic TUU was performed in 2 children. Twelve-year-old male patient had an iatrogenic complete ureter obstruction with rupture developed one month after laparoscopic appendectomy. The other 5-year-old male patient had a history of Duhamel operation for congenital megacolon and left distal ureter obstruction developed thereafter. Ureter catheter was inserted in the beginning of each case into the recipient ureter. After ureter isolation, Sub-peritoneal tunnel was made from donor side to the recipient side. Then, donor ureter was passed to the recipient ureter. The anastomosis was performed with interrupted 6 – 0 sutures. Ureteral stent was placed for 6 weeks after operation.

RESULTS

All Two cases were successfully performed. Total operation time was 4 and 5.5 hours, respectively. Postoperative course was unremarkable without urinary tract infection, flank pain, or hydronephrosis during follow up period.

CONCLUSIONS

laparoscopic TUU is feasible in children with better cosmesis. It could be applied in selected cases with complex ureteral problems.

10:44 – 10:50

Discussion

S16: RENAL TRANSPLANTATION

Moderators: Wouter Feitz (Netherlands), Simona Gerocarni-Nappo (Italy)

ESPU Meeting on Friday 13, April 2018, 13:30–13:54

13:30–13:33

S16-1 (PP)

LONG-TERM OUTCOME OF PEDIATRIC RENAL TRANSPLANT IN BOYS WITH POSTERIOR URETHRAL VALVES (PUV)

Doris HEBENSTREIT[1], Alexander SPRINGER[2], Karin HEBENSTREIT[3], Dagmar CSAICSICH[4], Thomas MÜLLER-SACHERER[4] and Gabriela BERLAKOVICH[5]

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PURPOSE

Posterior urethral valves (PUV) cause congenital lower urinary tract obstruction and in 30–50 % leads to ESRD. There is conflicting data on outcome of renal transplantation (RT) in PUV. In this study we sought to determine, whether there is a difference in the outcome of RT in PUV compared to control group (NU).

MATERIAL AND METHODS

In this retrospective long-term study we analyzed possible factors that influence graft function and graft survival. Between 1995 and 2016 there were 149 RT. There were 27 PUV patients, who received 29 grafts. 30 control group patients received 31 renal grafts due to NU diagnosis.

RESULTS

There was no statistically significant disparity in graft function and estimated graft survival. Graft failure occurred in 23.1 % of the PUV patients and 34.5 % patients in the NU group. In regression analysis only age at transplantation and donor age had an impact on the renal function. There was a higher incidence of UTI in the PUV group. Bladder dysfunction did not play a major role in outcome. Vesicostomy was favorable to other forms of pretransplant intervention in regards of graft function.

CONCLUSIONS

RT in PUV patients is successful with the same outcome as in NU patients. Good long-term outcomes can be expected. Bladder dysfunction does not have a major impact on graft function and survival in our cohort. It seems that the type of pre-transplant surgical procedures may influence outcome and we recommend vesicostomy.

13:33–13:36

S16-2 (PP)

OUTCOME OF KIDNEY TRANSPLANTATION FROM YOUNG PEDIATRIC DONORS (AGED LESS THAN 6 YEARS) TO YOUNG SIZE-MATCHED RECIPIENTS

Romy GANDER[1], Marino ASENSIO[1], José Andrés MOLINO[2], Gloria Fatou ROYO[1], Montserrat AGUILERA PUJABET[3], Luis Enrique LARA[4], Gema ARICETA[4] and Manuel LOPEZ[3]

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PURPOSE

Pediatric donation is underutilized due to presumed increased risk of vascular thrombosis (VT) and graft loss. Using young pediatric donors (YPD) for young pediatric recipients (YPR) is suggested to be even at greater risk and therefore precluded in many centers. The aim of this study was to analize the outcome of Kidney Transplantation (KT) from YPD to age-matched YPR.

MATERIAL AND METHODS

Retrospective study of 118 pediatric KT performed between January 2007 – July 2017. We identified KT with YPD (considered as those aged <6 years) and age-matched YPR. Data were collected regarding donor and recipients characteristics, surgical and urological complications, graft loss and outcomes.

RESULTS

Forty cases were identified (33.89 %). Mean recipient and donor age was 2.9 years (SD:1.68) and 2.24 years (SD: 1.5), respectively. Mean recipient and donor weight was 12.7 kg (SD: 4.1) and 13.7 kg (SD:4.15), respectively. Thirty (75 %) recipients weighed <15 kg. The most frequent primary renal disease was congenital nephrotic syndrome (13). Nine (22.5 %) had received a previous KT. Three received a combined liver-KT. Eight (20 %) were at high immunological risk and 19 (47.5 %) at high thrombotic risk.

All allografts were implanted extraperitoneally. Major complications requiring reintervention appeared in 7 (17.5 %): 3 VT, 3 bleedings and 1 ureteral necrosis. Remarkably, only 1 surgical complication (VT) was related to graft loss. Regarding to long-term urological complications, 4 (10 %) developed VUR to the graft (all had underlying uropathy).

As a whole 8 patients lost their graft (20 %). Actuarial graft survival at 1,5 – 10 years was 83 %–78 %–78 %, respectively. Mean follow-up was 49 months (SD:38.8).

CONCLUSIONS

We suggest that KT using YPD for age-match YPR yields good results, even in high-risk patients and is associated with good graft survival. In our series, surgical complications were rarely related to graft loss.

13:36–13:39

S16-3 (PP)

PAEDIATRIC KIDNEY TRANSPLANTATION: IMPACT OF DONOR AGE, HLA MATCH, PRA AND PTLD

Anja LINGNAU[1], Beatriz BAÑUELOS MARCO[1], Therese-Marie KOCH[2] and Dominik MÜLLER[2]

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PURPOSE

Renal transplantation remains the treatment of choice for children with end stage renal disease (ESRD).

Since children who receive kidney transplants have a long life expectancy it is particularly important to maximize graft function and graft survival in this population.

The aim of this study was to identify factors associated with both favorable and poor outcomes.

MATERIAL AND METHODS

Our database included 143 paediatric renal transplants up to 21 years of age from January 1997 to December 2013.

We evaluated patients and donors demographic data, number of transplants, HLA-A, B and DR mismatch, infectious parameters such as EBV status, pre-transplant transfusions, transplant status (high-urgency) immunosuppressive therapy, rejection episodes, PRA (pre- and post-transplantation).

RESULTS

Graft survival rates were 92.2 %,85.5 %,71.1 % and 62.1 % after 1,5,10 and 15 years respectively. Chronic rejections were the leading cause of graft loss (42.9 %).

Overall Survival was 99.3 %, 95.2 %, 94.2 %. 90.7 % after 1,5,10 and 15 years respectively. Re-transplantation (p=0.022) and Post-Transplant-Lymphoproliferative-Disorders (PTLD)(p=0.002) are significant parameters for patient survival.

Cox regression analysis showed that the number of HLA-DR mismatches (0–5 vs 6–10) were not associated with lower graft survival (p=0,186).

Survival graft rates using donors aged,<10, 10–39, 40–59 or >60 years were statistically significant (log rank p<0,001).

PRA were performed in 40 patients (28 %) post- transplantation and showed association with lower graft survival (p<0,001).

CONCLUSIONS

We recommend that kidneys from deceased donors up to 59 years be allocated to children, an acceptable HLA-A_B_DR match be attempted in patients with relatively common HLA phenotypes to reduce the risk of posttransplant non-Hodgkin lymphoma, which remains one of the most important mortality factors.

To conclude, PRA is an essential test for the work-up of ESRD patients and may be used for monitoring of sensitization. PRA levels may be determined by the individual's own immunogenicity in addition to the well-documented causes.

13:39–13:51

Discussion

S17: EXTROPHY-EPISPADIAS COMPLEX 1

Moderators: Ashraf Hafez (Egypt), Wolfgang Rösch (Germany)

ESPU Meeting on Friday 13, April 2018, 14:24–15:02

14:24–14:27

S17-1 (PP)

★ ONE-STAGE COMBINED DELAYED BLADDER CLOSURE AND KELLY RADICAL SOFT-TISSUE MOBILISATION FOR BLADDER EXSTROPHY

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PURPOSE

The radical soft-tissue mobilisation (RSTM or Kelly repair) for bladder exstrophy (BE) has been so far reported as part of a two-stage strategy after successful neonatal closure. With the emerging concept of delayed closure of BE, we investigated the feasibility of one-stage delayed bladder closure combined with RSTM in infants with classical BE.

MATERIAL AND METHODS

Prospective inclusion and follow-up of consecutive newborns with BE in an 18-month period (2016–2017). Repair was performed (ideally at the age of 3 months) by the same surgeon at 4 collaborating institutions.

Technique included RSTM with ureteric reimplant, cervicoplasty, penile reconstruction, and bladder closure, without pelvic osteotomies. Midline closure was performed with transposition of rectus abdominis muscles whenever necessary. Postoperative immobilisation was maintained for 21 days. Postoperative follow-up was based on clinical examination and renal US at 1–3–6–12 months, and EUA+endoscopy at 4 and 12 months postoperatively.

Main outcome criteria was postoperative bladder dehiscence at 3 months. Secondary outcome measures included urethrocutaneous fistula, stenosis, and UTIs.

RESULTS

11 children (8 M/3F) were included in this study and underwent surgery at a median age of 15 weeks [2–32] for those with intentional delayed surgery (n=8) and 43 wks [14–104] for those presenting late (n=3). Median follow-up was 10 months [4–20].

No case of bladder dehiscence was observed after all cases reached the 3 months end-point. Three children presented postoperative urethro-cutaneous fistula, all of which closed spontaneously in 3–6 weeks. One boy presented symptomatic urethral stenosis (orchi-epididymitis and UTIs) successfully treated with 3 sessions of endoscopic balloon dilatation (follow-up of 11 months after the last session). No case of glans ischemia was observed. Minor skin dehiscence was successfully treated conservatively in 3 cases.

CONCLUSIONS
The Kelly repair can be safely combined with delayed BE closure, without demonstrable risk of bladder dehiscence.

14:27 – 14:30

S17-2 (PP)

TRANSPOSITION OF RECTUS ABDOMINIS MUSCLES ALLOWING TENSION-FREE MIDLINE CLOSURE AFTER BLADDER EXSTROPHY REPAIR. A PRELIMINARY STUDY

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PURPOSE
Tension-free abdominal and pelvic closure is a major factor for adequate healing after bladder exstrophy repair. It has been reported that pubic approximation may result in compartment syndrome or a kink of pudendal pedicles after complete mobilisation, and therefore contributes to an increased risk of corporal and glans ischemia. We investigated the efficacy of a midline transposition of the rectus-abdominis muscles (TRAM) to ensure tension-free closure after radical soft-tissue mobilisation (RSTM, or Kelly repair) for exstrophy and proximal epispadias repair without osteotomy nor pubic approximation.

PATIENTS & TECHNIQUE
Retrospective study of consecutive cases of bladder exstrophy/epispadias who underwent RSTM with TRAM at 4 collaborating institutions from Apr. 2016 to Sept. 2017.
After full RSTM including cervico-urethroplasty, penile reconstruction, vesico-ureteric reimplantation, and bladder closure, the rectus abdominis were lifted from the iliopubic branches with a strip of periosteum, and mobilised medially to allow midline closure. No pelvic osteotomies were performed. Outcome criteria included abdominal wall breakdown, internal hernia, wound infection, and bladder dehiscence.

RESULTS
During the 18-month study period, 23 cases of RSTM+TRAM were performed in 16 bladder exstrophy cases (10 combined delayed bladder closure+RSTM, and 6 redo bladder-closure+RSTM, 12M/4F), and 7 proximal epispadias (4M/3F). With a median follow up of 11 months [3 – 18], no abdominal wall dehiscence was observed. Among the 16 bladder exstrophy cases, none presented with bladder dehiscence. Internal incisional hernia was observed in 3 cases, through the space between the inferior edge of the muscles and the pubic branch, of whom 1 required secondary repair. Minor skin wound infection or dehiscence was treated conservatively in 6 cases.

CONCLUSIONS
Midline transposition of the rectus abdominis muscles allows tension-free closure of the abdominal wall after exstrophy repair with limited morbidity.

14:30 – 14:33

S17-3 (PP)

PUBIC SYMPHYSIS APPROXIMATION DURING BLADDER EXSTROPHY CLOSURE WITH ABSORBABLE VS NON ABSORBABLE SUTURE

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PURPOSE

Traditionally, non-absorbable suture has been used to approximate the pubic symphysis during bladder exstrophy closure (BEC); erosion of suture through the urethra/bladder neck being a well-known complication. The authors compared success and complications of BEC using absorbable vs non-absorbable suture for pubic symphysis approximation.

MATERIAL AND METHODS

Data was prospectively collected on consecutive exstrophy patients treated in one single institution between 2013 and 2017. Data measured included: age at surgery, pubic diastasis, use of osteotomy, type of pelvic immobilisation, success of closure, postoperative complications including need for intrapubic suture removal at follow-up cystoscopy. Two groups were identified: A) use of non-absorbable suture for pubic symphysis approximation, B) use of absorbable suture. Outcomes were compared with Fisher's test (categorical data), t-test (continuous data), a p-value of <0.05 was considered significant.

RESULTS

Fourty patients underwent BEC, 24 (4 female) in group A and 16 (9 female) in group B. Median age at BEC was 6.8 months (IQR5.5 – 7.2) in group A and 7.6 months (IQR5.5 – 8.8) in group B (p=0.2). Median pubic diastasis was 4.6 cm (4.4 – 5.1) in group A and 4.5 cm (4.0 – 5.4) in group B (p=0.8). All patients received pelvic osteotomies with external pelvic fixation. All patients had a successful BEC. In group A, 38 % of patients were found to have the intrapubic stitch migrated into urethra/bladder neck at follow-up cystoscopy. 3 of these patients required excision of granuloma or stones that had formed around the suture. No intrapubic stitch was found at follow-up cystoscopy in group B (p=0.006).

CONCLUSIONS

Use of absorbable intrapubic sutures at time of BEC in the authors' hands does not affect success of closure but prevents the morbidity associated with stitch erosion.

14:33 – 14:42

Discussion

14:42–14:47

S17-4 (VP)

ABDOMINOPLASTY WITHOUT OSTEOTOMIES USING GROIN FLAPS TO CLOSE THE ABDOMINAL WALL DEFECT IN THE MANAGEMENT OF EXSTROPHY-EPISPADIAS COMPLEX

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PURPOSE

We demonstrate the GROIN FLAP technique to close the abdominal wall of children with exstrophy-epispadia complex without osteotomy and without radical soft tissue mobilization. The advantages over current techniques for complete repair are the small risk of penile tissue loss and the avoidance of osteotomies.

MATERIAL AND METHODS

Abdominal wall repair consists in using hypogastric skin and rectus and obliquus externus abdominalis muscle aponeurosis flaps. These groin flaps are rotated to the midline resulting in a very strong abdominal wall support. Groin flaps are made of the rectus anterior aponeuroses rotated medially, flipped over, and sutured with prolene sutures to close the defect. By rotating the facial flaps medially, complete reinforcement of the abdominal wall to the level of the pubic bone is achieved. This permits the abdominal closure maintenance without tension.

RESULTS

During the last 30 years, GROIN FLAP was applied to 128 patients with bladder exstrophy that came from all over the country. Most of these patients returned to their home areas making difficult their follow up. However, we have 44 cases that have regular clinical visits. Mean follow-up was 10.3±4.5 years (2y8 mos–16y). Successful closure was achieved in 43 patients (97.7 %) as a single procedure; one patient had complete wound dehiscence and needed another reconstruction (2.2 %). Four patients (9.1 %) presented abdominal hernias that needed surgical management.

CONCLUSIONS

One-staged reconstruction using GROIN FLAPS has advantages over the traditional approaches to bladder exstrophy. It reduces the surgical steps and facilitates the closure of the abdominal wall without the need of osteotomies and consequent immobilization during the postoperative period. It is feasible at any age and can be also very useful as a rescue technique even after previous failed procedures. Finally, It minimize the number of surgeries.

14:47 – 14:50

S17-5 (PP)

ANATOMY OF THE BONY PELVIS IN PATIENTS WITH CLASSICAL BLADDER EXSTROPHY: A SURVEY OF THE MULTICENTER GERMAN CURE-NET

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PURPOSE

Although pelvic closure is important for the initial operative management of classical bladder exstrophy (CBE), there is a lack of long-term outcome measures in regards of pelvic and hip morphology.

MATERIAL AND METHODS

In the German multicenter network for congenital uro-rectal malformations (CURE-Net) database symphysis diastasis width was determined either radiologically or intraoperatively in 82 CBE individuals. Pelvic radiographs, available in 67 CBE patients, were screened for pathological hip findings such as hip dysplasia or coxarthrosis.

RESULTS

The median symphysis diastasis was 5 cm (IQR 4 – 6). Radiologically measured symphysis width was available in 48 individuals (67 % male, median 12 years; 33 % female, median 11 years). Hereby, females showed a significantly wider diastasis than males (median 6 cm vs. 4 cm; p = 0.02). Subgroup analysis revealed no statistically significant difference regarding previous symphysis approximation or the kind of initial reconstruction. Radiographs showed hip dysplasia in 12 individuals (18 %; 5 female, 7 male; median age 15 years), the majority of them (83 %) had undergone symphysis approximation in childhood (symphysis diastasis median 4.5 cm (IQR 4 – 6)). Two further male adults 50 years and older (3 %) presented with coxarthrosis; both had symphysis rediastasis of 4 cm after previous approximation.

CONCLUSIONS

It is known fact that symphysis diastasis persists in the long-term, even after symphysis approximation. Females with CBE have a significantly wider symphysis diastasis suggesting a gender-specific influence of their pelvic shape. Hip dysplasia and coxarthrosis may occur in a considerable amount of CBE patients. Therefore, hip complaints should be adequately diagnosed and treated.

14:50–14:53

S17-6 (PP)

INGUINAL HERNIA WITH BLADDER EXSTROPHY (BE): MULTICENTRIC EXPERIENCE

Alfredo BERRETTINI[1], Paolo CAIONE[2], Gianantonio MANZONI[1], Laura DEL PRETE[2] and Marco CASTAGNETTI[3]

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PURPOSE

Inguinal hernias are common in BE patients but there is no consensus on the ideal "timing" and surgical strategy for its repair and whether repair during initial bladder closure (IBC) might prevent risk of complications related to the hernia later in life. Multicentric experience in three tertiary centers is reported.

MATERIAL AND METHODS

We retrospectively reviewed data of 36 patients (30 male - 83 %) who underwent primary BE repair from 2009–2016. Patients who had undergone initial surgery at other centers were excluded.

RESULTS

Hernia was repaired during IBC in 9/36 (25 %) patients at a median age of 47 (0–598) days. A preperitoneal approach was used in 7/9 (77 %) patients, a canalicular or sub-canalicular approach in 1 patient each respectively. One patient developed unilateral testicular atrophy after bilateral sub-canalicular approach. 13/36 (36 %) patients underwent a delayed hernia repair at a median age of 475 (16–1107) days including 11 undergoing an inguinal repair and 2 a laparoscopic approach. In 14 cases, including all the 6 females, initial hernia repair was not performed. Of these, 4/8 males (50 %) needed urgent surgical exploration for incarceration at a median 174 (45–329) days from IBC. In none of the patients, a hernia recurrence was observed after a follow-up of 42 months(13–117).

CONCLUSIONS

Hernia repair during IBC is an effective option and a preperitoneal approach is safe. We observed 1 testicular atrophy after one inguinal hernia repair. Delayed surgery is feasible but further increases the number of surgeries and the risk of hernia incarceration is high in the untreated males. Recurrence risk is low in all of patients.

		N.	Gender/ Median Age (days)	Surgical approach	Complications	Incarceration (N)	Recurrence
Surgical management	Contestual repair	9	9 M/12,4	6 Preperitoneal			No
				2 inguinal	1 Unilat testicular atrophy	1 (controlateral side)	No
				1 mixed			
	Delayed	13	13 M/475	11 inguinal 2 laparoscopic			No
	No hernia	14	8 M			4 (50 %)	No
			6 F				No

14:53–15:02
Discussion

S18: EXTROPHY-EPISPADIAS COMPLEX 2

Moderators: Marc-David Leclair (France), Raimondo Maximilian Cervellione (UK)

ESPU Meeting on Friday 13, April 2018, 15:02–15:34

15:02–15:07

S18-1 (LO)

MANAGEMENT OF FAILED EXSTROPHY CLOSURE: A 50 YEAR EXPERIENCE

Matthew KASPRENSKI, Karl BENZ, Mahir MARUF, John JAYMAN, Heather DI CARLO and Johan GEARHART

Johns Hopkins Hospital, Johns Hopkins Medical Institutions, Division of Pediatric Urology, James Buchanan Brady Urological Institutions, Baltimore, USA

PURPOSE

This study investigates factors that contribute to a successful repeat bladder closure and explores the effect of failed closures on continence status in patients with classic bladder exstrophy (CBE).

MATERIAL AND METHODS

The authors reviewed a prospectively maintained institutional database of 1311 exstrophy-epispadias complex patients for CBE patients with a failed primary bladder closure from 1965–2017, who have consequently undergone a repeat closure. Our primary objective was to determine factors associated with successful repeat closure.

RESULTS

A total of 170 patients had at least one repeat closures following a failed primary closure (115 male/55 female). The success rate was 126/170 (74.1 %) for all second closures, 29/42 (69.0 %) for all third closures, 9/12 (75 %) for all fourth closures, and 2/3 (66.7 %) for all fifth closures. With continued closure attempts, 166/170 (97.6 %) patients were successfully closed. Fifty (29.4 %) osteotomies were performed during the 170 failed primary closures, while 128 (75.3 %) osteotomies were done during the 170 second closures and 27 (64.3 %) osteotomies were done during the 42 third closures. Seventy-four of ninety-six (77.1 %) patients achieved urinary continence. Continence was achieved in thirteen of twenty-three (56.5 %) patients with a BNR alone, 12 of 14 (85.7 %) patients with BNR with augment and/or stoma, and 50 of 57 (87.7 %) patients with a continent urinary diversion (p=0.010).

CONCLUSIONS

A successful repeat closure is possible in the majority of cases, especially when used in conjunction with osteotomy. A combined anterior-posterior osteotomy approach was associated with the highest success rate during repeat closure. Continent urinary diversion yielded the highest continence rate.

15:07–15:10

S18-2 (PP)

LONG TERM OUTCOMES OF MALE EPISPADIAS

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PURPOSE

Isolated male epispadias is rare with a reported incidence of 1 in 117,000. We present a series of 30 male patients presenting with primary epispadias between 1989–2002. We looked at the number of surgical procedures undertaken, continence and sexual function.

MATERIAL AND METHODS

We looked at Male primary epispadias patients from our database who had gone through transition into the Adolescent service. This was a retrospective review looking at age of presentation, age of primary surgery, need for further surgery, continence and sexual function. The information was based on outpatient documentation.

RESULTS

We identified 58 patients and obtained follow-up data in 30 (sub-symphyseal 21, penile 9). Follow-up ranged from 15–27 years. Primary surgery took place between 9–48 months. 22 had Cantwell-Ransley repair, 3 had a tumble-type repair, 1 had a reversed Duckett repair and 4 had their primary surgery at another centre. 28 patients needed further surgery during follow-up: continence procedures (26) and revision surgery (12). Continence procedures included injection of bulking agents, bladder neck reconstruction and Kelly procedure. At follow-up 15 were continent requiring no protection, 9 reported stress leakage, 6 voided using a Mitrofanoff, 4 of these had an ileocystoplasty. 19 patients had documentation on feelings regarding cosmesis; 17 expressed concern. 21 patients had documentation about sexual function; all 21 had normal erections with 6 reporting chordee and 9 reporting retrograde ejaculation. 4 patients had surgery in adulthood for cosmesis. No patients were recorded to have fathered any children, 2 had sought fertility advice.

CONCLUSIONS

There are very few studies looking at the long-term follow up of patients with primary epispadias. We have demonstrated here favourable outcomes which will be useful for clinicians in counselling patients and their parents.

15:10–15:16

Discussion

15:16–15:19

S18-3 (PP)

LONG TERM OUTCOMES FOR XY CLOACAL EXSTROPHY RAISED AS FEMALE

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PURPOSE

Cloacal exstrophy is a complex anomaly with overt pelvic, bladder, genital and bowel deformities. Other associated anomalies include the spine and kidneys. Surgical advances have meant survival for these patients. Historically, those with an XY karyotype were often felt to have such major genital deformity - they underwent gonadectomy, genitoplasty, and were raised female. This paper examines the outcomes for this unique and complex cohort.

MATERIAL AND METHODS

A retrospective review of patient records was performed of XY cloacal extrophy cases at UCLH (2007–2017). Outcomes related to previous surgery, renal function and gender reassignment were reviewed.

RESULTS

18 patients were identified. 2 were lost to follow-up, data for the 16 remaining patients were analysed – one had no data for childhood surgery. Mean age at review was 27.7 years (22–38) with all raised female. All had an enterocystoplasty, 9 had a Mitrofanoff channel (4 required revision). 8 had a childhood bowel vaginoplasty, 7 required revision. 2 further chose vaginoplasty in early adulthood. 2 had bladder stones, 1 nephrolithiasis. Median creatinine was 88 umol/l (range 48–253) – 7 had chronic renal failure, 1 patient underwent renal transplant. 2 patients had reassigned to male gender.

CONCLUSIONS

These patients represent early success of surgical innovation leading to the current expectation of survival with a rare and complex anomaly. Many have undergone complex procedures requiring later revision, particularly mitrofanoff channel. There were poor outcomes from ileal vaginoplasty in childhood. Renal function requires close monitoring for CKD progression, gender reassignment is a potential issue.

15:19 – 15:22

S18-4 (PP)

CONTINENCE OUTCOME IN PATIENTS WITH EXSTROPHY-EPISPADIAS COMPLEX: A SURVEY OF THE MULTICENTER GERMAN CURE-NET

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PURPOSE

To gain continence is a major aim in reconstruction of the exstrophy-epispadias complex (EEC). However, patients outcome perspective cannot be clearly determined, as continence rates and definitions reported in literature derived from monocentric small studies vary widely.

MATERIAL AND METHODS

Participants with EEC, 4 years or older, recruited by the German multicenter network for congenital uro-rectal malformations (CURE-Net) from 2009 to 2012 were asked to fill in micturation protocolls and a self-designed questionnaire about urinary and fecal continence, voiding habits and symptoms. Continence definition was adapted to the ICCS terminology.

RESULTS

Self-reported data of 102 patients (median 13 years; 60 % male, 81 % classical bladder exstrophy) were analyzed. 94 participants were either reconstructed in a single-stage or a staged approach, among them 34 % having undergone further procedures, such as augmentations and stomata. 8 individuals (8 %) had a primary urinary diversion. 33 % reported continuous urinary continence, 29 % described themselves as intermittent incontinent and 28 % as continuous incontinent. 61 % of all participants required diapers. Subgroup analysis revealed no statistically significant difference regarding the phenotype (p=0.84) and the additional procedures (p=0.49). 14 % of participants (median age 17 years) reported some degree of stool incontinence, 79 % of them with the need for pads or diapers.

CONCLUSIONS

In a nationwide multicenter survey only one third of EEC participants reported continuous urinary continence. 14 % described fecal incontinence. These independent outcome data advocate the urgent necessity of improvement of the urinary and fecal continence status in patients with EEC at any age.

15:22–15:25

S18-5 (PP)

★ BLADDER EXSTROPHY AND THE RISK OF URINARY BLADDER CANCER IN SWEDEN 1952-2012

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Astrid Lindgren Children's Hospital, Pediatric Surgery and Urology, Stockholm, SWEDEN

PURPOSE

Several reports suggest that exstrophied bladders have a significantly higher risk for developing bladder cancer. The aim of this study was to evaluate the risk in a Swedish register study.

MATERIAL AND METHODS

A matched designed cohort study was performed by linkage-analysis of Swedish national registers based on the total population born 1952–2012; the National cancer register, the Cause of death register and the National patient registers were used. After ethical permission we included analyses of medical records. Inclusion criteria were: born in Sweden with classical bladder exstrophy according to ICD coding. We used 5 controls per patient matched for age and sex.

RESULTS

We identified 180 validated cases, 98 males and 82 females, with bladder exstrophy. Two males and 2 females, were diagnosed with urinary bladder cancer comparing to none in controls. The mean age at diagnose was 39 years. Hematuria was the main symptom and all had had cystoscopy performed 1–4 years prior to diagnose. Two were classified according to tumor grading systems. Both presented with grade T4, were surgically treated with cystectomy, developed metastasis within a few weeks-months, and died within 13 months of first symptoms. In the age group of 35–61, in total 76 cases, the risk of urinary bladder cancer was 5.3 %.

CONCLUSIONS

Exstrophy patients have an increased risk of developing bladder cancer at a young age. The cancer seems aggressive. Cystoscopy had been performed in intervals prior to symptoms without detection and only palliative treatment was an option. This warrants further attention for optimizing surveillance programs.

15:25–15:34

Discussion

S19: LOWER URINARY TRACT 1

Moderators: Luke Harper (France), Seppo Taskinen (Finland)

ESPU Meeting on Friday 13, April 2018, 15:54–16:44

15:54–15:57

S19-1 (PP)

★ IS PEAK CREATININE AFTER BIRTH RELATED WITH POST RESECTION BLADDER FUNCTION IN INFANTS WITH POSTERIOR URETHRAL VALVES?

Katerina PRODROMOU[1], Kalpana PATIL[1], Arash TAGHIZADEH[1], Joanna CLOTHIER[1], Anne WRIGHT[2] and Massimo GARRIBOLI[3]

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PURPOSE

In babies born with posterior urethral valves (PUV) bladder and renal function are abnormal. We aimed to assess whether there is a relation between the two in the first months of life.

MATERIAL AND METHODS

We prospectively collected 4-hour voiding observation data post valve resection of all infants (0–3 months) with PUV born between July 2015 and July 2017. Data collected were: bladder capacity (BC), voided volume (VV) and immediate post void residual (PVR) and Peak creatinine (Pcrea). Estimated bladder capacity (eBC) was determined using Capacity (ml) = 7 × weight (kg) (Fairhurst et al. J Paediatric Surg 1991:26:55–7). Bladder capacity was considered abnormal if large or small (>150 % and <65 % eBC respectively). Patients were divided in 2 groups: Pcrea > 80 umol/L and < 80 uml/L. All results given as median (range). Fisher's exact test was used for statistical analysis.

RESULTS

Twenty-one male infants, median age 21 days (5–94) were included. All had 4-hour voiding observation within 7 days (median 1 day) after catheter removal post primary valve resection. Bladder capacity was abnormal in 12 babies (57 %), being large in 10 (47 %) and small in 2 (9.5 %). Eleven babies (53 %) had incomplete bladder emptying. In group 1 (12 patients, 57 %), Pcrea was 157.5 umol/L (99–708). In Group 2 (9 patients, 54 %) Pcrea was 77 (48–80). Nor Bladder capacity (p= 0.39) or incomplete emptying (p= 1) have been found significantly associated with Pcrea.

CONCLUSIONS

Although bladder function immediately post valve resection is found abnormal in the majority of PUV babies, it does not seems to be associated with the renal function.

15:57–16:00

S19-2 (PP)

PREVIOUS CHARACTERISTICS OF THE TREATMENT OF POSTERIOR URETHRAL VALVES AND LOWER URINARY TRACT SYMPTOMS IN ADULTHOOD

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PURPOSE

Lower urinary tract symptoms (LUTS) occur about twice as often in adults treated for posterior urethral valves (PUV) than in normal population. The purpose is to evaluate the factors affecting LUTS in adults treated for PUV.

MATERIAL AND METHODS

LUTS were evaluated with DAN-PSS questionnaire in 78 adult patients treated for PUV in childhood. Symptom scores (SS) were compared with patient characteristics and types of treatment.

RESULTS

Patient median age was at treatment 0.6 (range 0–11.5) years and at investigation 35 (range 16–57) years. Median total-SS was 1 (IQR 0–5, range 0–18). Patient age at investigation and total-SS were correlated (R=0.220, p=0.032), but primary creatinine level and total-SS were not (R=0.260, p= 0.081). 18 patients who had temporary ring type ureterocutaneostoma and 10 patients who had undergone kidney transplantation had similar total-SSs as those without stoma or kidney transplantation (p=0.487 and p=0.944 respectively). Median age for achieving both day and night continence was 6.3 years. Total-SS and the age becoming continent were not correlated (p=0.365 and p=0.679 respectively). In the age group 39-year or more, 19 patients who had had bladder neck incision (BNI), storage-SS was higher than in the remainder 15 patients (1 (IQR 0–5) vs. 0 (IQR 0–0), p=0.030. However, the age at diagnosis was younger among those who had undergone BNI (0.8 (IQR 0.5–4.5) years vs. 5.9 (IQR 4.3–9.1) years, p=0.003).

CONCLUSIONS

LUTS causing bother are rare in adults treated for PUV in childhood. Reasons for LUTS are apparently multifactorial and single reasons are difficult to indicate.

16:00–16:03

S19-3 (PP)

LONG-TERM FOLLOW-UP OF POSTERIOR URETHRAL VALVES AND RISK FACTORS FOR RENAL FAILURE

Anna BUJONS, Arnau SERRA and Erika LLORENS DE KNECHT

Fundació Puigvert, Paediatric Urology, Barcelona, SPAIN

PURPOSE

Posterior urethral valves (PUV) are the first congenital cause of low urinary tract obstruction and urological renal failure. Both the associated congenital renal dysplasia and subsequent urodynamic alterations can condition its evolution. The objective of this study is to describe the long-term evolution of our series and to determine possible prognostic factors.

MATERIAL AND METHODS
A retrospective study of 41 patients diagnosed with PUV from 1984 to 2000 with mean follow-up time of 20 years (33 – 17 years) was performed. Family history, prenatal diagnosis, ultrasound findings, treatment, creatinine and nadir glomerular filtration and presence of VUR were assessed. We reviewed the evolution and appearance of postoperative complications, infections, need for reintervention, presence of lower urinary tract dysfunction, worsening renal function and need for renal transplantation. These results were compared with the urinary clinic and the need for substitution treatment (Pearson's χ^2 test).

RESULTS
11 patients (35 %) presented parameters of renal failure at diagnosis; creatinine nadir of 1.71 mg / dl (1.1 – 3 mg / dL) and glomerular filtration of 59 mL / min / 1.73 m2 (50 – 95 mL/ min / 1.73 m2). Of these, 70 % required renal transplantation. We found a positive association between creatinine nadir> 1 mg / dL and the need for transplantation (p <0.001).
45 % of patients had lower urinary tract dysfunction. Lower urinary tract dysfunction and the presence of vesicourethral reflux were risk factors for renal failure (p <0.001).
We did not find significant differences between the prenatal diagnosis of valves (p> 0.065), presence of pre (p> 0.080) and post-surgery UTI (p> 0.085), number of surgeries (p> 0.100) and need for transplantation.

CONCLUSIONS
The PUV represent a pathology that despite a prenatal diagnosis and correct surgical treatment can evolve into renal failure and transplantation. Lower urinary tract dysfunction, vesicoureteral reflux, and nadir creatinine are risk factors for renal failure.

16:03 – 16:08

S19-4 (LO)

BLADDER FUNCTION AT 5, 10 AND 15 YEARS IN POSTERIOR URETHRAL VALVES (PUV)

Riccardo MANUELE [1], Joanna CLOTHIER [1], Anne WRIGHT [1], Vanessa GUIDI [2], Aurora MARIANI [2], Kalpana PATIL [2], Arash TAGHIZADEH [2] and Massimo GARRIBOLI [2]

1) Evelina London Children's Hospital, Paediatric Bladder Disorders, London, UNITED KINGDOM - 2) Evelina London Children's Hospital, Paediatric Urology, London, UNITED KINGDOM

PURPOSE
Bladder function (BF) in PUV may vary with age. We studied evolution of BF through childhood.

MATERIAL AND METHODS
Retrospective cross-sectional review of non-invasive urodynamics at the age of 5, 10 and 15 years. Data recorded: Bladder capacity (BC) classified as large, normal and small as per ICCS criteria[1]; percentage ratio for BC and expected BC (EBC); uroflow, post-void residuals, lower urinary tract symptoms (LUTS), current bladder treatment (anticholinergics, CIC).
Patients divided into 3 groups according to their age.
Statistical tests performed among the groups:
Anova to evaluate BC/EBC%.
Chi Square for uroflow, bladder emptying, LUTS, bladder treatment and any abnormal feature.

RESULTS
We analysed the studies performed in 133 children between 2008 – 2017; patients with renal transplant (n = 25) and bladder augmentation (n = 13) were excluded.
BC/EBC% does not change through the years (p = 0.1128).
Outcomes of bladder function are similar in the three groups (table 1).

Characteristic/outcome	5 y (n=50)	10 y (n=54)	15 y (n=29)	p
Incomplete emptying	64 % (n=32)	54 % (n=29)	62 % (n=18)	0.5350
LUTS	34 % (n=17)	33 % (n=18)	14 % (n=4)	0.1152
Anticholinergics/CIC	26 % (n=13)	22 % (n=12)	10 % (n=3)	0.2489
Abnormal uroflow	40 % (n=20)	33 % (n=18)	38 % (n=11)	p=0.7730
Any abnormal feature; one or more of above	92 % (n=46)	87 % (n=46)	76 % (n=22)	0.1405

CONCLUSIONS
Bladder function in PUV is abnormal from childhood to puberty with no significant change in the proportion of patients related to capacity, LUTS, need for treatment and uroflow.
1 Austin PF et al. J Urol 2014; 191: 1863–1865

16:03–16:08

S19-5 (LO)

[PRESENTATION GROUPED WITH PREVIOUS] IS BLADDER CAPACITY IN POSTERIOR URETHRAL VALVES (PUV) AT 5, 10 AND 15 YEARS ASSOCIATED WITH EMPTYING AND RENAL IMPAIRMENT?

Riccardo MANUELE[1], Joanna CLOTHIER[1], Anne WRIGHT[1], Vanessa GUIDI[2], Aurora MARIANI[2], Kalpana PATIL[2], Arash TAGHIZADEH[2] and Massimo GARRIBOLI[2]

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PURPOSE
Bladder capacity (BC) in PUV may be abnormal; we studied whether BC is associated with incomplete emptying or impaired renal function.

MATERIAL AND METHODS
Retrospective cross-sectional review of non-invasive urodynamics at the age of 5, 10 and 15 years in boys with PUV.
Data recorded: Bladder capacity (BC) classified as large, normal and small as per ICCS criteria1; percentage ratio for BC and expected BC (EBC); post-void residuals (PVR); iohexol GFR.
Patients divided into 3 groups according to their age.
Statistical tests performed within each group (p statistically significant <0.01):
Chi Square to evaluate BC and incomplete emptying.
Pearson to compare voided volume (VV) and PVR
Pearson to compare BC/EBC% and GFR.

RESULTS
We identified studies from 133 children between 2008–2017; patients with renal transplant (n = 25) and bladder augmentation (n = 13) were excluded.
There is no statistically significant correlation between incomplete bladder emptying and BC in the three age groups (although there appears to be a trend); p=0.10, p=0.08, p=0.05.
VV is not related to PVR: p=0.30 (group 1), p=0.66 (group 2), p=0.48 (group 3).
Furthermore BC does not predict renal impairment: p=0.28 (group 1); p=0.64 (group 2); p=0.31 (group 3).

CONCLUSIONS
Bladder capacity in PUV, either normal or abnormal, does not affect bladder emptying and does not correlate with renal impairment.
1 Austin PF et al. J Urol 2014; 191: 1863–1865

16:08–16:23
Discussion

16:23–16:26
S19-6 (PP)

PRELIMINARY EXPERIENCE WITH INSTILLATION OF TRIAMCINOLONE ACETONIDE INTO THE URETHRA FOR IDIOPATHIC URETHRITIS: A PROSPECTIVE PILOT STUDY

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PURPOSE
Idiopathic Bulbar Urethritis (IBU) is characterised by haematuria +/- dysuria without infection. Symptoms result from inflammation of the bulbar urethra, distal to external sphincter. IBU is difficult to manage and there is no recommended therapy. The aim of the study was to determine whether instillation of triamcinolone acetonide is a useful treatment of IBU and its' associated complications.

MATERIAL AND METHODS
Data was prospectively collected, for 38 months, on 28 consecutive patients presenting with terminal haematuria or blood spotting +/- dysuria to a paediatric urology unit. Visual confirmation of IBU was obtained cystoscopically and 80 mg of triamcinolone was instilled to the inflamed area under direct vision using an open-ended ureteral catheter. Follow-up telephone interviews, to assess symptom persistence and side-effects, were performed at six weeks post-intervention.
Symptoms resolution was the primary outcome. Repeat cystoscopic assessment +/- triamcinolone instillation was recorded, as was the occurrence of complications.

RESULTS
Median age 12 years (range: 9–16). Mean symptom duration 16 months (range: 6–30). Normal baseline laboratory blood tests, urine cultures and ultrasound assessments were seen in all; therefore, none were excluded on the basis of a known pathology. The mean follow-up period was 28 months (range: 4–42).
12 patients (42.85 %) required at least one further treatment. Overall complete or partial resolution was reported in 21/28 (75 %). No side effects were reported.

CONCLUSIONS
This prospective series demonstrates that intra-urethral instillation of triamcinolone seems to be promising treatment option to alleviate inflammatory symptoms in majority of cases of idiopathic urethritis.

16:26–16:29

S19-7 (PP)

PROGRESSION OF THE CYSTOGRAM APPEARANCE OF PUV BLADDERS

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Birmingham Children's Hospital, Department of Paediatric Urology, Birmingham, UNITED KINGDOM

PURPOSE

Cystogram appearance of obstruction in PUV bladders is well recognized, but what happens to this after relief of obstruction? Is this predictive of outcome? We aimed to quantify bladder appearance (using the published SWRD score) prior to initial treatment, then at 6 years age, and correlate this with need for subsequent intervention.

MATERIAL AND METHODS

Boys were identified from a PUV clinic: date of birth, date of initial and subsequent imaging were recorded. Date(s) of later interventions (after initial valve incision), were recorded. Initial and 6-year follow-up appearance were quantified by SWRD score, bladder neck (BN) appearance, VUR were recorded. 3 blinded observers scored bladders, scores averaged. Data was median (interquartile range), analysis by Spearman Correlation, Wilcoxon matched-pairs test, Mann-Whitney U-test, Fisher exact test, $P<0.05$ taken as significant.

SWRD Score	0	1	2
Shape	Normal	Irregular	Grossly Distorted
Wall	Normal	Trabeculated	Grossly Trabeculated
Reflux	None	Non-dilating	Dilating
Diverticulum	Absent	Present	

Niyogi et al, Journal Pediatric Urology; 2017: 13(3), 265.e1-e6

RESULTS

24 boys had initial and follow-up cystograms available. Age at initial cystogram and follow-up was 8(4–45) days, and 6.4(5.1–7.0) years. Later intervention was needed in 9 (Mitrofanoff procedure). Appearance improved from initial cystogram to follow-up, SWRD score 3.3(2.1–5.0) vs. 0.8(0.1–1.0), $P<0.0001$. VUR improved significantly, 0.67(0–2) to 0(0–0), $P<0.001$. 13 BN were open initially, all closed at follow-up, $P<0.0001$.

Initial cystogram appearance was no different in those requiring later intervention vs. no intervention, 3.3(2.3–5.0) vs. 3.0(1.7–5.7), $P=0.8$. However, follow-up appearance was significantly different, 1.0(0.8–3.3) vs. 0.3(0–1.3) respectively, $P<0.01$.

CONCLUSIONS

This report quantified the change in cystogram appearance in PUV bladders: Bladder appearance improved, open bladder necks closed, VUR improved. Early cystogram appearance didn't correlate with late deterioration, but follow-up appearance did.

16:29–16:32

S19-8 (PP)

Y-DUPLICATION OF THE URETHRA (EFFMAN TYPE II A 2)

Bashir AHMED, Philip G RANSLEY, Sadaf ABA UMER KODWAVWALA, Sajid SULTAN and Adeeb Ul Hasan RIZVI

Sindh Institute of Urology & Transplantation, Philip G. Ransley Department of Paediatric Urology, Karachi, PAKISTAN

PURPOSE

We report the surgical management and voiding outcome of 8 cases of "Y" duplication of the urethra.

MATERIAL AND METHODS

Of the fifteen cases of urethral duplication seen between 2007 to 2017. We retrospectively reviewed the prospectively collected records of eight cases who presented with "Y" duplication of urethra (Type IIA2 as per Effman classification). We document their clinical, radiological and cystourethroscopic findings and outcomes. Voiding outcomes were evaluated on the basis of LUTS, UFM, and PVR.

RESULTS

Mean age at presentation was 4.9 +/- 4.7 years. Seven of them passed urine mainly through the opening near anal verge and only one through the glanular urethral meatus. In three cases the orthotopic channel was managed by PADUA procedure alone and their ventral channel was excised. Two patients had ventral channel transposition as a perineal urethrostomy and following anterior urethral PADUA procedures the intervening gap was repaired with a buccal mucosa. In one patient ventral channel transposition and perineal urethrostomy was combined with a Mitrofanoff channel. In two cases surgical repair has been deferred until puberty. Five (83 %) of the six patients who underwent surgical correction are now voiding normally through external urethral meatus at the penile tip with a median follow up of 3.8 years.

CONCLUSIONS

"Y" type urethral duplication is a complex, rare urethral anomaly requiring individualised management and can result in normal voiding. This is one of the largest series documenting the outcomes of "Y" duplication of the urethra.

16:32–16:35

S19-9 (PP)

FOUR HOUR VOIDING OBSERVATION STUDY POST RESECTION IN INFANTS WITH POSTERIOR URETHRAL VALVES

Katerina PRODROMOU[1], Joanna CLOTHIER[2], Kalpana PATIL[1], Arash TAGHIZADEH[1], Anne WRIGHT[2] and Massimo GARRIBOLI[1]

1) Evelina London Children's Hospital, Paediatric Urology, London, UNITED KINGDOM - 2) Evelina London Children's Hospital, Paediatric Nephrology and Bladder Services, London, UNITED KINGDOM

PURPOSE

Bladder function in boys born with posterior urethral valves (PUV) is often abnormal. We aimed to assess the bladder status in PUV babies following valve resection.

MATERIAL AND METHODS

Between July 2015 and July 2017 we prospectively evaluated bladder function of all infants (0–3 months) with PUV after primary resection using 4-hour voiding observation. Voiding pattern, number of voids, voided volume (VV) and immediate post void residual (PVR) were recorded. Estimated bladder capacity (eBC) was determined using Capacity (ml) = 7 × weight (kg) (Fairhurst et al. J Pediatr Surg1991;26(1):55–7). Large and small BC were defined as >150 % and <65 % eBC respectively. All results given as median (range).

RESULTS

Twenty-one male infants, median age 21 days (5–94) were included. Four hour voiding observation was performed within 7 days (median 1 day) after catheter removal post primary valve resection. Babies voided an average 5 times during the 4 hour study, but with great variability (2–15 voids). Bladder capacity (BC) was large in 10 (47 %) and small in 2 (9.5 %)andmedian ratio BC/eBC=1.25 (0.58–5). Median residual urine was 8 ml (0–120). In 9 babies (43 %) PVR was larger than VV. Ten babies (47 %) emptied their bladders almost completely at least once during the study. Interrupted stream was recorded in 7 babies (33 %). After the assessment 7 (33 %) babies were started on Clean Intermittent Catheterization (CIC) and 1 was commenced on anticholinergic medication.

CONCLUSIONS

Following valve resection, babies have variable voiding patterns and more than half have incomplete bladder emptying and abnormal bladder capacity compared to the expected for age.

16:35–16:47

Discussion

S20: FUNCTIONAL VOIDING DISORDERS

Moderators: Marcel Drlik (Czech Republic), Guy Bogaert (Belgium)

ESPU Meeting on Friday 13, April 2018, 16:44–17:20

16:44–16:49

S20-1 (LO)

★ MAPPING OF BRAIN ACTIVITY FOLLOWING TRANSCUTANEOUS POSTER TIBIAL NERVE STIMULATION FOR LOWER URINARY TRACT SYMPTOMS IN PEDIATRIC PATIENTS: A PET STUDY

M S ANSARI

Sanjay Gandhi Postgraduate Institute of Medical Sciences, Pediatric Urology, Department of Urology and renal transplantation, Lucknow, INDIA

PURPOSE

Peripheral nerve stimulation via lumbosacral route has shown to modulate cortical and subcortical brain areas which seem to control the complex process of micturion, i.e. sensation of bladder filling and the timing of micturition. The present study was conducted to investigate the changes in brain activity during modulation of various brain areas after transcutaneous posterior tibial nerve stimulation (TcPTNS) for lower urinary tract symptoms (LUTS) in pediatric patients.

MATERIAL AND METHODS

We used 18 FDG PET to investigate the effects of PTNS on brain activity in pediatric patients with urodynamically proven detrusor overactivity (DO) or underactive detrusor (UD). All the patient underwent weekly session for 30 minutes for 12 weeks followed by 3 weekly maintenance therapy. PET CT brain was done before the start of TcPTNS and at the end of induction therapy i.e. 3 months.

RESULTS

The study included 21 pediatric patients with a mean age of 5.6Yrs (range 4–16 yrs).

Of the 21 patients, 12 had overactive bladder with urodynamically proven DO and 9 had under active detrusor.

In cases overactive bladder TcPTNS decreased the activity in the cerebellum, midbrain and adjacent midline thalamus and limbic cortical areas, i.e. the cingulate gyrus, ventromedial orbitofrontal gyrus and prefrontal cortex. These are the areas involved in the sense of bladder filling. While, FDG uptake was more avid in these areas before the start of TcPTNS. On contrary the avid uptake was noted in hypothalamus and prefrontal area in cases of underactive detrusor. These are the areas involved sensorimotor learning and the initiation of voiding.

CONCLUSIONS

Our findings suggest that after therapy by TcPTNS the focus of brain activation changes from areas involved in sensorimotor learning to areas involved in the sense of bladder filling (as to overcome urge in DO) and the initiation of voiding (in cases of underactive detrusor).

16:49–16:52

S20-2 (PP)

★ SENS-U: VALIDATION OF A WEARABLE ULTRASONIC BLADDER MONITOR IN CHILDREN DURING URODYNAMIC STUDIES

P.G. VAN LEUTEREN[1], R WOLTJER[2], T.P.V.M. DE JONG[3] and P DIK[1]

1) University Children's Hospitals UMC Utrecht, Department of Paediatric Urology, Utrecht, NETHERLANDS - 2) Novioscan, Nijmegen, NETHERLANDS - 3) University Children's Hospitals UMC Utrecht and AMC Amsterdam, Department of Paediatric Urology, Utrecht, NETHERLANDS

PURPOSE

Urinary incontinence is a frequent problem in school-age children. Since many children remain unaware of a full bladder sensation, the SENS-U Bladder Monitor was invented. The SENS-U is a small, wearable ultrasound sensor which is positioned on the lower abdomen by a skin-friendly adhesive. The sensor continuously estimates the bladder filling status and informs the child when it's time to proceed to the bathroom. In this study, the clinical performance of the SENS-U is evaluated in children during (video)urodynamics.

MATERIAL AND METHODS

In this study, children (6–12 years) were included who were scheduled for a (video)urodynamic study. During urodynamics, the SENS-U determined the average anterior - posterior bladder dimension (every 30 sec.) to estimate the filling status. The correlation between the average bladder dimension and the infused volume is analyzed by Spearman's correlation.

RESULTS

30 patients (boys/girls: 15/15) [mean age: 7.9 ± 1.4 years] were included, in which the SENS-U detected the full bladder prior to voiding in 90 % of the patients (27/30). In the other patients, the bladder was outside the detection-area due to either erroneous sensor-placement (n=1) or an obese abdomen in the upright position (n=2). There was a strong correlation (median R = 0.94) between the average bladder dimension and the infused volume. The detectable voided-volume ranged between 71–439 ml.

CONCLUSIONS

The SENS-U is able to detect a full bladder with a success-rate of 90 %. When excluding corrupted data due to misplacement or an obese abdomen, the full bladder was detected in all patients. Future research will focus on investigating the effect of the SENS-U in incontinence-training.

16:52–16:55

S20-3 (PP)

URODYNAMIC PARAMETERS IN BOYS WITH URINARY INCONTINENCE UNDERGOING CYSTOSCOPY

Pauline OSTENDORF[1], Alexander STILLEBROER[1], Keetje DE MOOIJ[1], Pieter DIK[1], Tom DE JONG[2] and Aart KLIJN[1]

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PURPOSE

Infravesical obstruction is considered a cause of urinary incontinence in boys. Failure of urotherapy or acute relapse after cessation of anticholinergic treatment warrant suspicion for this condition. Little is known about urodynamic investigations in these patients. The aim of this study was to compare urodynamic data in boys with overactive bladder complaints and incontinence, considered as obstructive, with cystoscopy findings.

MATERIAL AND METHODS

A cohort of 68 boys that have been treated for overactive bladder complaints and incontinence, in 2015, aged 4–18 years, has been reviewed. Urodynamic parameters collected were: Qmax(ml/sec), PQmax(cmH2O, bladder pressure during Qmax) and URA(urethral resistance algorithm). A Cut-off value for obstruction was PQmax > 55 cmH20. Cystoscopy findings were reconsidered. The degree of infravesical obstruction was scored by three clinicians on a scale of 1–5 judged on the operation report. A score was given of 1=no obstruction(group 1), 2–3=moderate obstruction(group 2) and 4–5=severe obstruction(group 3).

RESULTS

In 4 cases no obstruction was detected (group 1), 31 had moderate (group2) and 33 severe obstruction(group 3). The mean Qmax was 10.6 for group 1, 10.2 for group 2 and 9.1 for group 3. Mean PQmax was 63.5, 66.6, 72.8 and mean URA 30.2, 31.7, 37.3 for all groups respectively. The difference between URA in groups 2 and 3 was not statistically significant (p=0.097).

CONCLUSIONS

With a 6Fr urodynamic catheter a cut-off pressure of PQmax 55 cm and a URA of > 30 has a high specificity for diagnosing urethral obstruction in boys with overactive bladder complains.

16:55–17:05

Discussion

17:05–17:08

S20-4 (PP)

HOW SMART IS A VOIDING DIARY ON YOUR MOBILE PHONE OR ON PAPER? IMPLICATIONS FOR THE PEDIATRIC UROLOGIST AND PATIENTS SUCCESS

Marleen VAN DEN HEIJKANT, Charlotte VANDERSTAPPEN and Guy BOGAERT

UZ Leuven, Dept Urology and Pediatric Urology, Leuven, BELGIUM

PURPOSE

Voiding diaries are an essential tool in the management of children with lower-urinary-tract-symptoms (LUTS) and nocturnal enuresis. However, completeness of filling out voiding diaries varies. In this study, we have investigated the completeness of voiding diaries and we have performed a systematic review to find out if an electronic voiding diary would improve the completeness of the voiding diary.

MATERIAL AND METHODS

In this prospective study, we have included 92-children (mean-age 8,7 yr) with LUTS or nocturnal enuresis. The completeness of voiding diaries was graded between 0 (not filled in) – 4 (complete). We compared the grade of voiding diary compliance with their treatment compliance and treatment success. In addition, we performed a Pubmed® and Embase® review according to the PRISMA-statement with the question if electronic diaries could improve patients' compliance.

RESULTS

63 % of the children have filled out their voiding diary properly (grade 3–4). There was no correlation between the grade of completeness neither with the treatment compliance nor with the treatment success.

From the PRISMA-analysis it appears that there is no improvement of compliance and completeness using an electronic voiding diary. However there is an improvement of the data quality. In addition, patients and doctors seem to have a preference for the use of an electronic version.

CONCLUSIONS

Although a complete well-documented voiding diary is important in the management of LUTS or nocturnal enuresis in children, only 2/3 complies with the request. In addition, electronic voiding diaries seem to be promising but it would require that such an app is developed in close collaboration with patients and doctors.

17:08 – 17:11

S20-5 (PP)

ANTEGRADE CONTINENCE ENEMA (ACE) CONDUITS FOR FECAL INCONTINENCE MAY IMPROVE LOWER URINARY TRACT SYMPTOMS IN MALES WITH SEVERE ANORECTAL MALFORMATIONS

Kristiina KYRKLUND, Seppo TASKINEN, Eija MÄKELÄ, Risto J RINTALA and Mikko P PAKARINEN

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PURPOSE

Rectourethral fistula (RUF) is a rare and severe type of anorectal malformation (ARM) associated with impaired bowel function and lower urinary tract symptoms (LUTS). We investigated whether ACE conduits for achieving social fecal continence also secondarily improves LUTS.

MATERIAL AND METHODS

The records of all males treated for RUF with posterior sagittal anorectoplasty between 1983 – 2006 and requiring ACE for poor fecal control were retrospectively reviewed. Patients with major sacral anomalies (<3 segments remaining) or cognitive impairment were excluded.

RESULTS

Of 43 males with RUF, 15 (35 %; median age 21 (range,11 – 32) years; 2 bulbar, 8 prostatic, 4 bladderneck fistulas) had undergone ACE at a median age of 8 (range,4,5 – 22) years. None were lost to follow-up. There were 3 cases of grade III VUR (20 %), 1 horseshoe kidney, 1 ectopic ureter requiring neoimplantation and 1 hypospadias repair. Before ACE, 53 % (n=8) had daily daytime stress or urge urinary incontinence (UI), 27 %(n=4) reported bedwetting and 27 % (n=4;3 bladderneck RUF) still wore diapers. ¾ patients with daily UI had detrusor overactivity on urodynamics but normal bladder capacity; 1 also had obstructive bladder emptying requiring intermittent catheterization. In 0,2 – 2 years following ACE, social continence for stool was achieved in 93 % (14/15) and contemporaneous improvement in LUTs was observed in 7/8 cases so that patients discontinued diapers and were daytime and night-time dry. One patient with bladderneck fistula and obstructive symptoms continued with intermittent catheterization and anticholinergics beyond 2 years after an ACE. No patients required further reconstructive urologic surgery.

CONCLUSIONS

Improving bowel function with ACE may secondarily reduce LUTS and improve urinary continence in males with severe ARMs.

17:11 – 17:20

Discussion

S21: NEUROPATHIC BLADDER

Moderators: Anju Goyal (UK), Erik Van Laecke (Belgium)

ESPU Meeting on Saturday 14, April 2018, 08:10–09:10

08:10–08:13

S21-1 (PP)

DOES THE INTRODUCTION OF CLEAN INTERMITTENT CATHETERIZATION AND ANTIMUSCARINIC THERAPY IN THE NEWBORN PERIOD PRESERVE RENAL FUNCTION IN CHILDREN WITH SPINA BIFIDA?

Annarita MARINO[1], Salvatore CASCIO[1], Orla MCMAHON[1], Emer ALDRIDGE[1] and Malcolm LEWIS[2]

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2) Children's University Hospital, Department of paediatric nephrology, Dublin, IRELAND

PURPOSE
It is still a matter of debate among paediatric urologists when clean intermittent catheterization (CIC) and antimuscarinic therapy should be introduced in children with spina bifida. The aim of this study was to assess if late introduction of CIC was associated with a higher incidence of renal damage.

MATERIAL AND METHODS
We reviewed data on all patients with open myelomeningocele who attended the Spina Bifida Clinic. In group 1 patients were started on CIC and antimuscarinic therapy after birth and in group 2 CIC was introduced after their first birthday. Renal damage was assessed using DMSA scan and eGFR calculated with the Schwartz formula.

RESULTS
104 patients were identified, 39 in group 1 and 65 in group 2. The mean age at the introduction of CIC was 0 in group 1 and 42 months in group 2. All children in group 1 had a normal eGFR while 2(3 %) had abnormal eGFR in group 2 (p=ns). DMSA scan showed renal damage in 3(6 %) of those in group 1 compared with 13 (20 %) of group 2 (p=ns). There was no difference in the incidence of unilateral or bilateral VUR (20 % group 1, 12 % group 2).

CONCLUSIONS
Whilst there was more renal damage on DMSA in group 2, there was less reflux on cystography in this group. These differences did not reach statistical significance. We have not been able to show that the current practice of early institution of CIC and antimuscarinic therapy has a renal protective effect in our cohort of patients.

08:13–08:16

S21-2 (PP)

EFFICACY AND SAFETY OF TRANSDERMAL OXYBUTYNIN VERSUS ORAL OXYBUTYNIN IN MANAGEMENT OF PAEDIATRIC NEUROPATHIC BLADDER

Emily RICE[1], Laura WATKINS[2], Gowri SIVALINGAM[2], Maddison BURMAZ[1], Anna THETFORD[3], Elizabeth THOMSON[3], Emma RICHARDSON[4], Jane VALENTINE[4], Anna GUBBAY[4], Gavan HOTANA[4], Katherine LANGDON[4], Naeem SAMNAKAY[2], Andrew BARKER[2] and Japinder KHOSA[2]

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PURPOSE

To compare the patient experience of transdermal (TOP) versus oral oxybutynin in paediatric patients with neuropathic bladder.

MATERIAL AND METHODS

Patients with neuropathic bladder were identified via the multidisciplinary spinal rehabilitation clinic. Patients had trialled TOP and/or oral oxybutynin for greater than 6 weeks. A questionnaire and rating scale was developed to report efficacy, compliance and side effects. Retrospective demographics and outcomes data was collected through phone or face-to-face interview.

RESULTS

27 patients (mean age 10) met inclusion criteria, with 18 having tried both TOP and oral preparations and 9 having tried only TOP. Of the patients that had tried both formulations, 12 (66.6 %) preferred TOP. Reasons for preference were ease of use (50 %) and fewer side effects (41.7 %). 6 participants preferred oral medication, reasons cited included patch falling off (50 %) and skin irritation (33.3 %). Patient reported efficacy and compliance data was reported on a scale of 1–5 (optimal). Patient reported control with TOP was 3.85 vs 3.41 for oral ($p < 0.1$). Compliance was reported in terms of ease of use and frequency of missed doses. TOP was missed less frequently (1.89 vs 2.59, $p < 0.05$) and found to be easier to use (4.33 vs 3.70, $p < 0.1$). Of those taking oral medication, 38.9 % reported systemic side effects at least 'somewhat' bothersome compared to only 14.8 % of those using TOP. 25.9 % of those using TOP reported local side effects that were at least 'somewhat' bothersome (redness or itch at application site).

CONCLUSIONS

TOP has better patient compliance and reported efficacy compared to the oral formulation in this population. It is the preferred formulation due to ease of use and minimal side effects. Topical oxybutynin is a good alternative to oral medication in children with neuropathic bladder.

08:16–08:19

S21-3 (PP)

★ EFFICACY OF ELECTROMOTIVE DRUG ADMINISTRATION (EMDA) OF BOTULINUM TOXIN A IN CHILDREN WITH NEUROPATHIC BLADDER - OUTCOMES OF A PILOT STUDY

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PURPOSE

Intravesical injection of Botulinum toxin A (BtA) is well-established in managing neuropathic bladder dysfunction. EMDA uses pulsed direct electrical current to enhance trans-urothelial drug delivery and has been used for Mitomycin C, oxybutynin and lidocaine. It has been reported to be effective for BtA delivery in children. This prospective study assessed the efficacy of EMDA of BtA (Botox®) in children with neuropathic bladder dysfunction.

MATERIAL AND METHODS

Ten children with urodynamically confirmed neuropathic bladder were administered BtA (Botox®) via EMDA. Patients received between 3.3.units/kg and 10 units/kg (max 300) of Botox®. Urodynamic studies were performed according to ICCS standards, before and 4–6 weeks after EMDA. Using SPSSv24, the Wilcoxon test objectively assessed four variables: Bladder Capacity (% of EBC), Compliance, pDetmax during detrusor overactivity and at capacity. Data are described using median (IQR), pre and post-EMDA unless stated, with statistical significance defined as $p < 0.05$.

RESULTS

Ten patients aged 12.6 yrs (range 7.6–16.9 yrs) had EMDA following baseline urodynamics. 9/10 completed post-intervention urodynamics. There were no adverse effects attributable to EMDA. Statistically significant improvement in urodynamic parameters was not seen. Bladder capacity (% of EBC) was 59.5(41.2–91 %) vs 53.0(34.5–76 %), p=0.678. Bladder compliance was 8.75(6.88–11.05 mls/cmH2O) compared with 9.0(2.85–11 mls/cmH2O), p=0.327. Pdetmax during filling was 49(40.75–88 cmH2O) compared to 91(45.5–142.5 cmH2O), p=0.374. At capacity, pdetmax was 28(21.75–40.5 cmH2O) vs 49(25.5–60 cmH2O), p=0.110.

CONCLUSIONS

EMDA offers potential economic and practical advantages of administering BtA without requiring general anaesthetic. However, we could not demonstrate any objective improvement in urodynamic parameters in neuropathic bladder dysfunction. This questions the ability of EMDA to transport BtA molecules across urothelium.

08:19–08:22

S21-4 (PP)

EARLIER INTRODUCTION TO CIC PROVIDES BETTER COMPLIANCE IN SPINA BIFIDA PATIENTS

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PURPOSE

Clean intermittent catheterization is an important tool in the management of children who cannot empty their bladders. Our observation was that children and parents are more prone to adapting to CIC in earlier ages. The aim of this study is to evaluate the compliance with CIC in terms of age CIC was started in spina bifida patients.

MATERIAL AND METHODS

Spina bifida patients admitted to urodynamic laboratory between 2013 and 2017 were questioned in terms of compliance with CIC. Gender, paraplegia, anatomic or mental disabilities, continence, urinary infections, concomitant diseases, and person performing CIC were also recorded. The data were reviewed retrospectively.

RESULTS

The study included 162 patients (77 boys, 85 girls) who were reevaluated in a median of 5 (1–24) years. Mean age was 3.30 (±4,507) years when CIC was started. In total, 127 patients (78 %) were compliant with CIC, 79 (49 %) were dry between intervals, and 105 (65 %) didn't have urinary infections. Eighty-four (52 %) had paraplegia. While gender (p=0.251), paraplegia (p=0.418), anatomic or mental disabilities (p=0.418), the person performing CIC (p=0.355) had no impact; the age of starting CIC significantly effected compliance (p<0.001). The mean age at start of CIC was 2.49 for the patients who were compliant and 6.26 for those who weren't.

CONCLUSIONS

The delay in initiating CIC in spina bifida patients with neurogenic bladder does not only risk urinary tract and retard continence, but it also decreases compliance with CIC. Our study shows better adaptation when it is started in early ages.

08:22–08:25

S21-5 (PP)

ACUTE TRANSVERSE MYELITIS IN CHILDREN: LONG-TERM BLADDER AND BOWEL OUTCOMES

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PURPOSE

Bladder and bowel dysfunction are common in acute transverse myelitis (ATM), but their characteristics and natural history have only been briefly reported in paediatric patients. We describe the long-term bladder and bowel outcomes of ATM in children.

MATERIAL AND METHODS

Retrospective review of the clinical features, and radiological and urodynamic findings in children with ATM diagnosed between 2000–2017.

RESULTS
30 patients diagnosed with ATM were identified, median age 8.9 years (0.5–16). Twelve showed LUT or bowel symptoms, either at presentation (7) or follow-up. The most common urological presentation was acute urinary retention(6). One also developed priapism and faecal incontinence, 3 had additional constipation and one presented with urgency. One patient had isolated constipation. Of the 6 with initial retention, two had complete resolution of their bladder symptoms, but one with priapism has residual erectile dysfunction. LUTs appeared during follow-up in five. The only significant ultrasonographic abnormality was post-void residual volume after trial of void (4) or during follow-up (2). Five children (5 - 17years) underwent video-urodynamics showing small cystometric capacity in 5, high leak point pressure and detrusor overactivity in three, incomplete bladder emptying in two, and poor compliance in one. Five patients were managed with CIC, 7 with anticholinergics and four with intravesical injection of Botox®. After a median follow-up of 5 years, 7 patients have recovered normal bladder function, four have persistent LUTS, and one remains on CIC and anticholinergics. All patients with initial bowel symptoms recovered function and four developed constipation/soiling during follow-up, requiring laxatives and/or rectal enemas for management.

CONCLUSIONS
Persistent bowel and bladder dysfunction is common in ATM and symptoms may appear during follow-up. Renal ultrasound and urodynamic investigation are recommended to guide treatment if symptoms persist.

08:25–08:40
Discussion

08:40–08:43
S21-6 (PP)

BLADDER AND BOWEL DYSFUNCTION IN CHILDREN WITH ACQUIRED BRAIN INJURY: A MISSED PROBLEM?

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PURPOSE
Bladder and bowel dysfunctions (BBD) in children with spinal cord injuries (SCI) have been evaluated as in cerebral palsy (CP). Scant data are available in acquired brain injury (ABI). Aim of our study is to evaluate BBD risk and incidence in ABI children.

MATERIAL AND METHODS
All new patients admitted from the 1st July to the 30th September 2017, aged 3 to 18 years old, were evaluated. Data were collected considering clinical diagnosis, ICIQ Scale, Wee-Fim Scale, Bristol scale, Gross Motor Function Classification System (GMFCS) and the Communication Funcion Classification System (CFCS). Statistical analysis was performed with Microsoft SPSS,$p<0,001$ was considered significative.

RESULTS
60 new patients were admitted: 30 presented CP and 17 ABI, 3 SCI, 10 others congenital pathologies. About ABI patients none of them had never evaluated before by pediatric urologist. No statistical difference is present between ABI and CP.

DIAGNOSIS	N°	UTI	ENURESIS	URGENCY	CREDE	INCONTI-NENCE	BOWEL DYS.	SELF-CARE
CP	30	13,3 %	60 %	33,3 %	23,3 %	26,6 %	53,3 %	52 %
ABI	17	23,5 %	58,8 %	35,2 %	35,3 %	11,7 %	64,7 %	54 %
SCI	3	66,6 %	100 %	33,3 %	66,6 %	33,3 %	33,3 %	43 %
OTHER	10	0 %	70 %	30 %	20 %	30 %	70 %	59 %

CONCLUSIONS

ABI is an heterogenous group of patients with vascular, oncological, traumatic brain injury. ICIQ is a valid screener ABI for detecting BBD. BBD are present in ABI as in CP and we can consider BBD a missed problem in ABI reclaiming major attention.

08:43 – 08:46

S21-7 (PP)

★ ASSESSMENT OF BLADDER COMPLIANCE BY A PRESSURE ADJUSTED NEW PARAMETER: A PROMISING TOOL TO PREDICT UPPER URINARY TRACT CHANGES IN NEUROPATHIC BLADDER

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PURPOSE

Compliance values are frequently inconclusive during urodynamic studies, thus detrusor leak point pressure (DLPP) became the most reliable parameter in risk assessment for upper tract. Yet, the duration of high pressure during filling phase rather than a single leak point value may better reflect it. We hypothesized that a different calculation comparing the area under curve (AUC) to a DLPP-adjusted total area can be more sensitive than classical repetitive measurement of compliance.

MATERIAL AND METHODS

A new parameter (PAUC) was derived from the proportion of AUC to a DLPP-adjusted total area (A_T). AUC was calculated from cystometrogram using ImageJ software. A_T was computed from a rectangle formed on graph with a fixed height of 200 cmH_2O to include all DLPP values and a width defined by the filling phase. After calculation of PAUC from two different urodynamic studies with an interval of >5 years, files of 91 myelomeningocele patients with imaging studies (ultrasonography and scintigraphy) performed at the time of urodynamics were retrospectively reviewed. The powers of PAUC, DLPP, compliance, and volume in predicting upper tract changes were evaluated using ROC analysis.

RESULTS

PAUC amongst all had the best discrimination in predicting urinary tract dilatation (UTD) (table). A value of 0.06 was a significant cut-off value (sensitivity 0.75, specificity 0.41, PPV%75, NPV%56). PAUC>0.06 significantly correlated with UTD ($p<0.001$) and new scar formation ($p=0.01$).

	AUC	%95CI Lower	%95CI Upper	Asymptomatic Sig.
PAUC	0.689	0.599	0.779	<0.001
DLPP	0.625	0.527	0.723	0.010
Compliance	0.454	0.355	0.553	0.051
Capacity(measured/expected)	0.498	0.408	0.558	0.966

CONCLUSIONS

Our new parameter estimating compliance precisely and incorporating the impact of pressure in the analysis may be a useful tool to predict patients who are under risk of upper tract damage in myelomeningocele.

08:46–08:49

S21-8 (PP)

THE ANALYSIS OF URODYNAMIC STUDY OF CHILDREN WITH FILUM TERMINALE LIPOMA

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PURPOSE

Filum terminale lipoma(FTL) is a congenital spinal anomaly that can cause tethered cord syndrome. It is generally known that about 50 % patients improve their symptoms after surgery in symptomatic FTL patients. Purpose of this study was to evaluate parameters of urodynamic study(UDS) and presence of urologic symptoms before and after surgery for FTL.

MATERIAL AND METHODS

The records of patients who were diagnosed with FTL between November 2005 and august 2016 were analyzed for motivator of diagnosis, associated malformations, symptoms and results of UDS. Compliance, bladder volume, detrusor activity and vesico-sphincteric synergy were identified, graded, and added to obtain a UDS score (Meyrat et al. Childs Nerv Syst 2003;19:716–721).

RESULTS

From 353 patients who were diagnosed with FTL, 138 patients had associated malformation such as hypospadias, imperforated anus and cloacal anomaly. The 104(55.6 %) of 187 patients who undergone surgery were males. Mean age at surgery was 20(1–235) months. Motivator of diagnosis and mean age at surgery were as follows: Dimple were 91.4 % and 11.2(1–109)months, urological symptoms were 2.6 % and 76(35–103)months and musculoskeletal symptoms were 5.9 % and 131(31–235)months. UDS score before and after surgery was 3.7 and 2.3. There was a significant decrease between before and after surgery (p was less than 0.001). Of 5 patients with urologic symptom, 3 patients showed partial improvement and 2 patients showed failure of improving symptoms.

CONCLUSIONS

187 patients undergone FTL surgery showed good clinical progress and had no complications. Patients undergone surgery after developing symptoms were older than patients who diagnosed by dimple and most of their symptoms did not improved.

08:49–08:52

S21-9 (PP)

★ INITIAL EXPERIENCE OF BLADDER COMPLIANCE MEASUREMENT USING ULTRASOUND ELASTOGRAPHY IN NEUROGENIC BLADDER

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PURPOSE

Bladder compliance is most important factor for treatment and prognosis of neurogenic bladder. However, we could evaluate bladder compliance using only urodynamic study. We investigate the value of ultrasound elastography to measure bladder compliance.

MATERIAL AND METHODS

We prospectively enrolled 8 patients in this study from November 2016 to June 2017. Underlying disease are meningomyelocele (2), lipomeningomyelocele (4), spinal tumor (1) and cord regression syndrome (1). We measured bladder compliance using urodynamic study andultrasound elastography simulatenously.

RESULTS

4 patients were male, mean age at urodynamic study was 8.9(5–15) years.

We divided into low compliance group (4 patients, less than 10 ml/cmH_2O in urodynamic study) and normal compliance group (4 patients, more than 20 ml/cmH_2O). Mean compliance of low compliance group was 5.1(1.7–8.9) ml/cmH_2O

We compared Young's modulus measured byultrasound elastography between two groups according to % of bladder filling of expected capacity for age (0 %, 25 %, 50 %, 75 %, 100 %). In initial and 25 %, there were no significant differene between low compliance group (9.05 kPa, 13.12 kPa) and normal group (9.4 kPa, 7.74 kPa) (P=0.941, 0.211).

Young' modulus gradually increased until full filling status in low compliance group (50 % 13.34 kPa, 75 % 15.46 kPa, 100 % 22.03 pKa), but maintained in normal group (50 % 4.85 kPa, 75 % 5.53 kPa, 100 % 8.51 kPa). There were significant differences between two groups (50 % P=0.006, 75 % P=0.003, 100 % P=0.015).

CONCLUSIONS

Young's modulus measured by ultrasound elastography is closely related to bladder compliance. When bladder compliance is higher than 10 kPa, we should consider that bladder compliance is significantly decreased. We expect that ultrasound elastography would substitute the major role of urodynamic study because of noninvasiveness and usability.

08:52–08:55

S21-10 (PP)

WHAT PARENTS OF CHILDREN WITH SPINA BIFIDA NEED : A MIXED METHODS STUDY

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PURPOSE

The aim of this study was to determine the needs of children with spina bifida and their families from the perspectives of parents, and to help guide the development of health care service recommendations.

MATERIAL AND METHODS

This study used an explanatory sequential mixed methods design. In the first phase, 161 parents of children under 18 with spina bifida completed a needs assessment questionnaire from December 2016 to February 2017. The second phase consisted of focus group interviews with a total of 15 mothers categorized into 3 groups based on their children's developmental stages. In the third phase, the quantitative and qualitative results were interpreted to develop overall themes.

RESULTS

In the quantitative evaluation, parents identified information as their greatest need, followed by services and obstacles to care. In particular, on the information scale over 90 % of parents wanted to know how the condition affects their children's physical and emotional growth and development. The qualitative results identified different needs according to children's developmental stages. Furthermore, additional needs were revealed under common themes: an improved bladder/bowel disability awareness program for teachers, peers, the public, and even health care providers; and a welfare policy for people with special conditions including educational support, convenient school and public facilities for bladder and bowel management, and a partnership with professionals. Mixed-methods analysis revealed that parents need development- and disease-specific information, services, and policies.

CONCLUSIONS

The qualitative findings supported the quantitative findings regarding parental needs and expanded them to include specific services and policies.

08:55–09:10

Discussion

S22: LOWER URINARY TRACT 2

Moderators: Gundela Holmdahl (Sweden), Abraham Cherian (UK)

ESPU Meeting on Saturday 14, April 2018, 09:10 – 09:54

09:10 – 09:13

S22-1 (PP)

★ THERAPEUTIC EFFECTS OF MINIRIN IN MONOSYMPTOMATIC ENURESIS TREATMENT DEPENDING ON PATIENTS' AGE

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PURPOSE

To test the therapeutic effects of Minirin in monosymptomatic enuresis treatment depending on patients' age.

MATERIAL AND METHODS

The prospective research was carried out in the 2014 – 2017 period, during which 89 patients were observed who were treated with Minirin due to the previously diagnosed monosymptomatic enuresis. The patients were divided into two age groups. The first group consisted of 43 patients age 5 to 7, with the average age of 5.6 ± 0.5, out of whom 35 (81.4 %) were boys, and 8 (18.6 %) were girls. The second group consisted of 46 patients age over 7 to 12, with the average age of 9.7 ± 1.6, out of whom 30 (65.2 %) were boys, and 16 (34.8 %) were girls. There was no statistically relevant difference according to sex (p=0.086). After the 3-month treatment, all the patients in both groups were tested for the effects of Minirin in monosymptomatic enuresis treatment.

RESULTS

The average enuresis frequency in the first group before therapy was 26.0 ± 6.2 per month, whereas the average enuresis frequency after therapy was 11.0 ± 8.0 per month (p=0.040). The average enuresis frequency in the second group before therapy was 23.1 ± 6.2 per month, whereas the average enuresis frequency after therapy was 3.8 ± 3.6 per month (p=0.036). ANOVA data analysis of repeated measurements has indicated that there is a statistically relevant interaction between the groups (p=0.006), i.e. enuresis frequency decreases considerably more in the second group.

CONCLUSIONS

Monosymptomatic enuresis treatment with Minirin is noticeably more effective with patients over 7 years of age.

09:13–09:16

S22-2 (PP)

STUDY OF ENURESIS IN CHILDREN WITH CLINICALLY SIGNIFICANT EMOTIONAL AND BEHAVIORAL PROBLEMS

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PURPOSE

Previously, we concluded that incidences of internalizing, externalizing, and physical problems are high in the enuresis group than comparison group(non-enuresis). Specific purpose of this study is to research characteristics of enuresis in children with confirmed clinically significant emotional and behavioral problems.

MATERIAL AND METHODS

We retrospectively analyzed the cases of 279 children with nocturnal enuresis. We assessed their symptoms, emotional and behavior problems using a self-administered questionnaire including CPSQ (Child Problem-behavior Screening Questionnaire). As a comparison, we used a CPSQ result of 681 children (who are not diagnosed with enuresis) collected and analyzed by Jin[i].
[i]Jin HS, Journal of emotional & behavioral disabilities, 2013;12:89–119

RESULTS

We named the group of children who exceed the cut-off line of the CPSQ (>13) as 'clinical group'. Incidence of clinical group is statistically high in the enuresis group (26.2 %:11.6 %,p=0.000). And when we compared each clinical groups of enuresis and comparison group, the clinical group of enuresis group showed significantly higher response rates and higher scores in the physical problems (Urine/fecal problems, Not eat well and Tic) and the clinical group of the comparison group showed significantly higher response rates and higher scores in the internalizing problems (Anxiety, Lack of socializing and Letharic). When we classified enuresis group according to its characteristics,nMNE group showed a higher incidence of clinical problem than MNE group (p=0.003).

	Enuresis(n=73)	Comparison(n=79)	p-value
physical health problem	number of response(%)		
obese	56(76.7 %)	47(59.5 %)	0.023
fanting	1(1.4 %)	3(3.8 %)	0.350
voiding/defecation	57(78.1 %)	3(3.8 %)	0.000
sick often	36(49.3)	39(38)	0.159
not eat well	38(49.3 %)	23(29.1 %)	0.004

CONCLUSIONS

Incidence of clinically significant emotional and behavioral problems is statistically high in the enuresis group especially when they have daytime symptoms, and enuresis group with clinical problem tends to show physical symptoms besides urine/fecal problem when the comparison group with same problem tends to show internalizing symptoms.

09:16–09:19

S22-3 (PP)

SAFETY AND EFFICACY OF INTRAVESICAL GENTAMICIN THERAPY IN PAEDIATRIC PATIENTS WITH COMPLEX UROLOGICAL CONDITIONS

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PURPOSE

Intra-vesical gentamicin therapy (IGT) has been used in adult cystitis patients and paediatric patients with complex urological conditions (Defoor, J.Urol.2006;175(5):1861–4). The authors aimed to compare the safety and efficacy data with published literature.

MATERIAL AND METHODS

A prospective study was performed in a single institution between 2016 and 2017. A treatment course was twice a day for 7 days. A prophylactic course was 3 times a week for up to 6 months. Gentamicin 40 mg was added to 100 mls urotainer and instilled into an empty bladder by gravity over 5 minutes. The bladder was emptied after 1 hour. Gentamicin levels were performed 1 hour after the IGT on days 1, 3 and 7. Chi-squared test was used to compare the outcomes (elevated gentamicin level and breakthrough UTI) between this cohort and published literature.

RESULTS

17 patients were commenced on IGT for recurrent urinary tract infections (10 treatment courses for current symptomatic UTIs and 11 prophylactic courses). Underlying conditions included neuropathic bladder (6), bladder exstrophy (4), posterior urethral valves (3), cloacal anomaly (1), revision pyeloplasty (1), severe overactive bladder (1). 4 patients stopped IGT early (2 breakthrough UTIs, 1 developed diarrhoea, 1 gentamicin resistance).

	Current study	Defoor 2006	P value (Chi-squared test)
Number of patients (Male:Female)	17 (9M: 8F)	80 (38M: 42F)	
Median age (years)	4.2 (0.7-10.7)	10 (0.3-36)	
Median duration (days)	51 (7-227)	90	
Indwelling or SP catheter	6 (35 %)	11 (14 %)	
Elevated gentamicin levels > 0.4 mg/dL	0 %	0 %	
Breakthrough UTI	4 (24 %)	21 (26 %)	0.82
Gentamicin resistance	1 (6 %)	5 (6 %)	0.95

CONCLUSIONS

There was no difference in the safety or efficacy of intra-vesical gentamicin therapy between the current study and published literature (Defoor 2006). Intra-vesical gentamicin therapy is a safe feasible option in children with recurrent urinary tract infections and complex urological conditions.

09:19–09:28

Discussion

09:28–09:31

S22-4 (PP)

VOIDING SCHOOL FOR CHILDREN WITH REFRACTORY NON-NEUROGENIC OVERACTIVE BLADDER: A 10-YEAR RETROSPECTIVE STUDY

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PURPOSE

Despite adequate empiric management, 20 % of children with overactive bladder (OAB) fail to improve. An inpatient bladder rehabilitation program (voiding school) was established, as an alternative strategy for refractory OAB in children. The aim was to evaluate the long-term outcome of the voiding school program.

MATERIAL AND METHODS

A retrospective chart review of 357 children with refractory OAB, who attended voiding school between 2000 and 2010 was performed. Children were between 5 and 16 years old (mean 9.7 years, SD 2.0), 227 (63,6 %) were boys. Outcome was evaluated at 6 time points, until one year after voiding school, measuring continence, enuresis and daytime incontinence voiding scores (respectively eVS and dVS) and maximal voiding volume (MVV). Linear mixed models were used to account for the longitudinal character of the data.

RESULTS

Voiding school in children with refractory OAB resulted in a spectacular increase of continence (<1 % at entry to 26.6 % 1 year after voiding school). Moreover, a decline in the proportion of children (68.2 % to 22.9 %) with combined daytime & night incontinence, and of the severity of the incontinence was seen. Young boys with comorbid nocturnal polyuria, dysfunctional voiding or faecal incontinence had the most unfavourable evolution.

CONCLUSIONS

Voiding school is a successful treatment modality for children with refractory OAB and resulted in a spectacularly increase of dryness. Additionally, voiding school introduced an important shift from combined and severe to isolated and mild forms of incontinence, with good long-term effects.

09:31 – 09:34

S22-5 (PP)

★ LOWER URINARY TRACT SYMPTOMS AND HIRSCHSPRUNG DISEASE: PREVALENCE, RISK FACTORS AND MANAGEMENT

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PURPOSE

To define the prevalence and to identify the risk factors of lower urinary tract symptoms (LUTS) and outcomes after transanal endorectal pull-through (EPT) and Duhamel procedures for Hirschsprung disease (HD).

MATERIAL AND METHODS

Data were retrospectively reviewed in all patients over 5 years with HD in our center between 2004 and 2012. They were divided into two groups, (A) EPT, and (B) Duhamel. Analyzed parameters included patients characteristics (birth weight, term, age at surgery), pathological findings, postoperative complications, current clinical examination (Bristol and DVSS score, uroflowmetry). Exclusion criteria: intellectual disability, definitive endostomy. Statistical analysis: Student and Fisher tests.

RESULTS

111 patients were included (A=85; B=26) and 27 patients (24 %) (A=19; B=8) with a median age of 6.5 years (A=6.1; B=8.5, p>0.05) were totally analyzed. Median follow-up was 83.4 months. Median age at surgery was 32 days (A=18; B=186, p=0.04). Constipation occurred in 11 patients (40.7 % (A=8; B=3, p>0.05)) and prevalence of LUTS was 22 % (A=4; B=2, p>0.05). Median DVSS score was 10.8 (A=11.5; B=10, p>0.05) with a median Qmax of 17 mL/s (A=16.3; B=18.5, p>0.05). Two patients (10.5 %) had detrusor-sphincter dyssynergia after EPT who needed catheterization through a Mitrofanoff channel. Birth weight, term, age at surgery, sex, surgical approach, pathological data and constipation score were not analyzed as risk factor for LUTS.

CONCLUSIONS

LUTS after HD are not uncommon and should be evaluated during follow-up. They could be due to voiding disorders or a consequence of detrusor-sphincter dyssynergia. Surgical approach may not be incriminated in LUTS prevalence. However a larger study is needed.

09:34 – 09:37

S22-6 (PP)

COMPLICATIONS AFTER SUPRAPUBIC CATHETER INSERTION FOR PAEDIATRIC VIDEOURODYNAMICS – IS THE SAME DAY STUDY ASSOCIATED WITH GREATER COMPLICATIONS?

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PURPOSE

Typically urodynamics are delayed after insertion of suprapubic (SP) lines. We postulated that performing urodynamics on the same day as SP line insertion would not result in increased morbidity. We retrospectively compared complications in those having urodynamics on the same day against those who had urodynamics performed more than one day after SP line insertion.

MATERIAL AND METHODS

Notes were reviewed for 155 patients undergoing urodynamics via SP Lines since 2008. In 2014 we changed our practice to perform urodynamics on the same day as SP line insertion. Patients undergoing urodynamics would have two 5 Fr SP lines inserted under GA.
Major complications were defined as those requiring intervention like urethral catheter insertion or admission. Minor complications were defined as those not requiring intervention or admission.
The two groups were compared using Fischer's exact two tailed test.

RESULTS

There were 135 boys with a median age of 7 years. Most common diagnoses was posterior urethral valves in 83 patients. Urodynamics were performed on the same day (Group A) in 39. Urodynamics were performed at an interval of more than one day (Group B) in 116. There were a total of 5 complications in Group A and 17 in Group B; this was not statistically significant (p=0.79). Major complications in Group A was 4 compared to 3 in Group B but this was not statistically significant either (p=0.09)

CONCLUSIONS

Urodynamics can be performed on the same day as SP line insertion with no increase in morbidity.

09:37 – 09:42

S22-7 (VP)

INTRAPERITONEAL BLADDER PERFORATION: LAPAROSCOPIC REPAIR IN A CASE OF DELAYED DIAGNOSIS

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PURPOSE

Intraperitoneal bladder perforation due to blunt trauma is a rare condition in childhood. In this study, we aimed to share our experience with laparoscopic repair of intraperitoneal bladder perforation in a patient with multiple trauma.

MATERIAL AND METHODS

An 8-year-old boy was brought to our emergency department as a victim of traffic accident. During admission, he was tachypneic and restless but his vital functions were stable. He had abdominal tenderness in lower quadrants and a fracture in the right tibia. The soft tissues over pubic and both iliac bones were markedly painful and edematous. There was no blood at the external meatus. Urine analysis was normal. Ultrasonography and computerized tomography showed no intrabdominal solid organ injury but there were free intraperitoneal fluid, severe pelvic hematoma and pubic bone fractures. He was admitted to intensive care unit with diagnosis of multiple trauma. Because acute abdomen developed despite maximal supportive measures, he underwent laparoscopic exploration on 4th day of hospitalization.

RESULTS

We found a perforation site at posterior bladder wall after aspiration of abundant intraabdominal fluid. Then, two additional ports were inserted and the perforation site was repaired as two layers. Rectovesical fossa was drained. In postoperative period, peritonitis resulting in prolonged drainage was developed. After removing the drain on the postoperative day 9, the patient was doing well and discharged.

CONCLUSIONS

Although delayed diagnosis of intraperitoneal bladder perforation causes to increased morbidity, laparoscopic repair can be successfully performed.

09:42 – 09:54

Discussion

S23: ENDOUROLOGY

Moderators: Anna Bujons (Spain), Rosa Romero (Spain)

ESPU Meeting on Saturday 14, April 2018, 11:06–11:44

11:06–11:11

S23-1 (LO)

★ MINI-PERC FOR RENAL CALCULI IN PEDIATRIC PATIENTS: DOES SIZE MATTER?

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OBJECTIVE

To assess the safety, efficacy, and stone-free rate (SFR) of Min-perc nephrolithotomy (m-PCNL) and compare it with conventional PCNL (cPCNL) for the management of renal calculi in pediatric patients under 18 years of age.

MATERIAL AND METHODS

50 patients with renal calculi were randomly divided into two groups in prospective manner, mPCNL: were managed by mini-Perc (size 15 Fr.) and conventional PCNL (cPCNL) (size 24 Fr.). The mean age, sex, stone burden, operating time, complications (haematuria, drop in hematocrit), pain score (lumbar pain), need of analgesia, perinephric extravasation, nephrostomy site leak, hospital stay, and stone free rate (SFR) were compared between the two groups. The success of the procedure was defined as the absence of residual stones or small residuals of 3 ⩽mm on ultrasonography or X ray KUB at 12 weeks postoperatively.

RESULTS

Both the groups were comparable for preoperative parameters. The mean stone size was 1.9 (10.75–35.25) mm and the mean number of stones was 2 (1–5). The mean (SD) operating time was statistically significantly longer in m-PCNL [90+ 25 min] as compared to cPCNL 70.2±20, p=0.04]. On first session of PCNL the SFR for m-PCNL was 94.2 % and for cPCNL 93.31 %, which was not significantly different (P = 0.060). On re-look SFR improved to 97.3 % and 96.2 % respectively. Episodes of haematuria and drop in hematocrit was more in cPCNL as compared to mPCNL [p=0.03.]. Likewise, pain score, need of analgesia, perinephric extravasation and nephrostomy site leak was higher in cPCNL as compared to mPCNL [p=0.02]. Although the hospital stay was longer in cPCNL as compared to mPCNL this was not statistically significant (P = 0.244).

CONCLUSIONS

Mini-Perc offers good outcomes with lower complications rates compared to the conventional technique. The size of tract influences the nature of complications such as higher haematuria, lumbar pain and renal extravasation.

11:11–11:14

S23-2 (PP)

FLANK-FREE MODIFIED SUPINE PERCUTANEOUS NEPHROLITHOTOMY IN PEDIATRIC AGE GROUP

Ehab ELSAYED[1], Esam DESOUKY[1], Ahmed ELIWA[2], Mohamed SLEEM[2], Waleed SHABANA[2], Tamer DAWOOD[2], Mohamed TELB[2] and Salem KHALIL[3]

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PURPOSE

To evaluate the safety and efficacy of pediatric percutaneous nephrolithotomy (PCNL) in the flank-free modified supine position (FFMSP). PCNL in the supine position is increasingly and successfully used in pediatric age group. Different modifications of supine positions have been described; however, the best supine position is not well established and remains a matter of debate.

MATERIAL AND METHODS

This prospective study included 22 children presenting with single renal pelvis stone (2–3 cm) in the period between May 2012 and April 2014. Diagnosis was set by plain x-ray and computed tomography in all patients. PCNL was performed with the patients placed in the FFMSP. The operative time and hospital stay were estimated. The outcome and any perioperative complica- tions or conflicts were recorded.

RESULTS

The study included 22 children (15 boys and 7 girls) with a solitary renal pelvis stone. Mean ' standard deviation age of the patients was 9.5 ' 3.2 years (range, 3–15.5 years). Stone length, operative time, and hospital stay had mean ' standard deviation of 2.4 ' 0.23 cm, 65.1 ' 18.7 minutes, and 4.4 ' 0.9 days. Stone-free rate was 90.9 % after 1 session of PCNL. One patient (4.5 %) needed a second-look PCNL. Shock wave lithotripsy was performed for another patient. Postoperative fever occurred in 4 patients (18.2 %). One patient received postoperative blood transfusion. Postoperative transient urinoma occurred in 2 patients (9.1 %).

CONCLUSIONS

PCNL in pediatric age group via FFMSP was proved to be safe and effective in management of renal pelvis stones of size 2–3 cm. It provides stone clearance rate comparable with that re- ported of conventional PCNL in the prone position.

11:14–11:17

S23-3 (PP)

COMBINED URETEROSCOPY AND PCNL IN CHILDREN

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PURPOSE

Urinary tract stones represents an emerging problem in children. Introduction of smaller endoscopes, lasers and improved technology has offered a new dimension. Supine positioning has certainly contributed to the new life of PCNL and offers combined percutaneous and retrograde approach during the same surgical procedure. In this prospective study we have used the GMSV position to simultaneously treat ureteric and ipsilateral renal stones by retrograde ureteroscopy and supine PCNL in children.

MATERIAL AND METHODS
We prospectively performed retrograde ureteroscopy and supine PCNL in children with ureteric stones and ipsilateral renal calculi during the period Jan 2015 to Sept 2017. Inclusion criteria were: age younger than 18 years, Presence of ipsilateral ureteric calculi and renal calculi. Exclusion criteria included: contraindications to general anesthesia, attendant different illness such as coagulation abnormalities. All procedures were performed with the patient in the supine Valdivia modified Galdakao position.

RESULTS
During the study period, a total number of 39 children (23 males and 16 females) presenting with symptomatic ureteric and ipsilateral renal calculi underwent retrograde ureteroscopy and supine PCNL in a single setting. The mean age was 14 years. The mean operating time was 95 mins. None of the children needed intra or postoperative blood transfusions. The mean drop in hemoglobin following the procedure was 0.5 gm%. Our initial stone clearance rate with combined ureteroscopy and PCNL was 84.6 % and following SWL for residual fragments stone clearance was 100 % in all children at 3 months follow-up.

CONCLUSIONS
In this study of ours we have been able to tackle both ureteric calculi and ipsilateral renal calculi in a single setting using the GMSV position in children. The combined procedure of ureteroscopy and ipsilateral PCNL in GMSV position was feasible, safe and effective and was associated with minor postoperative complications.

11:17 – 11:26
Discussion

11:26 – 11:29
S23-4 (PP)

LONG-TERM RESULTS IN PRIMARY OBSTRUCTIVE MEGAURETER TREATED BY ENDOSCOPIC BALLOON DILATION

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PURPOSE
To assess long-term effectiveness, complications and outcomes of primary obstructive megaureter (POM) treated by endoscopic balloon dilation (EBD) in the largest series reported.

MATERIAL AND METHODS
100 POM in 92 consecutive patients were treated by EBD between years 2004 – 2016. A total of 79 POM (73 patients) with more than 18 months of follow-up after treatment have been analyzed. EBD of the vesicoureteral junction was performed with semicompliant high-pressure balloon catheters (2.7 FG) with minimum balloon diameter of 5 mm, followed by temporary Double-J stent placement. Follow-up protocol included periodical clinical reviews, US and MAG-3 renogram scans.

RESULTS
Median age at surgery was 4 months (15 days-3.6 years), with median operating time of 20 minutes (10 – 60) and hospital stay of 1 day (1 – 7). Initial renal function was preserved in all patients with normalization of the renogram elimination curves. Significant differences were observed in ureteral diameter before, after EBD and in long-term ($p<0.001$). Endoscopic approach of POM had a long-term success rate of 87.3 %, with a mean follow-up of 6.4±3.8 years. Secondary VUR was found in 17 cases (23 %), being successfully treated by endoscopic subureteral injection in 13 (76,4 %). Nine

cases developed long-term re-stenosis (12,2 %) that were successfully treated with a new EBD in 8. Endoscopic management of POM failed in 10 cases (12.7 %) that required ureteral reimplantation. Five were early failures (4 intraoperative technical problems and 1 double-J stent migration with severe re-stenosis), and 5 long-term (4 persistent VUR and 1 re-stenosis recurrence).

CONCLUSIONS

EBD has shown to be an effective treatment of POM with few complications and good outcomes at long-term follow up. Main complication was secondary VUR that could also be treated endoscopically with a high success rate. In our opinion, EBD may be considered first-line treatment in POM.

11:29 – 11:32

S23-5 (PP)

ENDOUROLOGICAL TREATMENT OF SECONDARY OBSTRUCTIVE MEGAURETER

Laura BURGOS LUCENA, Alberto PARENTE HERNÁNDEZ, Rubén ORTIZ RODRÍGUEZ, Beatriz FERNÁNDEZ BAUTISTA and Jose María ANGULO MADERO

Hospital Gregorio Marañón, Paediatric Urology, Madrid, SPAIN

PURPOSE

To present our experience and long-term results of endoscopic balloon dilatation of secondary stenosis after vesicoureteral reimplantation.

MATERIAL AND METHODS

Retrospective study of the patients with ureterovesical strictures after reimplantation surgery treated by high pressure balloon dilatation. Clinical data, renal function, surgical records, dilatation technique, postsurgery complications and ultrasonographic and isotopic data (pre and post dilatation) were evaluated.

RESULTS

Five patients were treated in our department: 4 of them had a Cohen procedure, 1 had a Politano-Leadbetter surgery and 2 of them had ureteral tapering. In all the patients, ultrasound studies presented progressive ureterohydronephrosis. Diuretic renogram was obstructive with T ½ > 20 minutes that was unilateral in 4 patients and bilateral in the patient with the Politano-Leadbetter procedure. Three patients presented lumbar pain and febrile urinary tract infection. Endoscopic treatment was started performing a retrograde pyelography after Cohen catheterization. High pressure balloon dilatation (2.7 Fr) with a nominal profile of 6 – 9 mm was used in all cases.

Median operative time was 30 (19 – 75) minutes and hospital stay was 24 hours in all patients except in the one with bilateral stenosis and febrile urinary tract infection (72 hrs). No intra or postoperative complications occurred. Postoperative renogram and ultrasound showed a significant improvement in elimination curves and dilatation ($p<0.05$) after a median follow-up of 5 years (2 – 8).

CONCLUSIONS

Endoscopic dilatation of strictures secondary to ureterovesical reimplantation is technically feasible and allows good long-term results. Given its low complication rate, it should be considered as the initial treatment of these patients.

11:32 – 11:35

S23-6 (PP)

ENDOSCOPIC INJECTION OF BULKING AGENT AROUND THE EJACULATORY DUCTS AT THE VERU MONTANUM FOR RECURRENT PEDIATRIC EPIDIDYMITIS

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Hopital La Timone Enfant, Pediatric surgery, Marseille, FRANCE

PURPOSE

Pediatric recurrent epididymitis is frequently observed in several urogenital conditions and may result in long-term fertility deterioration. For the pediatric urologist, the management of recurrent epididymitis is still a therapeutic challenge and there is no consensus. The current discussion for management of recurrent epididymitis is mainly based on vas clipping. We present a minimally invasive endoscopic approach for the treatment of recurrent epididymitis (>3 episodes).

MATERIAL AND METHODS

A retrospective case series was performed reviewing the medical records of 11 boys (8 months to 14.7 years old) who were referred with a history of recurrent epididymitis in a context of urogenital malformations. All children underwent endoscopic transurethral injection. Dextranomer/hyaluronic acid was injected around the ejaculatory ducts at the verumontanum. The medical records and outcomes of the patients were retrospectively reviewed.

RESULTS

Of the 11 boys, 2 (18 %) had a history of bladder exstrophy, 3 (27 %) anorectal malformation, 2 (18 %) peno-scrotal hypospadias, 2 (18 %) posterior urethral valves, 1 (9 %) seminal vesicle cyst and 1 (9 %) urethral stricture. Median age at injection was 3.75years (8 months to 14.7years). Endoscopic injection did effectively prevent recurrence in 73 % of patients (8/11) with a median follow-up of 3 years (ranged 6 months-8.8 years). Mean injected volume was 0.7 ml/session. No perioperative complications were recorded. Vas clipping was performed in 3 patients after unsuccessful injections.

CONCLUSIONS

Endoscopic injection of bulking agent in the verumontanum may be considered a safe and effective treatment in 73 % of children with recurrent epididymitis.

11:35 – 11:44

Discussion

S24: STONES 1

Moderators: Serkan Dogan (Turkey), M.S. Ansari (India)

ESPU Meeting on Saturday 14, April 2018, 11:44–12:16

11:44–11:49

S24-1 (LO)

ARE THE ADULT STONE SCORING SYSTEMS USEFUL TO PREDICT THE SUCCESS AND COMPLICATION RATES IN PEDIATRIC PERCUTANEOUS NEPHROLITHOTOMY?

Burak CITAMAK, Berk HAZIR, Taner CEYLAN, Cenk Yucel BILEN, Hasan Serkan DOGAN and Serdar TEKGÜL

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PURPOSE

To compare of 3 different scoring systems [Guy's Stone Score (GSS), S.T.O.N.E. nephrolithometry score system and Clinical Research Office of the Endourological Society (CROES) score] which are used to predict complications and success of percutaneous nephrolithotomy (PCNL) in pediatric population.

MATERIAL AND METHODS

The data of 401 renal units (345 patients) which underwent PCNL between 1997–2017 were analyzed. A. Patient demographics, calculated scores for three scoring system, stone free rates, bleeding and complications without bleeding were analyzed with Mann-Whitney and chi-square test.

RESULTS

Male to female ratio was 236/165 and median age was 8 (1–16). For stone free patients and the remainders, the median scores of GSS were 2 (1–4) and 2 (1–4), S.T.O.N.E scores were 5 (4–9) and 6 (4–9), CROES scores were 182 (50–290) and 160 (67–281), respectively ($p= 0.001$, $p=0.012$, $p<0.001$). For patients with and without complications, the median scores of GSS were 2 (1–4) and 2 (1–4), S.T.O.N.E scores were 5 (4–9) and 6 (4–9), CROES scores were 240 (50–290) and 162 (67–280), respectively ($p=0.009$, $p=0.792$, $p=0.004$).

All three scoring systems were able to predict the success. However, the risk of bleeding was predicted by only CROES system ($p=0.013$). S.T.O.N.E was not able to predict any kind of complications where CROES and Guy's scores were able to predict overall complication risk.

CONCLUSIONS

These all three scoring systems those were developed in adult patients were found to be able to predict the success also in pediatric group. GSS and CROES were found to be useful to predict overall complication where CROES was the only system to predict bleeding risk. This difference may be due to the described adult parameters and it would be better to modify the parameters for children.

11:49 – 11:52

S24-2 (PP)

SPONTANEOUS PASSAGE OF <=1CM URETERAL STONES IN CHILDREN: IS THERE A PREDICTING FACTOR?

Ahmet Midhat ELMACI[1], Muhammet Irfan DONMEZ[2], Fatih AKIN[3] and Metin GUNDUZ[4]

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PURPOSE

To analyze if there were any factors that could predict spontaneous passage of ≤1 cm ureteral stones in children.

MATERIAL AND METHODS

The files of the patients diagnosed with ureteral stone between 2008–2017 from two different hospitals were retrospectively reviewed. Detection of ureteral stones were done using ultrasonography and computed tomography when needed. Patients were either conservatively or surgically managed. Conservative treatment included adequate hydration and pain management whereas surgical treatment included ureterorenoscopic intervention. Patients were referred for surgical treatment after 15 days of follow-up with no spontaneous passage. Factors such as; age, gender, type of hematuria (macroscopic/microscopic), presence of dysuria, abdominal/side pain, irritability, vomiting, stone localization (proximal/mid/distal ureter), laterality, presence of concomitant kidney stone, degree of hydronephrosis, stone size and stone composition were analyzed.

RESULTS

A total of 70 patients (32 males, 38 females; mean age 5.5±4.4 years) were found to have been diagnosed with ≤1 cm ureteral stone (mean maximum diameter 6.7±2.3 mm). Diagnosis was made using ultrasonography in 47 patients and computed tomography in 23 patients. Spontaneous passage of the ureteral stone was observed in 40 patients. Stone composition of 22 patients were available (17 calcium oxalate, 4 cystine, 1 uric acid). Stone size was found to be the only factor that could predict spontaneous passage (5.19±1.59 vs 8.90±1.27, $p<0.001$). Interestingly, stone localization was not shown to predict spontaneous passage. Additionally, there were no significant difference between age groups (0–5 vs 5–15 years, $p>0.05$).

CONCLUSIONS

In our study, spontaneous passage of ≤1 cm ureteral stones in children could be predicted solely with stone diameter. Therefore, expectant management strategies should be initially followed in patients with ureteral stones <7 mm.

11:52 – 11:58

Discussion

11:58 – 12:01

S24-3 (PP)

COMPOSITION OF STONES AND METABOLIC RISK FACTORS IN INFANTS. AN ENDEMIC COUNTRY EXPERIENCE

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PURPOSE

Pediatric urolithiasis remains endemic in low resource countries where infants constitute 17 – 40 % of all children with urolithiasis. This study reports socio-economic factors, medical history, chemical composition and metabolic risk factors in 1437 infants upto the age of 2 years from an endemic country.

MATERIAL AND METHODS

Between 1982 – 2016, 1437 infants presented to our institute with 1217 stones. Patients were evaluated for demographics, blood and 24 h urine for calcium, magnesium, phosphate, uric acid, electrolytes and additional protein, citrate, ammonia and oxalate in urine. Chemical composition of stones was analyzed by Fourier transformation infrared spectroscopy (FTIR). All reported values were two sided and statistical significance was considered at p value <=0.05.

RESULTS

The mean age of infants was 17.5±6.24 months with a M:F ratio of 5:1. Nearly half (50 %) of the infants were rural dwellers, 92 % belonged to low socio-economic class and 70 % were malnourished. A history of chronic diarrhoea was reported in 17 % and urinary tract infections in 8 %. Overall frequency of compounds in stones showed Ammonium acid urate (AAU) in 75 %, Calcium Oxalate (CaOx) in 40 %. Uric Acid (UA) in 12 %, Calcium phosphate apatite (CaP) in 7 %, Magnesium ammonium phosphate (Struvite) in 5 %), Cystine in 1 % and Xanthine in 5 %. Urinary metabolic abnormalities showed Hypocitraturia in 84 %, hyperoxaluria in 26 %, hyperuricosuria in 52 %, hyperammonuria in 14 %, hyponatriuria in 49 % and hypovolemia in 50 %.

CONCLUSIONS

Our study has shown that AAU is a major component of stones in infants where the main risk factors are poverty, malnutrition, diarrheal diseases and dehydration.

12:01 – 12:04

S24-4 (PP)

THE ROLE OF METABOLIC EVALUATION IN PEDIATRIC PATIENTS WITH UROLITHIASIS

Alfredo BERRETTINI[1], Francesca TARONI[2], Mirella MOGIATTI[1], Giuseppina MARRA[2], Dario Guido MINOLI[1], Erika Adalgisa DE MARCO[1], Giovanni MONTINI[2] and Gianantonio MANZONI[1]

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PURPOSE

Urolithiasis is a rare and underestimated condition and its incidencehas increased in the last few decades. In pediatric age, more often than in adults, it can be linked to pathologies that could determine irreversible damage of renal function. Moreover, sometimes urolithiasis may be the first manifestation of major metabolic and genetic diseases. Thus, It is important to diagnose the precise pathology and to define specific medical and surgical treatment.

MATERIAL AND METHODS

Data from patients regularly followed up in our clinic from 2007 – 2017 for urolithiasis were retrospectively reviewed to assess the prevalence of rare diseases and to evaluate possible associated risk factors. We included only those patients (142 out of 190) who completed the metabolic evaluation: renal function, acid-base balance, PTH, vitamin D, urinary electrolytes, oxaluria, urinary cystine, citrate and uric acid. All patients underwent an abdominal US and X-ray.

RESULTS

Nephrolithiasis was secondary to a rare disease in 29 patients (20 %) (Table 1). The most common clinical presentation was flank/abdominal pain in 60 patients (42 %). In children with rare diseases the only risk factors that appeared statistically significant ($p < 0.05$) were the age < 4 years old (p:0.000003), male sex (p:0.026834), nephrocalcinosis (p:0.000033), stone >1 cm ($p < 0.05$) and bilateral stones (p:0.00001) (Table 2).

CONCLUSIONS

20 % of patients with urolithiasis had an associated rare disease. In the presence of risk factors extended investigations are mandatory in order to exclude a potential rare disease.

Rare Disease	N. 29
Cystinuria	21
APRT Deficiency	2
Hypersensivity to Vitamin D	2
Xantinuria	1
Lesh Nhyan	1
Dend Syndrome	1
Oxalosis	1

12:04–12:07

S24-5 (PP)

FATE OF RESIDUAL STONE FRAGMENTS IN CHILDREN: IS THERE ANY CUT-OFF BETWEEN SIGNIFICANT AND INSIGNIFICANT

Sadaf ABA UMER KODWAVWALA, Bashir AHMED, Sajid SULTAN and Adeeb Ul Hasan RIZVI

Sindh Institute of Urology & Transplantation, Philip G. Ransley Department of Paediatric Urology, Karachi, PAKISTAN

PURPOSE

To determine the outcome of residual stone fragments (RF) post ESWL,in terms of stone passage/ disappearance,stone regrowth,static size,symptoms/interventions required.

MATERIAL AND METHODS

Retrospective review of prospectively collected data of 102 Renal Units (RU) who underwent ESWL between 2012–2016 and had RF upto 6 mm (on USG +/- plain xray KUB), three months after last session. Statistical analysis was done on SPSS v.20 by using chi-square test.

RESULTS

Of the 102,8 were lost to follow up,leaving 94 RU with RF upto 6 mm. Median follow-up of 17 months(6–55 mon). Mean age was 6.6+/-3.8 years with M:F,2.1:1. In 82 %, RF were located in lower calyces. Ninty-one percent received metaphylaxis. RU were divided into 4 groups: Group I. <=3 mm(n=22), Group II. 4 mm (n=18), Group III. 5 mm(n=28) and Group IV. 6 mm (n=26). RF disappear in 31/94(33 %),of which 35.5 % were in Group I and 12.9 % in Group IV (p=0.06). Re-growth was observed in 11/94 (11.7 %),of which 54 % were in Group IV (p=0.07). In 40 % RF remained static in size (p=0.45). Seven units(7.4 %)needed intervention for stone migrated into the ureter (alpha blocker=2, Ureterorenoscopy=5).

Outcome parameters were compared to determine cut-off between significant and insignificant RF but no such cut-off size found on which all parameters become significant. However when RF <=5 mm were compared with 6 mm, stone disappearance was significantly more in 5 mm RF group (p=0.02) whereas stone regrowth was significantly higher in 6 mm group (p=0.03) but this was not enough for cut-off size, as fragment <=5 mm required intervention in 7.4 % as compared to 7.7 % in 6 mm (p=0.9).

CONCLUSIONS

Patients with RF of any size after ESWL require close follow up and timely intervention if needed. As the fragment size increases from 5 to 6 mm, chances of stone regrowth increase and clearance decrease. However RF of >3 mm can become symptomatic or require intervention any time during follow up, therefore it is difficult to draw any cut off between significant and insignificant RF in children.

12:07–12:16

Discussion

S25: STONES 2

Moderators: Sajid Sultan (Pakistan), Annabel Paye-Jaouen (France)

ESPU Meeting on Saturday 14, April 2018, 12:16–12:48

12:16–12:19

S25-1 (PP)

OUTCOMES OF FLEXIBLE URETEROSCOPIC LITHOTRIPSY FOR TREATMENT OF KIDNEY STONES IN INFANTS

Wenying WANG, Jun LI and Ye TIAN

Beijing Friendship Hospital, Capital Medical University, Urology, Beijing, CHINA

PURPOSE

We evaluated the outcome of flexible ureteroscopic lithotripsy for treatment of kidney stones in infants.

MATERIAL AND METHODS

One hundred and seventy-five infants with kidney stones were included in this study: 105 boys and 70 girls. The median age was 16 months (range, 3–36 months). Sixty-five patients had left-side calculi, 68 of them had right-side calculi, and 42 had bilateral calculi. The median diameter of the calculi was 1.8 cm (range, 1.0–3.2 cm). Retrograde intrarenal surgery was performed by an 8 Fr/30 cm flexible ureterorenoscope (POLY®) combined with a holmium laser. CT scanning or radiography of the kidneys, ureters, and bladder (KUB) region was performed one month after the operation to confirm the clearance of calculi.

RESULTS

All the 175 infants with calculi in 217 sides underwent flexible ureteroscopic lithotripsy. The median operation time was 32 min (range, 10–90 mins). The median amount of flushing fluid was 550 mL (range, 100–1400 mL). The stone-free rate after a single session treatment was 92.2 % (200/217), within which 15 infants underwent simultaneous bilateral flexible ureteroscopy lithotripsy. Catheters were retained for 24–48 hours after the operation. Continuous high fever due to reflux (39–40 °C, 3–5 days) was present in seven cases. Flushing fluid extravasation was found in two infants. Some patients with minor complications, such as mild hematuria, irritation symptoms, and low fever, recovered without treatment. The duration of hospitalization time after the operation was approximately 1–7 days.

CONCLUSIONS

Flexible ureteroscopic lithotripsy is a safe, highly efficient, minimally invasive, and reproducible operation for removal of renal calculi in infants. This technique is a convenient method for postoperative management of patients that enhances their rapid recovery.

12:19–12:22

S25-2 (PP)

MICRO-URETEROSCOPY FOR THE TREATMENT OF DISTAL URETERAL CALCULI IN CHILDREN UNDER TWO YEARS OLD

Anna BUJONS, Erika LLORENS and Andres KANASHIRO

Fundació Puigvert, Pediatric Urology Unit, Barcelona, SPAIN

PURPOSE

To demonstrate the efficacy and safety of micro-ureteroscopy (microURS) in the management of distal ureteral stones in children under two years old.

MATERIAL AND METHODS

A prospective study was carried out in 6 children, who had undergone micro-URS between November 2015 and April 2016 with the indication of distal ureteral calculi: The indications were: two cases in which fragments remained in the distal ureter after SWL, two cases of steinstrasse and 2 cases of ureteral distal stones. The procedures were performed with the patient in the lithotomy position under general anesthesia using the standard URS technique with a micro-ureteroscope that has a caliber of 4.85 Fr all along its length use of 200µ holmium laser fiber to fragment stones in relevant cases and the 1.8 Fr basket nitinol. Demographics, perioperative data, and outcomes were assessed.

RESULTS

Right (n = 2) and left (n = 4) ureteral stones were detected in the respective number of patients. The mean age of the children was 12.1 months (range, 6–24 months). The median stone size was 10 mm (range, 5–13 mm). The median operative time was 36.8 min (range, 20–60 min. In no case the placement of Double J catheter was required. As a postoperative complication mild hematuria (Clavien grade 1) was observed in one case and resolved spontaneously. Intraoperative minor or major complication did not occur in any of the cases. The mean hospitalization time was 24 h (range, 24–48 h). Stone-free status was accomplished in all patients in the final assessment.

CONCLUSIONS

The outcomes of micro-URS can be used safely and effectively in the treatment of distal ureteral stones in children under two years old. Further prospective and comparative studies comparing instruments of different sizes are warranted.

12:22–12:28

Discussion

12:28–12:31

S25-3 (PP)

COMBINED USE OF FLEXIBLE URETEROSCOPY WITH MICRO-PERCUTANEOUS NEPHROLITHOTOMY IN PEDIATRIC MULTIPLE KIDNEY STONES: A SINGLE TERTIARY CENTER EXPERIENCE IN CHINA

Wenying WANG, Jun LI and Ye TIAN

Beijing Friendship Hospital, Capital Medical University, Urology, Beijing, CHINA

PURPOSE

This study is to investigate the effectiveness and reliability of combined use of flexible ureteroscopic lithotripsy (FUL) with micro-percutaneous nephrolithotomy (micro-PNL) for the management of pediatric multiple kidney stones with extensive distribution.

MATERIAL AND METHODS

In total, 21 pediatric patients with multiple renal calculi between Feb 2016 and May 2017 were selected for FUL combined with micro-PNL. The cases included 13 boys and 8 girls; patients' mean age was 3.8 years (range 1–8 years); and The maximum diameter of the stones ranged from 1.0 to 1.5 cm. FUL was first performed in the lithotomy position to fragment stones that were located in the renal pelvis, upper and mid renal calyx. Patients were then moved to a prone position and micro-PNL was performed to treat lower pole stones which could not be touched by flexible ureteroscope during FUL. Percutaneous renal access to the lower calyx was achieved using a 4.8F "all seeing needle" with ultrasound guidance, and stone fragmentation was performed with a 200-um holmium laser in different setting to achieve dusting of fragments of 1–2 mm according to stone disintegration.

RESULTS

All the pediatric patients with complex renal calculi underwent a combined FURS and micro-PNL successfully. The one-phase stone free rate (SFR) was 85.7 % (18/21). According to the modified Clavien classification, Grade 1, Grade 2, Grade 3b postoperative complications occurred in 6, 1, and 1 patient respectively. The mean hemoglobin drop was 0.4g/dl (0.1–0.8g/dl). The average hospital stay was 3 days (range, 2–5 days).

CONCLUSIONS

Combined FURS and micro-PNL is a safe, effective, minimally invasive operation to remove complex renal calculi in children in selected cases.

12:31–12:34

S25-4 (PP)

PCNL IN PEDIATRIC PATIENTS WITH DERANGED RENAL FUNCTIONS: SAFETY AND EFFICACY

Sherjeel SAULAT, M. Murtaza AZAD, Anees SOOMRO and Syed Saeed QADRI

Tabba Kidney Institute, Paediatric Urology, Karachi, PAKISTAN

PURPOSE

The purpose of this study is to assess the effectiveness of PCNL in children with deranged renal functions and to compare the safety and efficacy of PCNL in these patients with those having normal renal functions.

MATERIAL AND METHODS
Retrospective data for patients treated with percutaneous nephrolithotomy in a 3 year period were collected. Patients were divided into 2 groups by creatinine level, cutoff was set on 0.7. The patients who had creatinine level of <= 0.7 labeled as normal GFR (group 1) while > 0.7 level categorized as decreased GFR (group2). Normality was checked by Shapiro wilk test. Association of categorical variables was established by chi square test, Patient characteristics, Operative characteristics, outcomes and morbidity were assessed.

RESULTS
We evaluated 307 children in which male were 202(65.8 %) while female were 105(34.2 %), median age was 7. Median operative time was 80 minutes while median duration of stay in hospital was 4 days. Median length of stone was 1.5 cm while breadth was 1.3 cm. Most of stones were located in pelvic region (266), followed by 131 in lower calyx, 49 were in upper calyx and 40 were in mid calyx. In 301(98 %) patients single tract was made while double tract was made in 6(2 %) patients. Post-operative complications like need of blood transfusion, fever, pleural tap and urosepsis were not associated with deranged renal function (p value ≥ 0.05). Complete stone free rate was less in patients with decreased renal functions (p value=0.027). Pre-operative and post-operative differences of HB, HCT and creatinine levels were same in both groups of patients (p value ≥0.05).

CONCLUSIONS
PCNL is an effective feasible intervention for patients with chronic renal insufficiency and acceptable complication rates. Therefore, careful patient selection and through surgical practice is required to yield favorable outcomes.

12:34 – 12:39

S25-5 (VP)

MINI PCNL AND MINI ECIRS WITH THE CLEARPETRA SYSTEM IN A PEDIATRIC COMPLET STAGHORN STONE

Erika LLORENS[1], Jose CARPIO[1], Oriol ANGERRI[2] and Anna BUJONS[1]

1) Fundacio Puigvert, Pediatric urology Unit, Barcelona, SPAIN - 2) Fundacio Puigvert, Lithiasis unit, Barcelona, SPAIN

PURPOSE
We present a complete staghorn stone treated with mini PCNL and mini ECIRS using ClearPetra system. The ClearPetra System for Continuous Flow Lithotripsy is designed for the effective and efficient treatment of urinary stones using Negative Pressure Aspiration through an oblique side port on the ClearPetra sheath. It has high stone clearance rate, reduces the intra-luminal pressure in the urinary tract, prevents stone retropulsion, improves visual field, obviates the need of stone baskets, forceps, or any anti-retropulsion devices, and saves operating time.

MATERIAL AND METHODS
Supine Mini PCNL was performed on an 8-year-old male patient with a CT scan showing a right sided complete staghorn stone with a density of 1100HU. ClearpetraR 12 – 14Fr aspiration sheath was used. Dusting was performed with the LumenisR PulseTM 120H holmium laser using a 550um laser fiber. Three weeks after first surgery an mini ECIRS was performed in the Valdivia-Galdakao position via Clearpetra sheath percutaneously and using the Storz Flex-Xc ureteroscope retrogradely. A nefrostomy tube and ureteral cateter were placed at the end of surgery.

RESULTS
Mini PCNL and mini ECIRS were successfully performed. The former surgery took 180 minutes and the latter 150 minutes. We did'nt found any difficulty with fragment aspiration during dusting with ClearPetraR sheath. The nephrostomy tube was removed in the 2nd post operative day (POD) and the ureteral cateter 3 weeks later. Patient was discharged at the 4th POD in both cases. Stone analysis demonstrated a struvite stone. The KUB X-ray after surgery showed a small residual fragment that was treated with ESWL.

CONCLUSIONS
ClearPetraR sheath is a valuable tool in the era of small accesses. The vision and aspiration during dusting accelerated the procedure in a complete staghorn stone. Further clinical evaluation and procedures are needed.

12:39 – 12:48
Discussion

S26: AUGMENTATION / DIVERSION

Moderators: Raimund Stein (Germany), Mark Cain (USA)

ESPU Meeting on Saturday 14, April 2018, 12:48 – 13:36

12:48 – 12:53

S26-1 (LO)

★ DEMUCOSALIZED SIGMOID BLADDER AUGMENTATION AND THE REDUCTION OF MUCUS: A COMPARATIVE INTERNATIONAL MULTICENTRIC PROSPECTIVE STUDY

Ricardo ZUBIETA[1], Juan Pablo CORBETA[2], Pedro Jose LOPEZ[1], Francisco REED[1], Francisca YANKOVIC[1], Alejandra RIOS[1], Juan Carlos LOPEZ[2] and Nelly LETELIER[1]

1) Hospital exequiel Gonzalez Cortes & Universidad de Chile, Paediatric Urology, Santiago De Chile, CHILE - 2) HOSPITAL GARRAHAN, Paediatric Urology, Buenos Aires, ARGENTINA

PURPOSE

For the last 25 years our center have been performing demucosalized sigmoid enterocistoplasty to our patients. It seems that this technique offers a better outcome because it might be is associated with less mucus production avoiding its associated complications. The aim of this study was to compare mucus production after enterocistoplasty with or without removing mucosa in two groups of patients.

MATERIAL AND METHODS

With ethical committee approval a comparative prospective study of mucus production in two different groups of patients following an enterocistoplasty was done. All patients had more than 5 years follow-up. Patients presenting with recurrent urinary tract infection were excluded. Group "A" included patients with ileocistoplasty and non-demucosalized colon and group "B" patients with demucosalized sigmoid. First morning urine was taken through urethral catheterization or through urinary continent derivation. In a wintrobe tube, 10 cc of urine were centrifuged at 2500 rpm for 10 minutes. A blinded microscopic analysis with mucus quantification and statistic analysis between both groups was made.

RESULTS

Seventy patients were included in this study (52 Group A and 18 Group B). Mucus amount for Group B was statistically lower (p=0.0061; CI 95 %). It is also highlighted, that all patients treated in Group A need daily bladder washout compared with patients from Group B whom did not performed bladder washouts.

CONCLUSIONS

A lower mucus amount and production in patients with demucosalized sigmoid enterocistoplasty was confirmed. This technique might offer a better long-term outcome, reducing mucus-related complications; i.e. stones formation and UTI.

12:53–12:56

S26-2 (PP)

OUTCOMES OF ORTHOTOPIC PAEDIATRIC NEOBLADDER RECONSTRUCTION

Alexander CHO, Naima SMEULDERS, Divyesh DESAI, Imran MUSHTAQ, Abraham CHERIAN and Peter CUCKOW

Great Ormond Street Hospital, Paediatric Urology, London, UNITED KINGDOM

PURPOSE

In the rare situation where native-bladder is unavailable, creation of a neobladder using a composite of different bowel segments is an option. We present our experience and outcomes with these patients.

MATERIAL AND METHODS

Retrospective cohort-study of paediatric-patients undergoing orthotopic neobladder reconstruction (1998–2016). Statistical-Analysis: Wilcoxon Signed-Rank Test.

RESULTS

18-patients (9F:9M); Median-age at reconstruction: 78(27–205) months.

Background:

- Complex cloaca with very small remnant/absent bladder x6
- Rhabdomyosarcoma:Bladder/Prostate x10; Pelvic x1
- Pre-sacral neuroblastoma x1

Operative-Notes:

Segment 1 "Bladder-Plate"	Segment 2	Numbers
Sigmoid	Distal-Ileum	6
Ileal-Caecum-Ascending Colon	n/a	2
Ileal-Conduit (8)	Transverse-Colon	1
	Sigmoid-Colon & Ileum	3
	Distal-Ileum	3
	Sigmoid-Colon	1
Colonic-Conduit	Mid-Ileum	1
Gastric-Segment	Distal-Ileum	1

Mitrofanoff Creation: Appendix 13 (2x in-situ); Ileal-Monti 4; Jejunal-Monti 1
Median stay (days): 11(7–70)
Significant adhesions found intra-operatively x7

Peri-Operative Complications:

- 2x: UTI-sepsis
- 1x Bladder-leak requiring re-operation with subsequent enterocutaneous-fistula requiring re-operation & prolonged TPN

Outcomes:

- Median follow-up(months): 57 (9–215)
- Upper-Tracts: Normal x8; Stable x10
- Renal Function: Stable (W-value 9.5, <3 significant). Median GFR pre-op=94, post-op=115.
- Perforation / Secondary Malignancy / Malabsorption – Nil episodes
- Continence:
  - Daytime: All dry - 16 pts CIC 3hrly in daytime; 2 patient CIC 3-4x/day

- Night-time: 3 without overnight drainage
- Median Functional Capacity:400 mls (300–600 mls)

- Further Surgery:
  - Bladder Calculi: x1 requiring PCCL
  - Mitrofanoff: 3pts; 3x revisions/3x injections
  - Revision Neobladder & Monti-Mitrofanoff x1
  - Planned renal transplant x2

CONCLUSIONS

Neobladder continent reconstruction is a good alternative for patients with unavailable native bladder with complications similar to those of ileocystoplasty in our hands.

12:56–12:59

S26-3 (PP)

STRICTURES OF THE URETEROENTERIC ANSTOMOSIS AND THE COURSE OF RENAL FUNCTION IN THE LONG-TERM OUTCOME AFTER URINARY DIVERSION USING THE ILEOCECAL SEGMENT IN CHILDREN AND ADOLESCENTS

Marina DEUKER[1], Axel HAFERKAMP[2] and Raimund STEIN[3]

1) University Hospital Frankfurt, Urology, Frankfurt, GERMANY - 2) University Hospital Mainz, Mainz, GERMANY - 3) University Medical Center Mannheim, Mannheim, GERMANY

PURPOSE

Long-term outcomes are of special concern after urinary diversion in children. In a single institution retrospective study we evaluated the long-term outcomes of urinary diversion in children and adolescents using the ileocecal segment in regard to the impact on renal function and comparing the course of creatinine from children with strictures of the ureteroenteric anastomosis to those without.

MATERIAL AND METHODS

Since the implementation of the MAINZ-Pouch, the ileocecal segment was used (minimal follow-up: 5 years) in 125 children for continent urinary diversion.
Ureteric implantation was performed whenever possible in an antirefluxive manner.
Renal function was evaluated by postoperative creatinine and the course of creatinine was analysed by linear regression.

RESULTS

Median follow-up was 15.8 years (0,4–28.5years).
17 % (20 patients) developed a total of 34 strictures at the ureteroenteric anastomosis, 8 patients of them had multiple recurrence of ureteroenteric stenoses (up to 5 times).
To gain a reliable course of creatinine we evaluated all patients with at least 10 creatinine measurements during follow-up. We had 48 children with at least 10 creatinine measurements (range 0–81), among them were 7 children with ureteroenteric stenosis. We evaluated the course of creatinine with linear regression. We found a median linear regression 0,0213 (worsening of renal function) overall.
Surprisingly the children that developed a stricture of the ureteroenteric anastomosis were not worse in the course of creatinine (median linear regression 0,0085).

CONCLUSIONS
After a median follow-up of almost 16 years, 13–18 % of the patients developed an ureteroenteric anastomotic stricture. As already known, the continent diversion has a risk of worsening the renal function. Suprinsingly we found no worse outcome for those children that developed a stricture than those without this complication.
These findings emphazise the need for lifelong and regular urological surveillance of these children. Because if fastly treated, the appearance of ureteroenteric stenosis does not compellingly lead to a worsened renal function.

12:59–13:08
Discussion

13:08–13:11
S26-4 (PP)

THE CAUSES AND CONTEXT OF BLADDER REAUGMENTATION IN CLASSIC BLADDER EXSTROPHY RECONSTRUCTION

Karl BENZ[1], John JAYMAN[1], Mahir MARUF[1], Timothy BAUMGARTNER[1], Matthew KASPRENSKI[2] and John GEARHART[1]

1) Johns Hopkins Hospital, Charlotte Bloomberg Children's Hospital, Baltimore, MD, USA, Robert D. Jeffs Division of Pediatric Urology, Baltimore, USA - 2) Johns Hopkins Hospital, Charlotte Bloomberg Children's Hospital, Baltimore, MD, USA, Pediatric Urology, Baltimore, USA

PURPOSE
Following a successful primary closure in patients with classic bladder exstrophy (CBE), an augmentation cystoplasty (AC) may be required if the bladder continues to have low capacity. Never addressed in the literature to date, this study aims to characterize the causes of reaugmentation in this unique population.

MATERIAL AND METHODS
A prospectively-maintained institutional database of 1311 exstrophy-epispadias complex patients was reviewed for CBE patients who have undergone more than one AC procedure. Data regarding bladder capacities and reason for reaugmentation were evaluated.

RESULTS
A total of 166 CBE patients underwent AC. Of these, 18 (11 %) patients underwent a reaugmentation. The median age at initial AC was 60 months [IQR 41–78]. The median age at reaugmentation was 108 months [IQR 95–138]. The median time between the initial AC and reaugmentation was 55 months [IQR 39–82]. There were several indications for reaugmentation including continued small bladder capacity (15/18), inadequate bladder necks (4/18), leaking stomas (3/18), a penile fistula (1/18). The sigmoid colon was the most commonly used bowel segment in initial AC (7 patients), while the ileum was the most commonly used segment during reaugmentation (12 patients). The median bladder capacity prior to reaugmentation was 150 mL (range 60–350 mL) and 550 milliliters (range 150–950 mL) after reaugmentation.

CONCLUSIONS
The applications of bladder reaugmentation are rare in this subgroup of patients. Nevertheless, it is most commonly required in the setting of a small bladder capacity after an initial AC. Small bladder capacity after the initial AC is most commonly seen in bladders leaking urine after a bladder neck procedure.

13:11 – 13:14

S26-5 (PP)

EPIDURAL ANALGESIA DECREASES NARCOTIC REQUIREMENTS IN LOW LEVEL SPINA BIFIDA PATIENTS

Joshua ROTH[1], Rosalia MISSERI[1], Stephanie WHITTAKER[2], Francesca MONN[3], Aali SHAH[2], Nicole HORN[2], Mark CAIN[1] and Morton GREEN[2]

1) Riley Hospital for Children, Urology, Indianapolis, USA - 2) Riley Hospital for Children, Anesthesia, Indianapolis, USA - 3) Indiana University Health, Urology, Indianapolis, USA

PURPOSE

Epidural analgesia use in low level spina bifida patients (LLSB) during labor and delivery has been reported, however, its post-operative use has not been studied or reported. We hypothesize that thoracic epidural placement in the T9-T10 interspace is safe and decreases narcotic requirements in LLSB following open lower urinary tract reconstruction (LUTR).

MATERIAL AND METHODS

We retrospectively reviewed consecutive LLSB who had LUTR and received epidurals at our institution from 4/16 to 10/17. We matched controls with LLSB who received tap blocks with similar procedures from 12/13 – 10/17. Ropivicaine 0.2 % was infused at a rate of 0.4 mg/kg/hr in epidurals. Patients received prn diazepam, acetaminophen, ketorolac and either IV narcotics or a patient controlled analgesia (PCA) pump. Opioid consumption was calculated utilizing equivalent IV morphine doses. Mean and maximum pain scores on post-operative day (POD) 0 – 3 were calculated. Descriptive statistics were performed.

RESULTS

10 LLSB who had LUTR and epidurals were matched to 10 LLSB who had LUTR and tap blocks at our institution. Groups were demographically similar. All had full abdominal sensation and functional levels at or below L3. Pain scores were the same or improved in the epidural group. The epidural group had decreased opioid consumption on POD 0 – 3 (0.80 mg/kg vs. 1.50 mg/kg, p=0.026). No epidural complications or changes in functional status were noted.

Patients with epidurals had significantly lower overall narcotic requirements when adjusting for age and PCA availability (p=0.042). Patients with a PCA used more narcotics when adjusting for age and epidural (0.029).

CONCLUSIONS

Thoracic epidural analgesia is a safe and effective option to assist with post-operative pain management following LUTR in LLSB.

13:14–13:19

S26-6 (LO)

★ BOTULINUM TOXIN TYPE-A INJECTIONS FOR THE TREATMENT OF CONTINENT CATHETERIZABLE RESERVOIR MUSCULARIS OVERACTIVITY IN PEDIATRIC PATIENTS

Luis SIERRA, Laia SABIOTTE, Erika LLORENS and Anna BUJONS

Fundació Puigvert, Pediatric urology Unit, Barcelona, SPAIN

PURPOSE

Continent catheterizable reservoirs can exhibit complications such as high pressures and involuntary unit contractions. The use of onabotulinum toxin-A injections could be a treatment to explore. The purpose is to evaluate the efficacy and safety of intravesical injection of onabotulinumtoxinA (BOTOX) as a treatment in the management of overactive bladder in patients with continent catheterizable reservoirs.

MATERIAL AND METHODS

A prospective study was carried between 2013–2016 to evaluate the efficacy of botulinum toxin treatment in pediatric patients with mean age of 14 years old (R 8–16) with muscularis overactivity in continent catheterizable reservoirs after failing maximal doses of oral anticholinergic medications. Urodynamic studies demonstrated phasic neobladder overactivity: 95 mL (up to 40 cm H2O) and 173 mL (up to 83 cm H2O with leakage).

These patients underwent reservoir injections under general anesthesia via appendicovesicostomy. The initial dose used was 200 units and was increased to 300 units in 20 separate injection sites to improve results and durability.

RESULTS

11 injections of BOTOX were performed in 6 patients. All patients improved their incontinence and urgence after BOTOX. Postinjection urodymamic studies showed normal filling with improvement of overactivity bladder. Mean time to relapse of symptoms after injection of BOTOX was 8 months (R6–12). There were no complications in any cases. Mean time to reinjection of botox was 14 months (R9–18). Average follow-up time 48 months (R 12–36).

CONCLUSIONS

Intravesical injection of BOTOX may be considered as a treatment option for overactive symptoms in patients with continent catheterizable reservoirs, although further studies are needed to verify the complications and long-term outcomes of this procedure.

13:19 – 13:24

S26-7 (VP)

LARPAROSCOPIC POSTERIOR APPENDIX MITROFANOFF UTILISING THE MODIFIED SHANFIELD ANASTOMOSIS

Eleni PAPAGEORGIOU and Abraham CHERIAN

Great Ormond Street Hospital for Children Nhs Foundation Trust, Department of Paediatric Urology, London, UNITED KINGDOM

PURPOSE

The formation of an appendix Mitrofanoff-channel is an established continent urinary conduit to achieve bladder emptying. In this video we present the laparoscopic technique for appendico-vesicostomy, using trans-umbilical approach, 3 mm instruments, two working ports, and a modified Shanfield anastomosis.

MATERIAL AND METHODS

A 5-year old boy with large residuals and hematuria was diagnosed as non-neurogenic neurogenic bladder and was suitable for a Mitrofanoff-channel formation.

Technique: The procedure is performed using a transperitoneal three-port approach. A 30-degree camera is inserted through a 5 mm trans-umbilical port. Two 3 mm working ports are triangulated to achieve optimal access to the appendix and bladder. The caecum is mobilised adequately. A transabdominal 2/0 PDS hitch stitch elevates the bladder. Posterior detrusorotomy and submucosal dissection follows. The appendix is detached from the colon preserving its pedicle. The proximal appendix is spatulated for 5 mm, pulled through a hiatus created in the distal vesical mucosa into the bladder using a U-stitch and fixed. Three additional stitches between the bladder mucosa and the appendix serosa secure the anastomosis. Closing the detrusor muscle, with a 10Fr Jacques catheter in the conduit, creates an anti-refluxing extra-mucosal tunnel. The tip of the appendix is brought out to the right iliac fossa and a VQ-plasty is fashioned.

RESULTS

The procedure was completed in 4 hours. Postoperative analgesia was provided with Fentanyl-NCA up to post-op day-4, paracetamol and oxybutynin. Oral intake was established on day-1 and the patient was discharged on day-5 without any complications.

CONCLUSIONS

The laparoscopic appendico-vesicostomy can be facilitated with minimal number of ports and the transumbilical approach utilises a natural scar. The anastomosis is simplified and the catheterisation is reliable as there is no mucosa-mucosa junction to negotiate.

13:24 – 13:36

Discussion

T&T: Special Session "TIPS AND TRICKS"

Moderator: Stuart O'Toole (UK)

ESPU Meeting on Friday 13, April 2018, 17:20–18:00

17:20–17:25

T&T-1 (VP)

TRICKS TO RETRIEVE A DOUBLE J STENT LOST IN THE URETER AFTER COHEN REIMPLANTATION IN A 2 YEARS OLD GIRL

Annabel PAYE JAOUEN

Hôpital Robert Debre, Chirurgie viscérale et urologie pédiatrique, Paris, FRANCE

PURPOSE

A 2 years old girl was operated for a left primary obstructive mega-ureter by a Cohen reimplantation. The surgeon had inserted a double J stent in the ureter 4 weeks. When the surgeon did the endoscopy to remove the JJ stent, it was not anymore in the bladder. The child was asymptomatic. Plain Xray showed the JJ stent with the two extremities in the ureter, the US scan showed a ureteral dilatation but no pelvic dilatation. Interventional antegrade percutaneous treatment was not feasible. The child was referred to our center for further management. We have decided to perform an endoscopic treatment with a percutaneous ureteroscopy of the reimplanted ureter. The simple guide wire insertion was impossible to introduce inside the ureter. So, we have decided to use double endoscopic procedures. transurethral cystoscope (9.5 Fr) was used to identify the reimplanted ureteral meatus then under cystoscopic vision, a 3-mm laparoscopic trocart was inserted percutaneous in the axes of the reimplanted ureter. Finally, a guide wire could be introduced through the meatus up to the renal pelvis. We also used two video units and a X ray control. Semi rigid 6fr ureteroscope was introduced through the 3 mm trocart and then the ureteral meatus. The retrieval was finally achieved by a 1.5 Fr Dormia catheter through the operating channel of the ureteroscope. The cystoscope and then the JJ stent was retrieved through the cystoscope. These maneuver was done using two video units and C-Arm. Foley catheter was left for 12 hours. The child was painless and discharged the next day after this procedure.

CONCLUSIONS

The association of both cystoscopy and percutaneous ureteroscope through 3 mm trocart solved our difficulties to retrieve a lost JJ stent without dilatation of the upper tract.
A video clip shows all the details of the procedure.

17:25–17:30

T&T-2 (LO)

TIPS AND TRICKS OF THE KOYANAGI PROCEDURE FOR SEVERE PROXIMAL HYPOSPADIAS, HOW TO REDUCE THE COMPLICATIONS RATE

Yutaro HAYASHI, Kentaro MIZUNO, Hidenori NISHIO, Taiki KATO

Department of Pediatric Urology, Nagoya City University

17:30–17:35

T&T-3 (LO)

LAPAROSCOPIC FLAP PYELOPLASTY IN INTRASINUSALLY LOCATED U-P JUNCTION

Radim KOCVARA, Josef SEDLACEK, Marcel DRLIK

Department of Urology General Teaching Hospital and Charles University 1st Faculty of Medicine, Prague

17:35–17:40

T&T-4 (LO)

URETHRAL RECONSTRUCTION BY USING MALE VAGINA AS A FREE GRAFT

Seppo TASKINEN

Helsinki University Hospital, Helsinki, Finland

17:40–17:45

T&T-5 (LO)

HORMONAL SUPPRESSION OF MINI-PUBERTY IN NEONATES WITH DSD

Martin KAEFER

Indiana University, Indianapolis, USA

17:45–18:00

Discussion

VD: VIDEO DISPLAY

ESPU Meeting

VD-1 (VS without presentation)

LAPAROSCOPIC URETEROCALICOSTOMY FOR MALROTATED DIFFICULT PUJ OBSTRUCTION

Mohammad BADER[1] and Abraham CHERIAN[2]

1) Great Ormond Street Hospital, Paediatric Urology, London, UNITED KINGDOM - 2) Great Ormond Street Hospital for Children NHS Foundation Trust, Paediatric Urology, London, UNITED KINGDOM

PURPOSE

Uretero-calicostomy can be particularly useful in children with unfavorable PUJ anatomy i.e high PUJ in a malrotated kidney, horseshoe kidney, complete intrarenal pelvis or in failed pyeloplasty.

MATERIAL AND METHODS

A 12-year old girl presented with a history of central abdominal pain and UTI. Ultrasound showed severe hydronephrosis (APD-39 mm) with marked calyceal dilatation and an intrarenal pelvis. DMSA confirmed 18 % function.

RESULTS

Transperitoneal laparoscopy was performed using two-3 mm working ports and a 5 mm transumbilical port for the telescope. A posterior facing high PUJ in a malrotated kidney was noted. Ureter and renal pelvis were exposed by reflecting the ascending colon. Proximal ureteric end was transfixed, ligated and divided. An anterior 2 cm vertical incision over the thinned out lower pole calyx was made using scissors and ureter spatulated. Uretero-caliceal anastomosis was completed in a running fashion using 6/0 Monocryl. The calyceal urothelium was clearly identified during the anastomosis. Standard 4.7 Fr JJ stent (removed in 6-weeks) and Foleys urethral catheter were left in situ. Patient was discharged in 48 hours following removal of catheter.

CONCLUSIONS

Laparoscopic uretro-calycostomy is a feasible, safe and useful technique in suitable or unusual PUJ anatomy. It can be achieved with just two-3 mm working instruments. The primary port through the natural umbilical scar in addition achieves good cosmesis.

VD-2 (VS without presentation)

ENDO-URETEROTOMY WITH CUTTING-BALLOON IN PRIMARY OBSTRUCTIVE MEGAURETER

Alberto PARENTE, Ruben ORTIZ, Laura BURGOS and Jose Maria ANGULO

Gregorio Marañon University Hospital, Pediatric Urology, Madrid, SPAIN

PURPOSE

In the last years, balloon dilatation has become a safe and valid alternative in the treatment of primary obstructive megaureter (POM). In this video we will demonstrate endo-ureterotomy using a cutting balloon for POM in case high-pressure balloon dilatation fails.

MATERIAL AND METHODS
For the technique, a 0.014 inch guide-wire is endoscopically inserted through the vesicoureteral junction (VUJ) and allowed to curl in the megaureter. A 4 or 5 mm atherotome-bladed cutting balloon (Cutting-Balloon®) is inflated in VUJ under fluoroscopy or cystoscopy control. Then, a 3 Fr JJ stent is placed for four weeks.

RESULTS
From January 2014 to January 2016, 21 patients were treated endoscopically for POM. In 3 patients (6 months to 3 years-old), balloon dilation was not possible, so it was performed endoureterotomy with Cutting-Balloon® resulting in the immediate and complete disappearance of the stenosis. Hospital stay was 24 hours and intra or postoperative complications were not found. In evolution, urinary tract infections disappeared and ureterohydronephrosis improved in all cases.

CONCLUSIONS
Patients with POM can be treated endoscopically by high-pressure balloon dilatation. In case a persistent ring does not respond to balloon dilatation, endo-ureterotomy could provide a valid and safe definitive treatment of POM.

VD-3 (VS without presentation)

URETHRAL MOBILIZATION AND PARTIAL GLANDAR DISASSEMBLY: A STEP-BY-STEP VIDEO

Antonio MACEDO JR[1], Tassia LOBOUNTCHENKO[2], Felipe DINI[2], Sergio OTTONI[2], Gilmar GARRONE[2], Riberto LIGUORI[2], Ricardo MARCONDES[2] and Marcela LEAL DA CRUZ[2]

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PURPOSE
We want to present in a step-by step video an alternative procedure for distal hypospadias consisting of urethral mobilization and partial glandar disassembly.

MATERIAL AND METHODS
A subcoronal circumcision was performed showing distal dysplasic urethra. The entire penis shaft was degloved and chordee tissue resected. Laterally to spongious tissue we incised the Buck's fascia on both sides releasing it from the corpora and created two glandar wings keeping however a small bridge of urethral plate to it. At this moment, the urethra advances cranially and both glandar wings can embrace the distal urethra with a more conical and physiological aspect of the glans. We sutured the urethra to the glans and finally performed the glans reconstruction.

RESULTS
Koff et al. published a modification of the Barcat technique known as extensive urethral mobilization and confirmed excellent cosmetic and functional results on 168 patients with only 3.5 % of the patients requiring reoperation. Mitchell & Blagi and Perovic et al. reported on complete penile disassembly for epispadia repair as a way to complete release of the rotation of the penis and treat dorsal chordee bringing the urethra to a more functional location. We were inspired by this procedure when we started doing extensive partial glandar disassembly in association with urethral mobilization. The rationale for this procedure is to avoid any suture, simply positioning the urethra distally without tension. The partial glandar disassembly teached us that it was possible to create a more conical and cosmetical glans.

CONCLUSIONS
We are convinced that this operation can be regarded as a genuine alternative to most cases of primary and redo distal hypospadias.

VD-4 (VS without presentation)

LAPAROSCOPIC EXTRAVESICAL URETERAL REIMPLANTATION TECHNIQUE AFTER FAILED-ENDOSCOPIC SURGERY FOR VESICOURETERAL REFLUX

Jenny ARBOLEDA, Oriol MARTÍN-SOLÉ, Sonia PÉREZ-BERTÓLEZ and Luis GARCÍA-APARICIO

Hospital Sant Joan de Déu, Pediatric Urology, Pediatric Surgery, Barcelona, SPAIN

PURPOSE

Ureteral reimplantation should be considered for treating persistent vesicoureteral reflux (VUR) after endoscopic treatment. Laparoscopic extravesical ureteral reimplantation is gaining popularity on recent years. We present a video of laparoscopic extravesical ureteral reimplantation after two failed endoscopic surgeries for VUR.

MATERIAL AND METHODS

A 2-year-old boy with persistent left grade IV VUR after two failed endoscopic treatments, with 22 % differential renal function on DMSA-scan was operated. The patient was placed in Trendelenburg position and a Foley catheter was inserted. Open trocar placement was done at the umbilicus (5 mm). The other two 3 mm trocars were placed along the lateral border of the rectus. The peritoneum was opened over the posterior bladder wall and the distal ureter was dissected, taking care not to damage the vas deferens. A transabdominal hitch suture through the bladder was used to expose its posterior wall. The position bladder through was marked with hook electrocautery and the muscle fibres were divided with sharp scissors until the mucosa bulged. The bladder was filled with physiological saline to expose and identify the mucosa, which facilited the detrusorraphy with 5–0 vicryl.

RESULTS

The Foley catheter was removed after 24 hours and the patient was discharged. The postoperative voiding cystourethrogram showed resolution of VUR

CONCLUSIONS

Laparoscopic extravesical ureteric reimplantation represents a feasible, safe and low morbidity technique for retreatment of VUR in children.

VD-5 (VS without presentation)

ROBOT-ASSISTED LAPAROSCOPIC DISMEMBERED URETERAL REIMPLANT WITH TAPERING

Diana K. BOWEN[1], Aseem R. SHUKLA[2] and Arun K. SRINIVASAN[1]

1) The Children's Hospital of Philadelphia, Division of Pediatric Urology, Department of Pediatric Surgery, Philadelphia, USA - 2) The Children's Hospital of Philadelphia, Division of Pediatric Urology, Department of Surgery, Philadelphia, USA

PURPOSE

Primary obstructive megaureter represents a challenging case robotically as the ureter is not only dilated but often tortuous and redundant. We demonstrate our technique for a robotic dismembered tapered ureteral reimplant, emphasizing the ureteral anastomosis and tapering components.

PATIENTS AND METHODS
An 11 year old male with a 5 month history of episodic flank pain and emesis was found to have left primary obstructive megaureter and underwent surgical correction. Two 5 mm instruments are used for the entirety of the procedure with an 8.5 mm camera port and no assistant port. A retrograde pyelogram is performed and double-J stent is placed prior to the robotic procedure. After dissection of the ureter, the detrusor tunnel is created with blunt dissection and judicious use of monopolar cautery, leading to the stenotic ureteral segment. The ureter is completely transected distal to the stenotic segment at the level of the ureterovesical junction first. This allows the ureter to be straightened, eliminating the tortuosity, and the redundant ureter excised to ensure a straight ureteral course to the bladder. The anastomosis is started with an absorbable 3–0 V-lock suture at 6 o'clock that holds the ureter on tension and defines the amount of ureteral tailoring necessary, facilitating ureteral tapering. The detrusor tunnel is then closed over the ureter after the anastomosis is completed with monocryl suture.

RESULTS
The patient was discharged on post-operative day 2, he remained symptom-free, and ultrasound four months post-operatively revealed minimal residual hydronephrosis and no ureterectasis.

CONCLUSIONS
Dismembered ureteral reimplantation with intracorporeal tapering for obstructive megaureter is advantageous with the robotic approach. In particular, our technique utilizes 5 mm instruments and does not require an assistant port, and addresses both the ureteral dilation as well as the tortuosity and redundancy of the ureter effectively.

VD-6 (VS without presentation)

MICROPERCTM KIT (POLYDIAGNOST, GERMANY) USED TO TREAT A URETERIC STONE IN A CHILD

Erika LLORENS DE KNECHT[1] and Anna BUJONS[2]

1) FUNDACIO PUIGVERT, Pediatric Urology Department, Barcelona, SPAIN - 2) Fundacio Puigvert, Pediatric Urolofy Department, Barcelona, SPAIN

PURPOSE
Minimally invasive interventions and the use of smaller caliber ureteroscopes in the treatment of ureteral stones decreases complication rates in children, for that reason are strongly preferred in urolithiasis during childhood. There exist multiple indications for the micropercutaneous nephrolithotomy set (MicroPerc™, (PolyDiagnost, Germany); unusual indications were described showing that it can be useful to treat lower ureteric calculi, without the need for ureteric dilation.

MATERIAL AND METHODS
We present the case of a 5-year-old male with a right pelvic stone of 1 cm. As the guidelines say, a pelvic stone of 10 to 20 mm can be treated with SWL as a first option. We performed a first shock wave lithotripsy session. The US control described low ectasia due to a distal ureteric fragment. We offered after no ejection, an active treatment and we performed a Micro-ureteroscopy. To performe it we used the MicroPerc™, kit, (PolyDiagnost, Germany) consisting in a 4.85F "All-Seeing Needle" that could easily pass through the meatus without dilatation, and the 3 ways connector that allowed the insertion of a 0.9 mm flexible micro-optic, irrigation system and a laser fiber. To achieve the stone fragmentation, we used a 200-µm Holmium:YAG laser fiber with settings of 0.8 J–12Hz. During the procedure, a C-arm fluoroscopy device was set.

RESULTS
The patient was discharged the day after the microURS, ejecting fragments, without any ureteric stent, hematuria neither pain.

CONCLUSIONS
MicroPercTM is a valuable and safe technique to treat ureteric stones that allows intubation of small ureters without need of dilation, with the limitation of a small work channel.

VD-7 (VS without presentation)

THE USE OF THE PORCINE MODEL AS PART OF A STRUCTURED -PROCEDURE SPECIFIC- ROBOTIC TRAINING PROGRAM IN PEDIATRIC UROLOGY

Achilles PLOUMIDIS[1], Alexandre MOTTRIE[2], Piet HOEBEKE[3] and Anne-Françoise SPINOIT[4]

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PURPOSE
Robotic-assisted surgery is the newest technique in minimally invasive surgery. Offering the precision of traditional open surgery and the shorter recovery time of minimally invasive surgery, robotic-assisted surgery is widely adopted in adult urology. Use of the robotic technology in the pediatric population has gained some popularity over the last years, creating a need for experienced laparascopic pediatric urologists to become familiar with the robotic platform.
This video demonstrates the use of the porcine model as part of a structured -procedure specific- robotic training program in pediatric urology.

MATERIAL AND METHODS
A robotic course designed for pediatric urologists familiar with laparascopy was created in order to practice on live porcine models. The two main robotic models available on the market (Da Vinci Xi and Da Vinci Si) were used to practice standard pediatric urology surgical procedures. Dual console was used by the proctors to guide the attendees through the procedures. Identical procedures were repeated two days on a row to monitor progression and to gain confidence about the procedures. The proctors were experienced robotic surgeons familiar with porcine models.

RESULTS
Each porcine model was used by two attendes, exchanging roles (console surgeon or bed-side assistant) guided by a proctor. The porcine model was placed in a decubitus position to allow training in the pelvis, maximizing the variety of possible procedures. Bilateral Extravesical Lich-Gregoire ureteric reimplantation, bladder auto-augmentation (detrusorotomy), Ureteric anastomosis and bladder neck reconstruction with fascial sling procedures were performed by the attendees with a self-reported feeling of improving skills.

CONCLUSIONS
Introduction of the robotic platform in the pediatric population might be facilitated by a structured training program. Live porcine models used to practice standard pediatric urology procedures seems to be adequate to gain confidence for practicing these procedures in children, as self-reported by the attendees.

VD-8 (VS without presentation)

ONE-STAGE Y-TYPE URETHRAL DUPLICATION REPAIR WITH PERINEAL SKIN FLAP

Diana K. BOWEN[1] and Arun K. SRINIVASAN[2]

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PURPOSE

Urethral duplication of the Y subtype is a rare anomaly. Many techniques have been described in case reports, most including two-staged repairs for long urethral defects. Our aim is to demonstrate a prone approach with a one-stage substitution urethroplasty using a perineal skin flap.

PATIENTS AND METHODS

The patient was a 20 month old male who had previously undergone circumcision and correction of scrotal transposition but was subsequently found to have a Y-type duplicated urethra. The dorsal urethra extended to an orthotopic meatus but was narrow and stenotic, while the supple ventral urethra coursed from the posterior urethra to the perineum adjacent to the anal verge in the midline. Given the nature of this fistulous Y-duplication, reconstruction was necessary. Exam under anesthesia revealed an intact rectal sphincter separate from the ventral urethra. After placement of a suprapubic catheter, surgery was approached in the prone position. The ventral urethra was separated from the anterior rectal wall and the midline incision was continued through the perineum anteriorly. A 2 cm x 1.5 cm perineal skin flap attached to the urethra was developed for use in reconstruction. Dissection revealed an atretic 3 cm segment of the dorsal urethra that transitioned to a normal tube within the pendulous urethra. The healthy ventral urethra with skin flap served as the rotated substitution urethra and onlay flap to reconstruct the channel over a 10 Charriere catheter in a tension-free manner.

RESULTS

The patient did well postoperatively with cystogram and retrograde urethrogram at 4 weeks confirming patency and remained clinically well at 7 month follow up.

CONCLUSIONS

We describe a one-stage technique for Y subtype urethral duplication in the prone position by rotation of the ventral urethra with perineal skin flap to a tension-free anastomosis. As always, long term follow-up is paramount.

VD-9 (VS without presentation)

RETROPERITONEAL ROBOT-ASSISTED LAPAROSCOPIC REPAIR FOR URETEROPELVIC JUNCTION OBSTRUCTION

Thomas BLANC, Pauline CLERMIDI, Henri LOTTMANN, Nathalie BOTTO, Luca PIO and Yves AIGRAIN

Hôpital Necker - Enfants Malades, Department of Pediatric Surgery and Urology, Paris, FRANCE

PURPOSE

Robot-assisted laparoscopic pyeloplasty (RALP) has been gaining acceptance among pediatric urologists. Few studies have evaluated the retroperitoneal approach of RALP. This video demonstrates a pyeloplasty for ureteropelvic junction obstruction with polar vessel.

MATERIAL AND METHODS

We performed a retroperitoneal robot-assisted laparoscopic in a 13-year-old boy (40 kg) with no past medical history. The child turned to be symptomatic (flank pain). The diagnosis of UPJO was confirmed by renal ultrasound (60 mm pyelocaliceal dilatation) and MAG-3 renal scan (severe impairment of renal function).

The child was positioned laterally. A 15 mm incision was made just above the iliac crest in the anterior axillary line. The retroperitoneal space was entered and created with the camera (8-mm; O°). Two other 8-mm robotic trocars were placed, with one assistant trocart. After opening Gerota's fascia, minimal dissection was done just to free the UPJ, and a traction suture, placed at the junction, was inserted through the abdominal wall. Due to aberrant polar vessels, the ureter was completely divided and the UPJ and the pelvis were delivered anterior to the vessels with the help of the traction suture. Then the ureteropelvic anastomosis (Anderson-Hynes pyeloplasty) was performed, using a 6–0 monofilament absorbable suture with a 3/8 circle needle. After stent placement, the posterior part of the anastomosis was completed. No drainage tube was left in situ.

RESULTS

Set-up time, from skin incision until the end of docking, was 54 min. Surgeon's console time was 141 min. Total operating time was 195 minutes with no resultant blood loss. He recovered well and was discharged home on postoperative day 1.

At 6 months, the patient remains without symptoms.

CONCLUSIONS

Retroperitoneal robot-assisted laparoscopic is feasible, safe and effective. It is an excellent option with ideal anatomical exposure.

VD-10 (VS without presentation)

TECHNICAL ADVANCEMENTS IN SCROTAL MOBILIZATION FOR CORRECTION OF PENILE CONCEALMENT

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PURPOSE

We have previously described a technique to correct penoscrotal webbing associated with penile concealment. Division of midline scrotal fat permits posterior scrotal repositioning and effectively eliminates the penoscrotal web without dividing it. The distal foreskin unfurls providing ventral shaft skin. We have modified this technique to achieve enhanced cosmesis.

MATERIAL AND METHODS

The penile base and penoscrotal junction are first carefully marked to ensure accurate placement of prepubic tacking sutures to achieve a normal penopubic junction. Leaving a generous 1.5 cm mucosal collar eliminates the risk of incorporating cicatrix in the shaft. Next, a ventral incision is made from the mucosal collar to insertion of the scrotal web without dividing the web. The penis is degloved to penopubic and penoscrotal junctions. Scrotal retraction exposes midline scrotal fat which is incised enabling posterior scrotal repositioning. Penopubic and penoscrotal junctions are defined and fixed with sutures ~ 4.5 cm from the tip of the glans. Scrotal repositioning unfurls ventral skin yielding appropriate coverage. Byars' flaps are created dorsally and sutured to the collar followed by ventral closure. Lateral skin is excised and the circumcision is completed with monofilament quadrant sutures followed by Dermabond.

RESULTS
Pre-operative dorsal/ventral shaft length asymmetry is effectively corrected by this technique. Likewise, better phallic exposure is achieved. Patients tolerate the procedure well without complications.

CONCLUSIONS
These additional modifications to our approach for correcting penile concealment enhance creation of a normal penopubic junction and achieve a cicatrix-free shaft. This technique is easily performed and should be considered when performing circumcision in the face of penile concealment.

VD-11 (VS without presentation)

MICROURETEROSCOPY FOR CORALLIFORM LITHIASIS IN CHILDREN

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PURPOSE
Miniaturization of the equipment for percutaneous renal surgery also allows its use for retrograde treatment of ureteral lithiasis, reducing pain, risk of ureteral damage, and the need of catheters after the operation. The MicroPerc 4.8 F sheath has been used to diagnose and treat ureteral pathologies in children. We present its use for the treatment of coralliform lithiasis in children.

MATERIAL AND METHODS
A 2-year-old girl was referred to our centre because of a right coralliform lithiasis. As background, she presented repetitive UTIs. MicroPerc set 4.85 F sheath was used to perform nephroureteroscopy, thus avoiding the need to dilate the ureteral meatus. Lithotripsy was performed successfully.

RESULTS
Surgical time was 92 minutes. The patient was discharged within the next 24 hours. There were no complications. Ultrasound performed at 8 weeks showed residual lithiasis less than 2 mm.

CONCLUSIONS
The use of microureteroscopy proved satisfactory in children. It allows diagnosis and treatment of large kidney stones in pediatric patients.

VD-12 (VS without presentation)

ENDOSCOPIC TREATMENT OF PEDIATRIC SINGLE SYSTEM BILATERAL URETEROCELE: CLINICAL SERIE OF AN UNUSUAL CONDITION

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PURPOSE

The ureterocele is a congenital anomaly of the distal lower ureter. Frequently associated with duplex kidney, pediatric bilateral orthotopic single system ureteroceles are a very uncommon condition. The aim of this video is to show a clinical series of pediatric patients with bilateral ureteroceles, successfully treated by an endoscopic route.

MATERIAL AND METHODS

Retrospective reviews of patients treated between 2011 and 2016. A total of 7 male patients were identified. 5 patients had antenatal hydronephrosis and postnatal studies had confirmed bilateral single system ureteroceles. Cases six and seven presented with acute pyelonephritis at age of 1 month and 2 years respectively. All patients were studied with ultrasonography and renal scintigraphy. Four had pre operative micturating cystourethrogram.

RESULTS

An endoscopic treatment was offered due to infection, progressive hydronephrosis and/or obstructive pattern at the renal scintigraphy. Eleven consecutive endoscopic punctures were performed at a median age of 9 months (range 2–27). In five patients bugbee diathermy was used. As shown in this video we have recently incorporated the Holmium Laser technology for the puncture. This technique is easy to reproduce and offers a more controlled ureterocele incision. After a mean 22 months (6–44) follow up, no complications were observed and all patients remain asymptomatic without use of antibiotics and with resolution of the hydronephrosis.

CONCLUSIONS

Bilateral pediatric single system ureterocele is a very rare condition. This video demonstrated successful endoscopic minimal invasive treatment in a consecutive series of seven patients. Holmiun Laser ureterocele cut offers an easy to perform technique with good outcomes.

VD-13 (VS without presentation)

LAPAROSCOPIC MANAGEMENT OF RENAL CYST USING SAND BALLOON CATHETER

Akiko SAKODA[1], Chizuka SEKI[2], Hiroko WATAYO[2], Ryusuke YAMAGUCHI[2], Yukari MAKI[2] and Osamu SEGAWA[2]

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PURPOSE

To demonstrate efficient and successful use of SAND balloon catheter for laparoscopic management of renal cyst.

MATERIAL AND METHODS
The patient was a-13-year-old girl. She was first presented with hematuria. Ultrasonography detected 5 cm simple renal cyst. The cyst was rapidly increased in size up to 8 cm in a year with low back pain. DMSA showed no deterioration of differential renal function. Laparoscopic resection of renal cyst was planned.

RESULTS
The patient was placed lateral decubitus position, 5-mm camera port was inserted at the umbilicus and other two 5-mm trocars were introduced. After mobilization of the kidney, SAND balloon catheter was directly injected into an appropriate point of the distended cyst wall percutaneously under laparoscopic guide. Distal balloon was gently inflated first and proximal balloon was expanded subsequently. The cyst wall was sealed by two balloons from inside and outside then fluid was extracted without leakage. SAND balloon catheter minimized the spillage of cystic contents. It was also used as an extra working instrument. The collapsed cyst was well controlled and the cyst was excused as much as possible with electric device and withdrawn via umbilical port. The patient was discharged 4 days after the surgery and no recurrence has been noted.

CONCLUSIONS
SAND balloon catheter is safe and efficient tool for laparoscopic surgery which could be used for other selected cystic lesions.

VD-14 (VS without presentation)

LAPAROSCOPIC URETEROURETEROSTOMY FOR RETROCAVAL URETER

Sonia PÉREZ-BERTÓLEZ, Oriol MARTÍN, Jenny ARBOLEDA, Andrea SORIA and Luis GARCÍA-APARICIO

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PURPOSE
A retrocaval ureter is a rare congenital anomaly that results from persistence of the right posterior cardinal vein in the lumbar portion, crossing anterior to the middle segment of the ureter. The aim of this video is to show the steps of a laparoscopic repair of retrocaval ureter.

MATERIAL AND METHODS
Case report.

RESULTS
A 8-year-old boy presented with progressive hydronephrosis of a solitary right kidney, with dilatation of the proximal ureter. The patient was operated on with a transperitoneal four ports approach under general anesthesia. A 10 Fr Foley catheter was inserted. Patient was placed in 30º left lateral position. Open trocar placement was done at the umbilucus (5 mm), the rest 3 mm ports were placed at epigastrium, right hypocondrium and right iliac phossa. The ascending colon was reflected medially to expose the retroperitoneum. The ureter was identified coursing posterior to the inferior vena cava. Then, the proximal right ureter was dissected and mobilized. The ureter was transected and transposed anterior to the inferior vena cava, excising the retrocaval portion. The distal ureter was spatulated. A 4.8 Fr double-J stent was inserted in an antegrade manner. A ureteroureterostomy was done with 5.0 vicryl by intracorporeal suturing. A closed suction drain was placed. Duration of the surgery was 100 minutes. The drain was removed after 72 hours and patient was discharged. Stent removal was done on the 2nd postoperative month. Postoperative follow-up with ultrasound showed significant reduction of hydronephrosis.

CONCLUSIONS
The laparoscopic approach is safe and feasible for these patients, with all the advantages of laparoscopy.

VD-15 (VS without presentation)

ROBOT ASSISTED LAPAROSCOPIC ADRENALECTOMY (RALA) IN A MORBIDLY OBESE CHILD WITH CUSHING'S SYNDROME

Aparajita MITRA[1], Rajiv PADANKATTI[1], Vijay Mahantesh SAMALAD[1], Thirumalai GANESAN[2], Vasantharoopan C[3] and Venkat SRIPATHI[1]

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PURPOSE
Adrenalectomy in a patient with Cushing's syndrome is fraught with problems and can be a surgical and anesthetic nightmare. We describe a robotic approach to a left adrenalectomy with emphasis on patient positioning, port placement and dissection technique.

MATERIAL AND METHODS
A morbidly obese (BMI >35) 13 year old girl presented with hypertension and hyperglycaemia. Endocrine and radiologic workup revealed a left adrenal adenoma. RALA was planned after physiological optimization. It was especially beneficial for this child where an open or conventional laparoscopic surgery would have been extremely difficult owing to a thick panniculus and increased visceral adiposity.

RESULTS
The console time was 100 minutes with minimal blood loss. Post-operative recovery was rapid although a prolonged hospital stay was necessary to observe the trend in blood pressure and for glycemic control. There was a weight loss of 2.5 kg, significant improvement in mobility and mood and a decrease in mean arterial blood pressure. The insulin requirement could be tapered and gradually discontinued. Serum Cortisol decreased from 30 to 17.

CONCLUSIONS
RALA should be the procedure of choice in a morbidly obese child with multiple co-moribidities. As this is an uncommon condition, this report, we believe will be a valuable technical guide.

VD-16 (VS without presentation)

ROBOTIC URETERO-CALICOSTOMY AFTER FAILED PYELOPLASTY

Dario Guido MINOLI, Alfredo BERRETTINI, Mirella MOGIATTI, Erika Adalgisa DE MARCO and Gianantonio MANZONI

Fondazione IRCCS Ca' Granda - Ospedale Maggiore Policlinico, Pediatric Urology, Milan, ITALY

PURPOSE
In this video we report the robotic approach to a complex case of persistent pyelo-ureteral obstruction finally solved with uretero-calicostomy.

MATERIAL AND METHODS
A 14 year-old-girl with right flank pain has been diagnosed with a pyelo-ureteral obstruction and underwent a standard robotic pyeloplasty in 2013.

A new procedure with pyelography and robotic ureterolysis was performed after 15 months because of persistent colicky pain. Then, in 2017, persistent symptomatic obstruction required further treatment with a robotic uretero-calicostomy.

RESULTS

The patient was discharged on 9th post-operative day without any major complications. Nephrostomy was removed after 3 weeks and JJ stent after 5 weeks. Ultrasound imaging after 8 weeks showed significant reduction of hydronephrosis. After 7 months she doesn't complain of any symptoms and the imaging shows conserved renal function and reduction of hydronephrosis.

CONCLUSIONS

Robotic surgery is a safe approach even for the most complex pediatric urological procedures. Uretero-calicostomy is an uncommon procedure generally used as salvage surgery for failed pyeloplasties. Even in this difficult situation, the robotic choice has demonstrated its higher capacity of handling and maneuvring, allowing a satisfactory result.

VD-17 (VS without presentation)

NOVEL TECHNIQUE IN BURIED PENIS RECONSTRUCTION: COMPLETE EXCISION OF INELASTIC DARTOS FASCIA WITHOUT ANCHORING EITHER PENOPUBIC OR PENOSCROTAL JUNCTION

Arry RODJANI, Widi ATMOKO and Irfan WAHYUDI

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PURPOSE

Buried penis is a pathology for which several reconstructive techniques are described. We described a novel technique and evaluated the efficacy and safety of our technique.

MATERIAL AND METHODS

From June 2009 and February 2015, 28 patients underwent surgical repair of buried penis with our novel technique in the hands of two surgeon (A.R. and I.W.) who had same principle technique. The principle of our technique is complete separation of inelastic dartos fascia from the skin and penis and excision of inelastic dartos fascia until penopubic and penoscrotal region without anchoring either the penopubic or penoscrotal area. We administered a questionnaire asking questions about penile size, morphology, and voiding status to evaluate parental satisfaction.

RESULTS

The mean age of patients at the time of operation was 9.50 ± 2.09 years, and the mean duration of follow-up was 23.27 ± 16.75 months. The mean satisfaction grades for penile size, morphology, and voiding function were improve ($p < 0.05$). The mean preoperative satisfaction grade concerning penile size was 0.82 ± 0.76, and it improved postoperatively to 2.67 ± 0.52 at the last follow-up ($p < 0.001$). The mean preoperative satisfaction grade for penile morphology was 0.86 ± 0.55, which improved to 2.12 ± 0.40 at the last follow-up visit ($p < 0.001$). The mean preoperative satisfaction grade for voiding function was 1.10 ± 0.72, which improved to 2.94 ± 0.86 at the last follow-up visit ($p < 0.001$). There were no complications such as postoperative infection and tissue necrosis. Edema developed in 2 patients, but resolved spontaneously after 1 month.

CONCLUSIONS

Our method of buried penis correction was found to be technically feasible and safe. It results in a good cosmetic appearance and excellent postoperative satisfaction rates in terms of size, morphology, and voiding function.

VD-18 (VS without presentation)

LAPAROSCOPIC SIGMOID VAGINOPLASTY

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PURPOSE

Mayer-Rokitansky-Kuster-Hauser syndrome (MRKHs) is a congenital anomaly of the female genital tract that may require vaginal reconstruction. Laparoscopic sigmoid vaginoplasty allows adequate anatomic and physiologic functions that are essential for sexual-wellbeing. The goal of laparoscopic sigmoid vaginoplasty is a to create a functional self-lubricating vagina via minimally invasive procedure.

MATERIAL AND METHODS

A 16 year-old female diagnosed with MRKHs syndrome. We used a four port laparoscopic approach. The selection of the sigmoid graft was based on preserving the left colic artery and an adequate length of vascular pedicle to ensure a tension free graft. Sigmoid continuity was restored using a side-to-side linear stapled anastomosis. The sigmoid graft was rotated 180 degrees bringing the proximal end into the pelvis. A transperineal hand sewn anastomosis was done to create a neovagina.

RESULTS

A functional neovagina was created using sigmoid graft measuring approximately 8 cm in length and two fingers in width. Sigmoid neovagina has advantages including its own inherent blood supply, inherent lubrication and distensiblility. There was no intra-operative or post-operative bowel complication. There were no early or functional complications to date.

CONCLUSIONS

Laparoscopic vaginoplasty using a sigmoid pedicle graft lends itself to a minimally invasive technique that can be offered to certain patients in need of vaginal reconstruction. It is an ideal procedure for patients with MRKHs.

VD-19 (VS without presentation)

URETERORENOSCOPIC REMOVAL OF A FOREIGN BODY IN A NEWBORN FOLLOWING FETAL NEPHROSTOMY

Alexander SPRINGER

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PURPOSE

To report newborn ureterorenoscopic removal of a foreign body left in the renal pelvis following prenatal placement of a left nephrostomy.

MATERIAL AND METHODS

Intraoperative video and case report using case notes.

RESULTS

A female fetus was diagnosed with a huge sacrococcygeal teratoma and fetal left nephrostomy was placed together with intra-uterine drainage of tumor cysts in a different center. The tumor together with the stents and nephrostomy were removed in another center. However, a 2 cms piece of metal had been left in the left renal pelvis causing urinary tract infection. At age 3 months (body weight 4.2 kgs) we ureterorenoscopically removed the foreign body from the left renal pelvis.

CONCLUSIONS
A foreign body within the renal collecting system following in utero intervention is a very unusual finding not adherent to any clinical guideline. However, endourological removal can be performed safely in the newborn period.

VD-20 (VS without presentation)

THIERSCH DUPLAY URETHROPLASTY WITHOUT MEATOPLASTY

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PURPOSE
When performing the standard Thiersch Duplay urethroplasty procedure, it has been the norm to extend the parallel skin incisions to the top of the glans. This invariably led to performing a formal sutured meatoplasty. We have modified this approach in order to avoid meatal sutures and thus prevent the scarring that may subsequently develop. Herein we present our video.

MATERIAL AND METHODS
28 boys with a mean age of 8 months underwent the Thiersch Duplay urethroplasty without sutured meatoplasty. The essence of the modification is in making transverse marking pen lines at the point where we deem the natural starting point of the neomeatus. The U-shaped marking line that follows around the hypospadias meatus only extends superiorly to the previously placed transverse marking lines. Thus when the Thiersch tube is created, the suture line stops right at the level of where the new meatus should naturally be situated. As a result, the meatus heals without scarring and achieves a natural, normal slit like appearance.

RESULTS
We had consistently excellent cosmetic and functional results on all 28 boys with no complications to date with a mean follow-up of 4 months.

CONCLUSIONS
The modified Thiersch Duplay without meatoplasty provides a cosmetically normal appearing orthotopic slit like meatus. While folow-up is admittedly short, the improved meatal cosmetic results should stand the test of time. We recommend that this technique be considered by those reconstructive pediatric urologists who desire not only excellent functional results in hypospadias surgery but excellent cosmesis as well.

VD-21 (VS without presentation)

STEP BY STEP TRANSVESICAL BILATERAL URETERIC REIMPLANTATION IN CHILDREN: A VIDEO ATLAS

M S ANSARI

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PURPOSE
Contemporary literature has proven the safety and efficacy of transvesical ureteric reimplantation in children. Most of these series have described the results of unilateral reimplantation. Here in the author describes the technique of transvesical bilateral ureteric reimplantation in a step by step manner in children.

MATERIAL AND METHODS
A total of 10 patients underwent laparoscopic transvesical bilateral reimplantation by the same surgeon. All the 6 patients had primary VUR. Of these 9 had grade II-III VUR while 1 had grade IV on one side and III on other side. Laparoscopic transvesical bilateral cross-trigonal ureteral reimplantation was performed in all the patients. A pure laparoscopic approach using three 3/5 mm ports was used.

RESULTS
The median age was 4.5 years [range 3–8]. The median operative time was 150 minutes [range 130–180]. There was no conversion or any intraoperative complication reported. Median hospital stay was 6 days [range 5–8]. The median follow up is 18 months. On follow up renal dynamic scans normal drainage was reported in all the patients. Reflux resolved in 9 patients. In 1 patient reflux persisted of the same grade i.e. grade IV on one side. This patient had tortuous and dilated ureter [Grade IV] on preoperative voiding cystourethrogram.

CONCLUSIONS
Laparoscopic bilateral transtravesical reimplantation is safe and feasible. Dilated and tortuous ureters [VUR grade IV] are best to be avoided for this technique.

VD-22 (VS without presentation)

VESICOSCOPIC CROSS-TRIGONAL URETERAL REIMPLANTATION

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PURPOSE
Open ureteral reimplantation (UR) is the gold standard for the surgical management of vesicoureteral reflux (VUR). There have been increasing reports on robot-assisted UR but this approach remains controversial due to reports suggesting increased complications and reduced success compared to open repair. We present our extensive experience with vesicoscopic ureteral reimplantation (VR) for primary reflux.

MATERIAL AND METHODS
We retrospectively reviewed all patients who underwent VR at our institution. In this procedure cross-trigonal reimplantation is done in a manner analogous to open repair under carbon-dioxide "pneumovesicum". We recorded ages, sex, grade of reflux, operative times, outcomes and complications.

RESULTS
The series consists of 182 consecutive patients who underwent VR. There were 165 girls and 17 boys, mean age 7.03 years (range 16 months – 38.2 years). Fifteen had failed prior injection therapy. 135 underwent bilateral repairs and 47 were unilateral. Mean operative time for bilateral repairs was 197 (112–284) minutes and 169 (99–288) for unilateral. Major complications included two who developed ureteral obstruction. One resolved with stent placement and the other underwent reoperative reimplantation. Post-operative VCUG was obtained in 100 which was normal in 93 (93 %). Four of these failures occurred in the first 30 patients. Of the last 49 patients tested, 48 were normal, suggesting an 98 % effective success rate after the learning curve.

CONCLUSIONS
VR is a minimally invasive procedure for the definitive repair of primary reflux. After the learning curve, success rates are equivalent to open repair. In this video we outline all pertinent steps, including bladder fixation to the abdominal wall, port placement, mobilization and reimplantation of the ureters and, finally, port closure.

VD-23 (VS without presentation)

LAPAROSCOPIC FORMATION OF A CONTINENT CATHETERIZABLE STOMA WITH URETER

Laura CABARCAS, Maria MOLINA, Carlos CADAVAL, Estrella DE LA TORRE, Rocio VIZCAINO, Sebastian ROLDAN and Rosa ROMERO

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PURPOSE

Management of children with severe bladder dysfunction and incomplete bladder empting in patients with PUV can be challenging, specially in patients with difficult or impossible urethral catheterization. The aim of our video is to demonstrate the laparoscopic creation of a catheterizable continent stoma with native ureter associated with a non-functioning kidney.

MATERIAL AND METHODS

A four-year-old male with posterior uretral valves and bladder dysfunction requiring CIC with a right non-functioning kidney associated with vesicoureteral reflux and recurrent febrile urinary tract infections. Urethral catheterization for CIC was offered, but was unsuccessful due to mechanical difficulty and pain.

A laparoscopic right nephrectomy was performed and the distal ureter preserved for the creation of a continent catheterizable stoma. A Lich-Gregoire extravesical laparoscopic procedure was done and an extracorporeal Kalicynski ureteral tapering performed through the umbilical port, to reduce the risk of stoma leak and improve the straight passage of the catheter. The cutaneous stoma was then performed at the umbilical site.

RESULTS

Patient postoperative recovery was uneventful and was discharged from hospital at 3rd postoperative day and intermittent catheterization was initiated six weeks postoperatively.

CONCLUSIONS

The laparoscopic creation of a continent catetherizable stoma with native ureter is safe and a suitable option for patients with bladder dysfunction who must undergo a nephrectomy. Moreover, the laparoscopic technique provides all the benefits of minimally invasive surgery.

VD-24 (VS without presentation)

HIDDEN INCISION ROBOT ASSISTED LAPAROSCOPIC PYELOPLASTY (HIDES) USING TRANSMESOCOLIC APPROACH

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PURPOSE

In "Robot-assisted Laparoscopic Pyeloplasty" (RALP) using HIdES technique (Hidden Incision Endoscopic Surgery), all port entrances except the one in umblicus are made below the Pfannenstiel incision line. We aimed not only to test the safety and feasibility of RALP-HIdES procedure using transmesocolic approach, but also to avoid visible port site scars on the anterior abdominal wall, probably the first time in the literature.

MATERIAL AND METHODS
Transmesocolic RALP-HIdES was performed in a 8-years old girl suffering from left UPJ obstruction. Before docking the robot, 75 degree right lateral decubitis position was given to the patient. Only the three arms of "da Vinci Xi" robot was used. One of the eight-milimeter robotic trocars was placed into the umblicus; the second one was placed at a point on midline and one-centimeter above the symphysis pubis; and the third one was placed at a point one-centimeter above and eight-centimeter left lateral to the second one.

RESULTS
No collison of robotic arms to each other was detected. Assistant port is not needed. Attention was necessary in lower trocars' access into the abdomen due to the close localization of intestines. The classical steps of "dismembered pyeloplasty" were performed succesfully and without any complication. No orientation problem was felt due to caudal to cranial sight of the robotic camera to the operation field. Double-J cathether was easily placed. Total anesthesia time and total operation time were 120 and 95 minutes, respectively. The postoperative period was uneventful.

CONCLUSIONS
Performing pyeloplasty with a robot using HIdES technique is a safe and fast procedure, and also has the advantage of avoiding visible scars on abdominal wall. Surgeon orientation is also easy, and the use of assistant port is not necessary. Preferring transmesocolic approach seems to shorten the operative time.

VD-25 (VS without presentation)

APPENDIX INTERPOSITION FOR LEFT URETERAL RECONSTRUCTION

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PURPOSE
Extensive ureteral loss in children is a rare but dramatic event. Appendix interposition has been described as an option for surgical reconstruction of partial and total ureteral defects both in children and adults.

MATERIAL AND METHODS
We report a case of left ureteral reconstruction in a solitary kidney and long-term follow-up with ureteroscopy. An 8-year-old boy was referred to our hospital with a left pyelostomy and absence of the right kidney. Pyelostomy has been performed after necrosis of the left ureter secondary to ureteral reimplantation performed as the obstructive megaureter treatment. A new ureteral reimplantation with interposition of the appendix was proposed. The Gregoir technique was used in the bladder anastomosis.

RESULTS
Postoperative recovery was uneventful. After 4 years, the child was asymptomatic with normal renal function. Ultrasound showed residual renal dilatation, so we decided to perform control ureteroscopy, as it is shown in the video.

CONCLUSIONS
Left ureteral reconstruction using the vermiformis appendix is a feasible procedure even in young children. Long-term ureteroscopy showed a good adaptation of the appendix to the urinary tract.

VD-26 (VS without presentation)

CLOACAL REPAIR BY POSTERIOR SAGITTAL ANORECTOPLASTY (PSARP) AND TOTAL UROGENITAL MOBILIZATION (TUM)

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PURPOSE

Persistent cloaca is a complex malformation with anomalous confluence of the urethra, vagina and rectum sharing a common channel to the perineum. The level at which the three systems meet is variable. The persistence of cloaca remains one of the most challenging problems in reconstructive pediatric urology. We present a video emphasizing the main technical steps of cloacal repair by PSARP and TUM.

MATERIAL AND METHODS

A 9 months old girl who was born with a single perineal orifice, hydrocolpos and secondary bilateral hydronephrosis. She underwent a left divided colostomy at birth and was kept on clean intermittent catheterization (CIC) for decompression of the hydrocolpos and genitourinary system.

PSARP and cystovaginoscopy was performed at age of 9 months. She had a common channel of 2.5 cm, urethra of 1.5 cm, high rectum opening at the posterior aspect of the vagina and a bicornuate uterus. The child was put in prone position for PSARP. The muscle complex was identified with muscle stimulator and posterior sagittal incision all the way to the cloacal channel. The rectum was then separated from the vagina and placed in the middle of the muscle complex. The pubo-urethral ligaments were divided and TUM performed. The perineal body was reconstructed and the vagina and urethra brought down as separate orifices.

RESULTS

The child was kept on antibiotic prophylaxis and oxybutynin for 2 weeks and was discharged home at third post-operative day. The Foley catheter was removed 1 week after PSARP. She was voiding well and had no infection. She was kept on anal dilatations until colostomy closure 3 months after the procedure.

CONCLUSIONS

Repair of persistent cloaca using a posterior sagittal approach and total urogenital mobilization is suitable for cases of good urethral length (more than 1.5 cm). In cases of shorter urethra, the vagina should be separated and mobilized to the perineum as a pull through procedure.

VD-27 (VS without presentation)

ACCESS TO RETROPERITONEUM UNDER VISION USING OPTIC TROCAR - TECHNIQUE

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PURPOSE

Access into the retroperitoneum routinely has been by open cut down or the blind percutaneous balloon technique with obvious disadvantages which has led to the development of this optical access technique.

MATERIAL AND METHODS

Optical access technique was used for prone retroperitoneoscopic upper renal tract surgeries and data was prospectively collected from June 2015 to March 2017. A 5 mm bladeless optical tip trocar with zero degree short length telescope was used to access the retroperitoneum under direct endoscopic vision with child in prone position. The trocar is advanced by rotating movement with the telescope within it, visualising its passage through Latissimus dorsi, Serratus posterior inferior muscles and thoracodorsal fascia. The retroperitoneal space is identified beyond the fascial layer by presence of fat and fine radiating blood vessels. At this point CO2 is insufflated at 15 mmHg and blunt dissection is carried out with the telescope tip to create the retroperitoneal working space and then other ports are put under vison to complete the surgery.

RESULTS

20 renal surgeries (14-nephrectomies, 6-nephroureterectomy) were performed after gaining access by this technique. Ages ranged from 3 months to 15 years, kidney sizes 1.6 to 15 cm. The average time for access and establishing the retroperitoneal working space was 5-minutes (range 4 – 7). Safe access was successfully achieved in all to complete the surgery successfully. A snug fit was achieved at port sites avoiding the problems of gas leak or subcutaneous emphysema.

CONCLUSIONS

Retroperitoneal access could be achieved safely in a controlled manner, under vision and is reproducible as shown in the video. Snug fit achieved at port sites, avoiding problems of gas leak and air emphysema.

Nurses

S1: FUNCTIONAL VOIDING DISORDERS (part. 1)

Moderators: Jens Larsson (Sweden), Angela Downer (UK)

ESPU-Nurses Meeting on Thursday 12, April 2018, 09:20–09:50

09:20–09:30

S1-1 (LO)

INFORMATION EVENING FOR PARENTS AND OTHER ADULTS DEALING WITH CHILDREN WITH FUNCTIONAL BLADDER AND BOWEL DISORDERS

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PURPOSE

Functional bladder and bowel disorders (BBD) are common in otherwise healthy children. There is lack of accurate knowledge how to support these children in different settings (home, school, day-care, healthcare).

The aim of this paper was to evaluate if an open information session is beneficial for parents and other adults around children with BBD.

MATERIAL AND METHODS

We organised four open information evenings, two hours each, between September 2015 and February 2017. The participants were adults living or working with children with BBD. The information was carried out based on basic life-style advice according to the ICCS definitions. The participants were encouraged to ask questions and share experiences. At the end of each session the participants (n=233) were asked to fill short evaluation forms with six statement using scale 4 (totally agree) to 1(totally disagree) and give open feed-back.

RESULTS

Response rate was 69 % (n=161). The participants evaluated the information session beneficial (mean of 3.7). The given information gave them useful instructions to support the children. The most important feedback was that there is lack of adequate knowledge concerning BBD both in primary health-care settings and in day-care organisations. Especially important to the parents was possibility to share experiences with each other.

CONCLUSIONS

The results underlined the importance of open information events like these to adults dealing with children with BBD. The results provided encouragement to develop new ways to share information, for example an information website www.pissarakonpomoksi.fi and a closed Facebook group for parents.

09:30 – 09:40

S1-2 (LO)

V.I.P VERY IMPORTANT PARENTS SUPPORTING FAMILIES BY PARENT EDUCATION AND MOTIVATION IN CHILDREN WITH INCONTINENCE

Charlotte ARFWIDSSON[1], Monika DOROSZKIEWICZ[1], Helena EKDAHL[1], Jenny BERGSTRÖM[2], Elisabeth BERGENMAR IVARSSON[3] and Lourdes OLSSON[3]

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PROPOSE

In the team with urotherapists, enterostomal therapist and pediatric psychologists we have experienced similar patterns of problems and cooping in families with children who have incontinence problems. This resulted in a decision to start parent education in groups.

MATERIAL AND METHODS

Eleven parents, 5 couples and 1 single parent to six children, aged 5 – 7 years participated.
The education was performed on two occasions with a month intervals. Bladder and bowels information was given. The parents were asked to write down the pattern of the incontinence as perceived of themselves by filling in a scatter-plot graph for two weeks period at home. On the second training session, the scale will be evaluated jointly and individual tools will be given.

RESULTS

10/11 parents were positive to meet parents in the same situation. One parent will not attend the second training session the child had other problems to be investigated. The majority of parents were pleased with the information they received prior to the first occasion.

CONCLUSIONS

Family education given in group with guidance of urotherapists, enterostomal therapist and psychologists could be a complement to individual standard treatment of bowel and bladder problems to give tools and motivation for the family to continue the treatment.

09:40 – 09:50

S1-3 (LO)

THE EVALUATION OF IMPLEMENTATION OF THE VOIDING SCHOOL INTERVENTION TO PRIMARY CARE SETTING – A STUDY PROTOCOL

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PURPOSE

The goal of intervention research is to implement clinically and economically beneficial interventions into health care practice, i.e. getting evidence into practice. The Voiding school (VS) is a simple educational intervention to treat children with incontinence. The first results of its effectiveness and acceptability from the children's perspective are promising and encourage its implementation in clinical practice. The aim of this paper is to present a study protocol for the evaluation of implementation of the VS.

MATERIAL AND METHODS

The process evaluation (Craig et al. IJNS 2012;50:585–92) provides a framework for the evaluation. The effectiveness of the VS is compared with standard treatment in a randomized controlled trial. Participants are 5–6 years old children, who are diagnosed to have daytime incontinence or enuresis in their yearly check-up in child welfare clinic. One week voiding diary, NLUT-DES -questionnaire (Afshar et al. JU 2009;182;1939–44) and PedsQL™ 4.0 are used as outcome measures. Intervention delivery is carried out by training public-health nurses with the help of detailed manual. The evaluation of implementation process consists of interviews and questionnaires targeted to public-health nurses and parents.

RESULTS

Child outcomes will examine the causality between the intervention and the desired effect. The qualitative explorations with interviews and questionnaires delineate the successful of implementation and the feasibility of VS-manual. It also identifies causal mechanisms and contextual factors, which influence on outcomes.

CONCLUSIONS

The study protocol measuring both process and patient outcomes helps us to further understand the challenges of implementation. This knowledge is essential to support the future implementation of intervention.

S1: FUNCTIONAL VOIDING DISORDERS (part. 2)

Moderators: Jens Larsson (Sweden), Angela Downer (UK)

ESPU-Nurses Meeting on Thursday 12, April 2018, 10:10–11:00

10:10–10:20

S1-4 (LO)

SENS-U: VALIDATION OF A WEARABLE ULTRASONIC BLADDER MONITOR IN CHILDREN DURING URODYNAMIC STUDIES

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PURPOSE

Urinary incontinence is a frequent problem in school-age children. Since many children remain unaware of a full bladder sensation, the SENS-U Bladder Monitor was invented. The SENS-U is a small, wearable ultrasound sensor which is positioned on the lower abdomen by a skin-friendly adhesive. The sensor continuously estimates the bladder filling status and informs the child when it's time to proceed to the bathroom. In this study, the clinical performance of the SENS-U is evaluated in children during (video)urodynamics.

MATERIAL AND METHODS

In this study, children (6–12 years) were included who were scheduled for a (video)urodynamic study. During urodynamics, the SENS-U determined the average anterior - posterior bladder dimension (every 30 sec.) to estimate the filling status. The correlation between the average bladder dimension and the infused volume is analyzed by Spearman's correlation.

RESULTS

30 patients (boys/girls: 15/15) [mean age: 7.9 ± 1.4 years] were included, in which the SENS-U detected the full bladder prior to voiding in 90 % of the patients (27/30). In the other patients, the bladder was outside the detection-area due to either erroneous sensor-placement (n=1) or an obese abdomen in the upright position (n=2). There was a strong correlation (median R = 0.94) between the average bladder dimension and the infused volume. The detectable voided-volume ranged between 71–439 ml.

CONCLUSIONS

The SENS-U is able to detect a full bladder with a success-rate of 90 %. When excluding corrupted data due to misplacement or an obese abdomen, the full bladder was detected in all patients. Future research will focus on investigating the effect of the SENS-U in incontinence-training.

10:20–10:30

S1-5 (LO)

EXPLORING THE QUALITY OF TREATMENT FOR CHILDREN WITH DAYTIME INCONTINENCE

Anka NIEUWHOF-LEPPINK[1], Paul VAN LEUTEREN[2], Aart KLIJN[2], Tom DE JONG[2] and Renkse SCHAPPIN[3]

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PURPOSE

Prevalence of daytime incontinence in school-aged children is 6–9 %. Nonetheless, it is difficult to correctly diagnose and treat these children due to the subtle differences in symptoms. In a tertiary care center, an exact diagnosis is crucial. In this study, we aim is to gain insight in the quality of care for children with daytime incontinence in a tertiary reference center. Furthermore, we will determine which factors influence the treatment trajectory.

MATERIAL AND METHODS

We performed a retrospective medical record review on a cohort who were referred to pediatric urology for daytime incontinence. For each child a diagnostic and treatment trajectory was constructed running from the first clinic visit to the end of the third-line treatment.

RESULTS

Of 123 children with a mean age of 7.6 years [66.7 % boys, 33.3 % girls], 63 % had unsuccessful urotherapy elsewhere. Clinical diagnosis was defined in OAB (66 %), DV (25 %), PP (6 %), and HAB (3 %). (Video) urodynamic investigation was done in 55 % and cystoscopy in 87 %. In 69 % of referred children, a urinary tract obstruction was found while only 33 % of the children were referred for obstruction. Intensive urotherapy was needed in 58 % of children. By now, 67 % of children have completed all treatments, 54 % is completely dry and 34 % is improved. Average treatment trajectory was 22 months.

CONCLUSIONS

Most children referred to a tertiary pediatric urologist for daytime incontinence become completely dry or achieve partial improvement of their complaints, despite earlier unsuccessful treatment. In half of the children a urethral anomaly was missed by the referring physician. Many referred children received urotherapy elsewhere at too young age, making it unsuccessful.

10:30–10:40

S1-6 (LO)

STUDY OF ENURESIS IN CHILDREN WITH CLINICALLY SIGNIFICANT EMOTIONAL AND BEHAVIORAL PROBLEMS

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PURPOSE

Previously, we concluded that incidences of internalizing, externalizing, and physical problems are high in the enuresis group than comparison group (non-enuresis). Specific purpose of this study is to research characteristics of enuresis in children with confirmed clinically significant emotional and behavioral problems.

MATERIAL AND METHODS

We retrospectively analyzed the cases of 279 children with nocturnal enuresis. We assessed their symptoms, emotional and behavior problems using a self-administered questionnaire including CPSQ (Child Problem-behavior Screening Questionnaire). As a comparison, we used a CPSQ result of 681 children (who are not diagnosed with enuresis) collected and analyzed by Jin[i].
[i]Jin HS, Journal of emotional & behavioral disabilities, 2013;12:89–119

RESULTS

We named the group of children who exceed the cut-off line of the CPSQ (>13) as 'clinical group'. Incidence of clinical group is statistically high in the enuresis group (26.2 %:11.6 %,p=0.000). And when we compared each clinical groups of enuresis and comparison group, the clinical group of enuresis group showed significantly higher response rates and higher scores in the physical problems (Urine/fecal problems, Not eat well and Tic) and the clinical group of the comparison group showed significantly higher response rates and higher scores in the internalizing problems (Anxiety, Lack of socializing and Letharic). When we classified enuresis group according to its characteristics,nMNE group showed a higher incidence of clinical problem than MNE group (p=0.003).

	Enuresis(n=73)	Comparison(n=79)	p-value
physical health problem	number of response(%)		
obese	56(76.7 %)	47(59.5 %)	0.023
fanting	1(1.4 %)	3(3.8 %)	0.350
voiding/defecation	57(78.1 %)	3(3.8 %)	0.000
sick often	36(49.3)	39(38)	0.159
not eat well	38(49.3 %)	23(29.1 %)	0.004

CONCLUSIONS

Incidence of clinically significant emotional and behavioral problems is statistically high in the enuresis group especially when they have daytime symptoms, and enuresis group with clinical problem tends to show physical symptoms besides urine/fecal problem when the comparison group with same problem tends to show internalizing symptoms.

10:40 – 10:50

S1-7 (LO)

A NEW METHOD OF GROUP TOILET TRAINING IN DAYCARE CENTERS

Tinne VAN AGGELPOEL[1], Stefan DE WACHTER[1], Hedwig NEELS[2] and Alexandra VERMANDEL[1]

1) University Hospital Antwerp, Urology, Edegem, BELGIUM - 2) Antwerp University, Faculty of Medicine and Health Sciences, Wilrijk, BELGIUM

BACKGROUND AND AIMS

In Western society there is a distinct shift to a progressively later initiation of toilet training (TT) and an increasing age of acquiring full bladder control. There is a need to reform TT to decrease the disadvantages of postponing TT. This study is the first to investigate prospectively the efficacy of intensive group toilet training in children in daycare centers.

MATERIAL AND METHODS

A clustered RCT was established in twelve daycare centers. We included 24 diaper-dependent children, aged 18 to 30 months. Clusters of participants (per daycare center) were randomly distributed to an intervention- and a control group (IG1 and CG respectively). IG1 was subjected to an intensive TT group session lasting 2-hours during 2 consecutive days. Parents received a leaflet containing practical tips on how to continue TT. In CG parents were encouraged to start TT in their own manner. Evolution of the TT process was monitored during the following 6 weeks. Statistical analysis was performed using 'SPSS 24'.

RESULTS

Completion of toilet training was achieved in 93 % (14/15) and 44 % (4/9) of the children in IG1 and CG respectively. The average training duration was 2.07 weeks and 4.33 weeks in IG1 and CG respectively. Duration of TT was significantly different between both groups (p=.023) and was significantly correlated to the different groups (p=0,004). 41,2 % of the variance in training duration between both groups can be attributed to starting age, number of siblings and if parents had already started TT. The average starting age in IG1 was 26,12 months and 25 months in CG. The starting age was not significantly associated with the training duration.

CONCLUSIONS

Group TT can already be initiated in daycare centers through means of an adequate method of TT and will shorten the training duration. Large scale study is required to validate these results. These significant findings are clinically relevant for parents, caregivers and educators.

10:50 – 10:55

S1-8 (PP)

SUPERHEROES ON THE TOILET

Ezgi ALTUN TANIL[1], Sibel TIRYAKI[2], Elif ERDOGDU AK[3], Ibrahim ULMAN[1] and Ali AVANOGLU[1]

1) Ege University, Pediatric Surgery Division of Pediatric Urology, Izmir, TURKEY - 2) Ege University-Faculty of Medicine, Department of Pediatric Surgery, Division of Pediatric Urology, Izmir, TURKEY - 3) Ege University, Pediatric Surgery, Izmir, TURKEY

PURPOSE

Urodynamic study is an essential tool to evaluate bladder dysfunction; however, it is highly invasive. Children are disturbed by not only the placement of a urethral catheter, but also the need for urinating in a hostile environment with foreign people around. We reconstructed our urodynamics laboratory to decrease the discomfort of children.

MATERIAL AND METHODS

We designated our theme for the room as superheroes. We used posters of superheros on the toilet (Wyatt 9, UK) (Spiderman, Captain America, Superman, Wonderwoman and Batman) by hanging them to the wall where they will be seen as the first thing as children enter the room. We then made handmade felt facemasks for each superhero poster and hang them under each poster. We also made a superhero themed certificate which implies that the child became a superhero as he/she finished the study superb.

RESULTS

After this design in August 2017, the first thing a child does in our lab is to choose a hero. Then he/she puts the mask on and the urotherapist behaves accordingly. We believe this practice provides performing urodynamics without sedation in majority of patients between years 3 and 7 when it is hardest to implement.

CONCLUSIONS

The psychological trauma of invasive diagnostic procedures is often disregarded. Patient centered care requires adjustment of environment to children. Our experience shows how small changes make big impacts in care of children.

S2: LOWER URINARY TRACT

Moderators: Lynne Bartlett (UK), Anneli Saarikoski (Finland)

ESPU-Nurses Meeting on Thursday 12, April 2018, 12:00–12:40

12:00–12:10

S2-1 (LO)

CASE REPORT-TEENAGE GIRL WITH FOWLERS SYNDROME

Helena EKDAHL[1], Monika DOROSZKIEWICZ[2] and Gundela HOLMDAHL[3]

1) The Queen Silvia Children's Hospital, Paediatric Urology, Göteborg, SWEDEN - 2) The Queen Silvia Children's Hospital, Urotherapic unit, Göteborg, SWEDEN - 3) The Queen Silvia Children's Hospital, Pediatric urology and uroterapeutic unit, Göteborg, SWEDEN

BACKGROUND

Fowlers syndrome is characterized by urinary retention associated with abnormal sfincteric electromyographic activity in young women. The sphincter don't relax to allow urine to pass normally. A spectrum of severity is shown. Some can pass urine with difficulty and have residual urine with dysuria and low abdominal and back pain and some have complete retention. There is an absence of overt neurologic disease and the ethiology is unknown. It has been reported to be associated to polycystic ovaries.

MATERIAL AND METHODS

A 14 year old girl, was admitted to our urotherapeutic unit from a local hospital. Six months earlier she had a sudden onset of unability to initiate a micturition and had urinary retention with ≥ 1 litre of urine in her bladder without urge. She was given a suprapubic catheter with continuous drainage. Ultrasound of the urinary tract was normal. Cystometry was not possible to perform because of pain. Cystoscopy normal, and in the same anestethia a vesicostomy button was inserted, as she refused CIC. We started her on bladder training emptying through the button every forth hour.

RESULTS/DISCUSSION

Her symptoms are consistent with the diagnose Fowler's syndrome, but will a diagnose help her? With the presentation of this case we would like to discuss how to investigate, assess and help girls with urinary retention of unknown cause.

12:10 – 12:20

S2-2 (LO)

THE OUT-OF-ROUTINE URODYNAMIC STUDY IN A CAUDAL DUPLICATION CASE

Ezgi ALTUN TANIL[1], Sibel TIRYAKI[2], Ibrahim ULMAN[1] and Ali AVANOGLU[1]

1) Ege University, Pediatric Surgery Division of Pediatric Urology, Izmir, TURKEY - 2) Ege University-Faculty of Medicine, Department of Pediatric Surgery, Division of Pediatric Urology, Izmir, TURKEY

PURPOSE

Caudal duplication anomaly is a complex disorder with varying forms of duplication in cloaca and notochord. Gastrointestinal, genitourinary and spinal anomalies vary widely in these patients. The urodynamic study of a patient with caudal duplication abnormality was presented for its uniqueness.

THE CASE

A 9 year old girl, who was diagnosed as a caudal duplication syndrome in the neonatal period and did not admit since then, admitted to outpatient clinic. She did not receive any surgical treatment and did not suffer any serious health condition. She was still in diapers. In the laparotomy for gastrointestinal reconstruction, the duplicated hindgut segment was excised and colostomy was performed. Two bladders smaller than normal were observed. As the urinary continence story was suspicious and the family was unwilling for additional surgery, she was followed for another year without any surgical intervention.

URODYNAMICS

Urodynamic testing was performed after placement of pressure probes in both bladders and a pressure probe for intra-abdominal pressure measurement through the colostomy. The bladder on the left was slightly larger (right 40 mL, left 130 mL), and the total capacity was found to be about half of the expected for age. Excision of the right bladder, bladder neck closure, ileocystoplasty and Mitrofanoff procedure with the left bladder was planned.

CONCLUSIONS

Complex congenital abnormalities require adapting the nursing care and practices beyond the routine. The awareness of different congenital anomalies, an experienced team and patient-centered approach are important while planning the reconstructive surgeries.

12:20 – 12:30

S2-3 (LO)

LONG-TERM OUTCOME OF SUPRAPUBIC MINITM BUTTON BLADDER DRAINAGE AS A SECOND-LINE OPTION TO URETHRAL CIC

Niamh GEOGHEGAN, Elizabeth COLTON, Nicholas MADDEN, Diane DE CALUWE, Nisha RAHMAN and Marie-Klaire FARRUGIA

Chelsea & Westminster Hospital, Paediatric Urology, London, UNITED KINGDOM

PURPOSE

Suprapubic button (SPB) drainage is an effective option to urethral CIC is challenging, and as a temporising option until a more permanent surgical conduit is implemented. Our aim was to determine the long-term outcome of children managed with SPB drainage.

MATERIAL AND METHODS
Single-centre retrospective case-note and imaging review of patients managed with SPB drainage between 2007 and 2017. A 12 Fr MINI™ gastrostomy button (off-licence use) was inserted primarily or following a pre-existent supra-pubic catheter/ vesicostomy, and changed 6-monthly in an out-patient setting. Bladders were cycled 2–3 hourly by day and overnight drainage.

RESULTS
Eighteen patients had an SPB inserted at a median age of 47 (0.1–142) months. Diagnoses were PUV (4), urethral atresia (1), triad syndrome (1), cloacal anomaly (3), anorectal malformation (2), intestinal failure/ hypocontractile bladder (4), neuropathic bladder (3). Indications were failure to CIC urethrally (11) or anatomic anomaly precluding CIC (5). Complications were colonisation/ urine infection (10), leakage (7), bladder spasm (2) and false passage (1). At a median 5 (0.7–10) year follow-up, the button was removed in 4 (2 replaced by Mitrofanoff and 2 neuropaths voiding normally). Upper tract dilatation improved in 5, deteriorated in 2 and stabilised in 11. Only one patient with high-grade VUR developed a new scar on follow-up DMSA.

CONCLUSIONS
SPB bladder drainage is a safe second-line option to urethral CIC fails. It avoids the social and skin problems associated with a vesicostomy and effectively tides patients over until more definitive surgery is required. The main disadvantages are cost (although less than that of CIC catheters for 6 months) and risk of colonisation/ infection.

12:30–12:40

S2-4 (LO)

SAFETY AND EFFICACY OF INTRAVESICAL GENTAMICIN THERAPY IN PAEDIATRIC PATIENTS WITH COMPLEX UROLOGICAL CONDITIONS

David KEENE[1], Beverley WHITNALL[2] and Liz EDWARDS[2]

1) Royal Manchester Children's Hospital, Paediatric Urology, Manchester, UNITED KINGDOM - 2) Royal Manchester Children's Hospital, Department of Paediatric Urology, Manchester, UNITED KINGDOM

PURPOSE
Intra-vesical gentamicin therapy (IGT) has been used in adult cystitis patients and paediatric patients with complex urological conditions (Defoor, J.Urol.2006;175(5):1861–4). The authors aimed to compare the safety and efficacy data with published literature.

MATERIAL AND METHODS
A prospective study was performed in a single institution between 2016 and 2017. A treatment course was twice a day for 7 days. A prophylactic course was 3 times a week for up to 6 months. Gentamicin 40 mg was added to 100 mls urotainer and instilled into an empty bladder by gravity over 5 minutes. The bladder was emptied after 1 hour. Gentamicin levels were performed 1 hour after the IGT on days 1, 3 and 7. Chi-squared test was used to compare the outcomes (elevated gentamicin level and breakthrough UTI) between this cohort and published literature.

RESULTS
17 patients were commenced on IGT for recurrent urinary tract infections (10 treatment courses for current symptomatic UTIs and 11 prophylactic courses). Underlying conditions included neuropathic bladder (6), bladder exstrophy (4), posterior urethral valves (3), cloacal anomaly (1), revision pyeloplasty (1), severe overactive bladder (1). 4 patients stopped IGT early (2 breakthrough UTIs, 1 developed diarrhoea, 1 gentamicin resistance).

	Current study	Defoor 2006	P value (Chi-squared test)
Number of patients (Male:Female)	17 (9M: 8F)	80 (38M: 42F)	
Median age (years)	4.2 (0.7-10.7)	10 (0.3-36)	
Median duration (days)	51 (7-227)	90	
Indwelling or SP catheter	6 (35 %)	11 (14 %)	
Elevated gentamicin levels > 0.4 mg/dL	0 %	0 %	
Breakthrough UTI	4 (24 %)	21 (26 %)	0.82
Gentamicin resistance	1 (6 %)	5 (6 %)	0.95

CONCLUSIONS

There was no difference in the safety or efficacy of intra-vesical gentamicin therapy between the current study and published literature (Defoor 2006). Intra-vesical gentamicin therapy is a safe feasible option in children with recurrent urinary tract infections and complex urological conditions.

S3: MISCELLANEOUS

Moderators: Karen Kwak (Netherlands), Alexandra Vermandel (Belgium)

ESPU-Nurses Meeting on Thursday 12, April 2018, 14:00–14:30

14:00–14:10

S3-1 (LO)

MANAGEMENT OF KIDNEY REPLACEMENT TREATMENT IN BLADDER EXTROPHY

Gemma FERNÁNDEZ MALDONADO, Maria MUÑOZ PÉREZ, Marta CASADO CARRO, Esther FRANQUET BARNILS, Maria Teresa ALONSO TORRES and Sandra PÉREZ SANCHO

Fundació Puigvert, Nurse, Barcelona, SPAIN

PURPOSE

Bladder exstrophy is a rare urogenital malformation, more often in males than females (1 to 3). For the treatment of the disease, reconstructive care in Pediatric Urology is required. Its management is difficult and complicated, with diverse complications, among them, the Chronic Renal Disease. It is important to maintain the same care team in the transition stage between the pediatric and adult age, favors the follow-up of patients and improves their quality of life. Objective: To describe clinical characteristics, evolution and type of renal replacement therapy in patients with bladder exstrophy.

MATERIAL AND METHODS

A descriptive, retrospective, and Unicentric study in an Uropaediatrics Unit from 1980 to 2016, in Spain. The study population were all patients diagnosed with exstrophy in renal replacement therapy. The sample consisted of 4 patients. Sociodemographic variables, clinical care, and complications were collected.

RESULTS

Four cases of bladder exstrophy were studied in renal replacement therapy. 100 % men. The mean age of onset of CKD was 36 ± 12 years. The initial renal replacement therapy was 100 % Hemodialysis by Venous Artery Fistula (AVF), at 3.3 ± 1.2 years of diagnosis of the disease (Range 0–5) was performed in 75 % of cases, Renal Transplant, 66, 66 % cadaver donor and 33 % live donor.

CONCLUSIONS

Nursing professionals should provide care that promotes therapeutic education, promotion, and prevention of complications of the disease before its occurrence and / or provide tools that contribute to Improve your quality of life.

14:10 – 14:20

S3-2 (LO)

NURSING CARE PROCESS IN PEDIATRIC UROLITHIASIS AFTER ESWL

Gema FERNÁNDEZ MALDONADO, Maria MUÑOZ PÉREZ, Sandra PÉREZ SANCHO, Marta CASADO CARRO, Franquet Barnils ESTHER, Ana PALOMINO MARTÍNEZ and Alonso Torres MARIA TERESA

Fundació Puigvert, Nurse, Barcelona, SPAIN

PURPOSE

Extracorporeal Shock Wave Lithotripsy (ESWL) is a non-invasive first choice therapy for pediatric urolithiasis. The knowledge of the procedure and its possible complications may improve clinical practice and quality of nursing care in the uropaediatric patient. The present study aims to describe the Nursing Care Process in ESWL as well as to learn the sociodemographic characteristics of the patients an Uropaediatrics Unit of a third level hospital.

MATERIAL AND METHODS

A descriptive, retrospective, and Unicentric study. All uropaediatric patients ≤18 who attended a Center (Spain) from 2010 until 2014 were included in the study, a total 115 children.

RESULTS

The mean age of the studied cases was of 9.55 years (range: 1 – 18), 57.26 % males and 41.73 % females. 73.91 % of the cases were initial visits. 22.92 % of the girls and 28.35 % of the boys required successive visits. Common and specific diagnoses in each of the stages of the non-invasive intervention were identified and 5 major and 3 potential risk nursing diagnoses were determined.

CONCLUSIONS

Assistance planning based on a Nursing Care Process and promoting healthy lifestyles through health education helps improve the quality of care and prevent comorbidities and/or side effects of the procedure.

14:20 – 14:25

S3-3 (PP)

ANALYSIS OF STRUCTURED TRIAGE IN AN EMERGENCY SERVICE IN THIRD UROPEDIATRIC LEVEL MONOGRAPHIC CENTER

Berta SANS CALLEJO, Mireia PLANS MARCOBAL, Mª Angels SALLENT DÍAZ, Maite LÓPEZ GUERRERO, Gemma FERNÁNDEZ MALDONADO, Maria MUÑOZ PÉREZ and Maria Teresa ALONSO TORRES

Fundació Puigvert, Nurse, Barcelona, SPAIN

PURPOSE

The triage is a standardized method of management of patient classification in five levels according to their health severity. This brief identification provides an improvement of the assistance, a prioritization of the circuits and information to the users. The Centre specialization required an adapted system to the patient's characteristics related with the parameters that determine the triage numeration OBJECTIVES: to describe the use of a triage system in the Urgent Care Service in the Center during the 2016 year.

MATERIAL AND METHODS

Descriptive and retrospective study. The Centre was assigned the right sector of Barcelona (403.951 citizens). During 2016, 16,750 patients who visited in the center emergency departments, the sample was 263 uro pediatric patients. The triage used was the Andorran Triage System.

RESULTS

of 263 patients, the middle age was 12 years (range: 0 – 18) and 25,1 % was under 6 years old, gender: 56,65 % male and 43,35 % female. Levels: 0,0 % Level I (imminent vital risk), 0,38 % Level II (very urgent), 26,23 % Level III (urgent), 63,49 % Level IV (minor urgent), 4,18 % Level V (non urgent) and 5,7 % non codified. The middle ages codified by levels (248): Level II: 9 years, Level III: 10±8 years, Level IV and V: 13±5 years. Rates of hospitalization 8,87 %, from them 68,18 % male and 31,82 % female. Among the reasons of the main emergencies were: lumbago, pain, micturition syndrome, fever not specified and dysuria…

CONCLUSIONS

The Institution of the triage supposed an improvement of the service and a better management of the emergency department.

S4: ADOLESCENT UROLOGY

Moderators: Karen Kwak (Netherlands), Alexandra Vermandel (Belgium)

ESPU-Nurses Meeting on Thursday 12, April 2018, 14:30 – 14:50

14:30 – 14:40

S4-1 (LO)

EXPERIENCES, WISHES AND NEEDS OF ADOLESCENTS IN TRANSITION

Femke GLAAP-ROEVEN, Karen KWAK, Jacqueline KNOLL and Robert DE GIER

Radboud university hospital Nijmegen, Paediatric urology, Nijmegen, NETHERLANDS

PURPOSE

As a result of improvement in medical care, 90 % of chronically ill young people nowadays reach the adult age. Transition to adult health care is therefore inevitable. Because transition to adult health care generally does not run smoothly, a lot of research is performed on the problems and pitfalls of transition. Knowledge is lacking on the experiences, wishes and needs of the adolescents who will undergo transition. Aim of this study was to map the experiences with transition and identify recommendations of the adolescent to adjust and improve the transition process.

MATERIAL AND METHODS

With a qualitative study data were collected by semi-structured interviews with eight adolescents who underwent transition in our hospital.

RESULTS

After transition adolescents experience major differences between the pediatric outpatient clinic and the adult outpatient clinic. Adolescents experience less personal approach at the adult outpatient clinic as problematic. It is only after the transition process that many adolescents realize they are lacking of self-management. Transition at the adult outpatient clinic is regarded as a stimulant to develop independence and responsibility. It's the adolescents opinion that preparation for the transition process should start earlier in the pediatric outpatient clinic. Possible influencing factors of developing self- management advance to transition are: development phase and the role of parents and peers.

CONCLUSIONS

To facilitate the transition to the adult outpatient clinic a adequate preparation for transition is needed. Therefore the professionals at the pediatric outpatient clinic should focus on increasing self-management of the adolescent.

14:40 – 14:50

S4-2 (LO)

DYNAMIC ROLE OF PUBLIC RELATION IN COUNSELLING OF GENDER IN ADOLESCENTS: ETHICS, EMOTIONS & MORALS IN INDIAN SCENARIO

Neeraj DIXIT, Shridhar GHAGANE and R.B. NERLI

Department of Urology, KLES Kidney Foundation, KLES Dr. Prabhakar Kore Hospital & MRC, Belagavi, Ind, Department of Urology, Belagavi, INDIA

PURPOSE

Transgender individuals are people whose self-identification as male, female, both, or neither (gender identity) does not match their assigned gender. The phenomenon of transgender is uncommon, but as more media attention is directed toward the subject, more adolescents and young adults are "coming out" at an earlier age. This paper examines the responsibilities of public relation counsellor to counsel to those who identify or might be identifiable as "transgendered" at our tertiary care centre.

MATERIAL AND METHODS

During the study period from 2010 to 2016, 23 patients approached the urological services with confused gender status (Male/Female or Both). The study involves two main objectives. The first is to describe the critical reflection necessary to deal with gender-variant clients in an ethical and effective manner. The second is to discuss a psychotherapeutic model that is likely to be effective in integrating such reflection into the clinical process, and to make counselling recommendations on that basis.

RESULTS

Upon counselling the patients are interviewed several times in-depth. We could able to judged that comprehensive psychological, social & moral health support is extremely difficult for these youth, who are at risk for multiple psychosocial problems including family and peer rejection, harassment, trauma, abuse, inadequate housing, legal problems, lack of financial support, and educational problems. The findings of this study suggests that interpersonal stigma also functions to strengthen medical power and authority in the face of provider uncertainty. Within functional theories of stigma, it is important to acknowledge the role of public relation counsellor to understand how defaming attitudes function to maintain systems of inequality that contribute to health disparities.

CONCLUSIONS

The study reveals that timely psychosocial intervention to achieve gender/body congruence paired with affirmative mental health therapy as an appropriate approach to minimize negative health outcomes and maximize positive futures for transgender juveniles.

S5: NEUROPATHIC BLADDER

Moderators: Louiza Dale (UK), Babette Jatzkowski (Sweden)

ESPU-Nurses Meeting on Friday 13, April 2018, 09:50 – 10:45

09:50 – 10:00

S5-1 (LO)

EARLIER INTRODUCTION TO CIC PROVIDES BETTER COMPLIANCE IN SPINA BIFIDA PATIENTS

Ezgi ALTUN TANIL[1], Sibel TIRYAKI[2], Ali AVANOGLU[1] and Ibrahim ULMAN[1]

1) Ege University, Pediatric Surgery Division of Pediatric Urology, Izmir, TURKEY - 2) Ege University-Faculty of Medicine, Department of Pediatric Surgery, Division of Pediatric Urology, Izmir, TURKEY

PURPOSE

Clean intermittent catheterization is an important tool in the management of children who cannot empty their bladders. Our observation was that children and parents are more prone to adapting to CIC in earlier ages. The aim of this study is to evaluate the compliance with CIC in terms of age CIC was started in spina bifida patients.

MATERIAL AND METHODS

Spina bifida patients admitted to urodynamic laboratory between 2013 and 2017 were questioned in terms of compliance with CIC. Gender, paraplegia, anatomic or mental disabilities, continence, urinary infections, concomitant diseases, and person performing CIC were also recorded. The data were reviewed retrospectively.

RESULTS

The study included 162 patients (77 boys, 85 girls) who were reevaluated in a median of 5 (1 – 24) years. Mean age was 3.30 (±4,507) years when CIC was started. In total, 127 patients (78 %) were compliant with CIC, 79 (49 %) were dry between intervals, and 105 (65 %) didn't have urinary infections. Eighty-four (52 %) had paraplegia. While gender (p=0.251), paraplegia (p=0.418), anatomic or mental disabilities (p=0.418), the person performing CIC (p=0.355) had no impact; the age of starting CIC significantly effected compliance (p<0.001). The mean age at start of CIC was 2.49 for the patients who were compliant and 6.26 for those who weren't.

CONCLUSIONS

The delay in initiating CIC in spina bifida patients with neurogenic bladder does not only risk urinary tract and retard continence, but it also decreases compliance with CIC. Our study shows better adaptation when it is started in early ages.

10:00–10:10

S5-2 (LO)

THE ANALYSIS OF URODYNAMIC STUDY OF CHILDREN WITH FILUM TERMINALE LIPOMA

Sang Hee SHIN[1], Yoon Hye JI[2], Sang Woon KIM[3], Yong Seung LEE[3] and Sang Won HAN[3]

1) Severance Children's Hospital, Yonsei university Health System, Department of pediatric urology (Bladder-urethral rehabilitation clinic), Seoul, REPUBLIC OF KOREA - 2) Severance Children's Hospital, Yonsei University Health System, Department of Urology (Bladder-urethral Rehabilitation Clinic), Seoul, REPUBLIC OF KOREA - 3) Urological Science Institute, Yonsei University of College of Medicine, Department of Urology, Seoul, REPUBLIC OF KOREA

PURPOSE

Filum terminale lipoma(FTL) is a congenital spinal anomaly that can cause tethered cord syndrome. It is generally known that about 50 % patients improve their symptoms after surgery in symptomatic FTL patients. Purpose of this study was to evaluate parameters of urodynamic study(UDS) and presence of urologic symptoms before and after surgery for FTL.

MATERIAL AND METHODS

The records of patients who were diagnosed with FTL between November 2005 and august 2016 were analyzed for motivator of diagnosis, associated malformations, symptoms and results of UDS. Compliance, bladder volume, detrusor activity and vesico-sphincteric synergy were identified, graded, and added to obtain a UDS score (Meyrat et al. Childs Nerv Syst 2003;19:716–721).

RESULTS

From 353 patients who were diagnosed with FTL, 138 patients had associated malformation such as hypospadias, imperforated anus and cloacal anomaly. The 104(55.6 %) of 187 patients who undergone surgery were males. Mean age at surgery was 20(1–235) months. Motivator of diagnosis and mean age at surgery were as follows: Dimple were 91.4 % and 11.2(1–109)months, urological symptoms were 2.6 % and 76(35–103)months and musculoskeletal symptoms were 5.9 % and 131(31–235)months. UDS score before and after surgery was 3.7 and 2.3. There was a significant decrease between before and after surgery (p was less than 0.001). Of 5 patients with urologic symptom, 3 patients showed partial improvement and 2 patients showed failure of improving symptoms.

CONCLUSIONS

187 patients undergone FTL surgery showed good clinical progress and had no complications. Patients undergone surgery after developing symptoms were older than patients who diagnosed by dimple and most of their symptoms did not improved.

10:10–10:20

S5-3 (LO)

THE EARLY OUTCOMES OF THE ADVANCETM MALE SLING SYSTEM FOR PAEDIATRIC INCONTINENCE IN CHILDREN WITH SPINA BIFIDA

Gavish MUNBAUHAL, Alexander TURNER, Junaid ASHRAF and Ramnath SUBRAMANIAM

Leeds General Infirmary, Paediatric Urology, Leeds, UNITED KINGDOM

INTRODUCTION

Established in the management of adult stress incontinence, the sling is a minimally invasive option aiming at increasing bladder outlet resistance. We qualitatively assessed the AdVance™male urethral sling as a primary intervention in children with spina bifida.

METHODS

Four boys (Median age 10; Range 7–15) with spina bifida and no prior bladder neck surgery received an AdVance™ sling between 2009 and 2016, for constant urinary leakage. We assessed the number of pad changes and subjective patient satisfaction using the International Consultation on Incontinence-Short Form (ICIQ-SF).

RESULTS

Median Follow-up (months)	Daytime				Night-time			
	Wet	Mainly Dry	Dry	Free-drainange	Wet	Mainly Dry	Dry	Free-drainange
12	1	2	1	0	1	1	1	1
40 (14-71)	0	2	2	0	2	0	2	0

Reported leak status is shown in the above table. Median pad use was 2.5 (Range 1–4) and subjective improvement was 50–70 % in three cases and 85–90 % in once case. 75 % of patients scored ≤5 on the 10-point ICIQ-SF scale assessing the interference of urinary leakage in everyday life.

CONCLUSIONS

Our results highlight the potential of the sling as a minimally invasive alternative to bladder neck surgery. We believe its success to be highly dependent on compliance with intermittent catheterisation and the absence of significant comorbidity.

10:20–10:30

S5-4 (LO)

EXPERIENCE OF CONTINENCE CARE WITH PATIENTS AFTER PRENATAL MYELOMENINGOCELE (MMC) REPAIR

Anna GIAMBONINI

University Children's Hospital Zurich, APN Continence, Zurich, SWITZERLAND

PURPOSE

The purpose of this presentation is to describe our experience in management of continence care with families after fetal surgery repair of myelomeningocele (MMC).

MATERIAL AND METHODS
Since 2010, 65 patients (38 girls, 27 boys) underwent surgery of fetal repair of MMC at the University Children's Hospital Zurich. 72 % (n=47) of the families are from all over Europe (Germany, France, Russia, Austria, Italy, Sweden, Slovakia, UK). These children are closely monitored at the specialized multidisciplinary MMC centre and show several physical benefits e.g., motor function.
However, about 2/3 of the patients present a neurogenic bladder dysfunction and the continence team is challenged by these new group of patients.

RESULTS
A summary of the challenges and opportunities in the continence care for a paediatric continence nurse specialist will be presented e.g., CIC support in different countries with different standards or being confronted with parent's expectations after surgery.

CONCLUSIONS
The fetal repair of MMC offers an opportunity to improve patient's health conditions, and enhance the vision of treatment for health providers. However, the new treatment and its different impact on physical function requires continuous attendance and medical as well as emotional support for the families.

10:30 – 10:40

S5-5 (LO)

SIMPLE RECTAL ENEMA ALONE IS NOT SUFFICIENT FOR URODYNAMIC STUDIES IN SPINA BIFIDA PATIENTS

Ezgi ALTUN TANIL[1], Sibel TIRYAKI[2], Ibrahim ULMAN[1] and Ali AVANOGLU[1]

1) Ege University, Pediatric Surgery Division of Pediatric Urology, Izmir, TURKEY - 2) Ege University-Faculty of Medicine, Department of Pediatric Surgery, Division of Pediatric Urology, Izmir, TURKEY

PURPOSE
A simple rectal enema can often provide adequate emptiness of rectum to evaluate intraabdominal pressure in most cases. However, it may not be effective in patients with spina bifida who have severe constipation. The aim of this study was to compare different approaches to provide rectal emptiness for urodynamic tests in spina bifida patients.

MATERIAL AND METHODS
After ethical approval, we prospectively recorded the findings of urodynamics in spina bifida patients. We performed urodynamic studies after a single rectal enema from March 2016 to March 2017 and after a three day rectal wash-out from March 2017 to September 2017. Two groups were compared in terms of failure to complete the study.

RESULTS
Urodynamic studies were performed in 164 spina bifida patients during the study period. There were 115 patients in the single enema and 49 patients in the three days wash-out group. There were no significant differences between the groups in terms of age (91 and 98 months respectively, p=0.722), sex (M/F:54/61 and 25/24, p=0.773), need for laxatives (24 % and 31 %, p=0.337) or incontinence (14 % and 22 %, p=0.260). The procedure was terminated due to the presence of stool in the rectum in none of the 49 patients in three days wash-out, but 29 of 115 (18 %) in the simple enema group (p<0.001).

CONCLUSIONS
A single rectal enema may be inadequate for completing a urodynamic study in spina bifida patients with severe constipation. A three-day intensive bowel cleansing warrants a successful study in most cases.

10:40 – 10:45

S5-6 (PP)

LIVING WITH A MITROFANOFF: A GROUP APPROACH

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PURPOSE

To deliver a group offering children with bladder exstrophy and their families the chance to gather information and share experiences about mitrofanoff surgery and living with a mitrofanoff.

MATERIAL AND METHODS

10 children (six boys and four girls), aged six to 16 years of age, attended with their parents. Seven had already undergone mitrofanoff surgery and three were considering it. Two group sessions were delivered three months apart to the same participants. The multi-disciplinary team ran tailored parent and child sessions in parallel. The format included provision of medical and psychosocial information as well as time for participant discussion. The Paediatric Incontinence Questionnaire (PinQ) was used to help identify those who might benefit from additional support around quality of life (QoL). A qualitative feedback questionnaire was used to evaluate the group.

RESULTS

100 % (n=10) of parents and 90 % (n=9) of children stated that they would recommend the group to others and rated it as ‘very helpful'. During the group sessions parents developed an information sheet for families, and children made a film about their thoughts on living with a mitrofanoff to help other service users. PinQ scores remained largely consistent for children pre and post (two children were identified as requiring additional psychosocial support). Parents were more likely than their children to report improved PinQ scores following the group.

CONCLUSIONS

Whilst parents and children both valued the group initiative, parents were most likely to perceive a measurable change in child QoL following the group. We reflect on this with reference to our descriptive data.