

## Poster Session 2: Pediatrics / Trauma / Reconstruction

### June 27, 2016 0800-0930

#### MP-02.01

##### **Cause and effect vs. confounding: Is there a true association between caudal blocks and tubularized incised plate repair complications?**

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**Introduction and Objectives:** Recent evidence suggests that complications post-hypospadias repair are more likely in children who receive caudal blocks (CB), however, the validity of this association remains undetermined. Herein we compare the rate of urethrocutaneous fistula (UCF) and glans dehiscence (GD) in post-tubularized incised plate (TIP) repair patients who received a CB compared to those who had dorsal penile block (DPB).

**Methods:** Between 2004 and 2015, 820 patients underwent hypospadias repair by two surgeons and were retrospectively reviewed. Re-do cases, non-TIP repairs, and incomplete medical records were excluded (n=302). Anesthesia type was anesthesiologist-dependent. Age at surgery, meatal location (ML), preoperative testosterone stimulation (PTS), type of regional anesthesia, degree of ventral curvature (VC), surgeon effect, and complications were captured. All cases had a two-layer PDS stented TIP urethroplasty covered by dartos flap. Uni and multivariable analyses of risk factors for complications were carried out. ML and VC were grouped as a single variable in the logistic regression model to account for the interaction between factors.

**Results:** Median age at surgery and followup time were 18 and three months, respectively. Of 518 patients, 38 (7%) developed complications: 21 UCF (19 CB, 2 DPB) and 17 GD (14 CB, 3 DPB). On univariate analysis, PTS vs. no PTS (13.4% vs. 6.2%; p=0.03), midshaft/proximal vs. distal defects (15.9% vs. 4.7%; p<0.01) and use of CB (8.5% vs 3.3%; p=0.03) were significantly associated with higher complication rates. However, the associations involving PTS (OR=1.3, 95% CI 0.4-3.9) and CB (OR=2.3; 95% CI 0.9-6.4) with complications did not hold during multivariable analysis, leaving ML/VC as the only independent risk factor for development of UCF/GD (OR=2.4, 95% CI 1.2-5.7; p=0.04).

**Conclusions:** Hypospadias severity, and not type of anesthesia, is the main risk factor for UCF/GD. The previously reported association between CB and UCF/GD is likely due to confounding. To assess the real impact of CB on hypospadias complications a randomized, controlled trial is needed.

#### MP-02.02

##### **Factors contributing to delay in time to orchidopexy in Ontario, Canada**

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**Introduction and Objectives:** The 2015 AUA guideline on cryptorchidism recommends early referral to a surgeon to ensure orchidopexy by 18 months of age. In a prior study, we noted that median time to orchidopexy in Ontario was 23 months (interquartile range (IQR) 16-34). The objective of this study was to identify factors contributing to this delay in orchidopexy.

**Methods:** We conducted a population-based, retrospective, cohort study using several linked administrative databases held at the Institute for Clinical Evaluative Sciences in Ontario. We identified 4399 patients who underwent orchidopexy between 2006 and 2011 and assessed several patient (socioeconomic status, healthcare visits, and surrogate markers of concern, such as hypospadias, preoperative ultrasound, bilateral or impalpable undescended testes (UDT), treating and referring physician (age and specialty), and hospital factors (volume and academic/community) that could impact timing of surgery. Multivariable logistic regression analyses were performed to compare boys who had orchidopexy before 18 months of age or after.

**Results:** The median age at surgery was 24 months (IQR 12-60). Patients who had an orchidectomy during exploration (OR1.61, CI 1.22-2.13), underwent laparoscopic orchidopexy (OR 1.57, CI 1.13-2.17), were operated by pediatric general surgeons versus urologists (OR1.69, CI 1.40-2.03), and at high-volume hospitals (OR 1.79, CI 1.38-2.33) had a greater likelihood of surgery beyond 18 months. Patients with more healthcare encounters (OR 0.94, CI 0.92-0.95), with prior ICU hospitalizations (OR 0.29, CI 0.15-0.58), hypospadias (OR 0.81, CI 0.58-1.12), or bilateral UDT (p<0.001) (OR 0.72, CI 0.58-0.89) were more likely to undergo timely surgery. In 3969 patients, (where first surgical clinic visit was documented), age at consult was 20 months (IQR 10-60). Counterintuitively, when there was a delay to the first consult, the eventual surgical procedure was likely to be done earlier (OR 0.84, CI 0.83-0.85).

**Conclusions:** In Ontario, time to orchidopexy far exceeds current recommendations, as 75% of patients with UDT have not had surgery by 18 months. In this study, we identified several patient, physician, and hospital factors contributing to this delay. Despite guideline recommendations, late first surgeon assessment still seems to be the main barrier to timely surgical intervention.

#### MP-02.03

##### **Younger patient age and bulbar strictures are associated with improvement in ejaculatory function after urethroplasty: Results of a prospective analysis**

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**Introduction and Objectives:** In addition to voiding dysfunction, urethral strictures may cause ejaculatory dysfunction. However, urethroplasty (UP) involves dissection near structures that are responsible for normal ejaculation. We aim to prospectively assess the changes and determinants of ejaculatory function (EjF) following UP.

**Methods:** Patients undergoing UP since Feb 2011 were offered enrollment in a prospective study examining changes in sexual function post-urethroplasty. Patients completed the IIEF questionnaire pre-operatively and at approximately six months. IIEF q9-10 scores were analyzed pre- and post-UP and compared with patient and operative factors, including stricture length, location, urethral transection, and age. Overall mean change in EjF pre- to post-operatively was calculated with Wilcoxon non-parametric tests. The change in EjF and its relationship to operative and patient factors was assessed with Chi-square and logistic regression.

**Results:** A total of 104 patients were analyzed. Mean patient age was 47 years and mean stricture length was 3.8 cm. Preoperative EjF scores (6.09), and postoperative EjF scores (6.52) were unchanged (p=0.24). 53.8% of patients experienced no change in their EjF score. 20.2% of patients experienced a decrease of one or more points, while 26% experienced an improvement of one or more points. When comparing bulbar to penile stric-

tures, there was a significant difference in mean change in Ejf ( $p=0.03$ ). Bulbar strictures were more likely to have an improvement in Ejf scores following UP (30.8% vs. 11.5%;  $p=0.05$ ). Younger patient age, both when assessed as a categorical ( $>50$  years) and continuous variable ( $p=0.001$ ) was associated with improvement in Ejf postoperatively (35.4% vs. 14.6%;  $p=0.01$ ). Urethral transection ( $p=0.86$ ) and stricture length ( $p=0.56$ ) had no impact on Ejf.

**Conclusions:** For the majority of patients, Ejf is not affected by UP. However, younger patients, as well as patients with bulbar stricture, are more likely to notice an improvement in their Ejf following UP.

## MP-02.04

### Predictors of stricture recurrence after bulbar urethroplasty: Multivariate analysis of 596 bulbar urethroplasties

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**Introduction and Objectives:** Bulbar urethral strictures are the most common form of urethral stricture. Although urethroplasty (UP) is the most effective treatment, some patients develop stricture recurrence. We examine possible risk factors for stricture recurrence after bulbar UP.

**Methods:** 596 patients undergoing isolated bulbar UP from August 2003 to June 2015 with complete followup were included in the analysis. UP failure was defined as a recurrent stricture  $<16$  Fr identified on cystoscopy during followup. Potential risk factors examined were patient age, stricture etiology, stricture length, diabetes, smoking, obesity, Charlson comorbidity index, number of previous endoscopic treatments, previous UP, and type of UP. Multivariable binary logistic regression was used to evaluate potential risk factors and determine associations.

**Results:** Mean patient age was 44.4 years old. Overall there was a 93.5% stricture-free rate with a mean followup of 63 months. Average stricture length was 3.9 cm. Stricture etiology was most commonly idiopathic (59.4%). 88.1% (525) of patients had failed prior endoscopic treatment while 10.7% (64) failed previous UP. Of the 596 UPs performed, 40.3% (240) were reconstructed using buccal mucosa as an onlay technique, 2.2% (13) were flaps, 28.5% (170) were augmented anastomosis, 27.7% (165) were anastomotic urethroplasties, and 1.3% (8) used combined tissue techniques with successes of 93.8%, 77.0%, 91.8%, 97.0%, and 75%, respectively. On multivariate analysis, decreasing stricture length ( $p=0.003$ ; OR 1.3; 1.1-1.4), increased patient comorbidity ( $p=0.018$ ; OR 2.8; 1.1-6.5), obesity ( $p=0.0025$ ; OR 2.7; 1.1-6.6), and infectious strictures ( $p=0.025$ ; OR 4.3; 1.2-15.5) increased the likelihood of stricture recurrence. Previous UP ( $p=0.19$ ), previous endoscopic procedures ( $p=0.19$ ), type of UP ( $p=0.88$ ), and individual comorbidities, such as diabetes ( $p=0.88$ ), smoking ( $p=0.76$ ), and patient age ( $p=0.86$ ), did not affect the rate of stricture recurrence.

**Conclusions:** Although bulbar UP has a very good (93.5%) stricture-free rate, patients with increased stricture length, increased overall comorbidity, obesity, and strictures of infectious etiology are at increased risk for bulbar UP failure and should be followed more closely for recurrence.

## MP-02.05

### The impact of steroid use on artificial urinary sphincter re-operation

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**Introduction and Objectives:** Artificial urinary sphincters (AUS) are used to treat male stress incontinence, often following radical prostatectomy. The objective of this study was to determine if oral corticosteroid use was associated with an increased risk of AUS-related reoperation.

**Methods:** Administrative data from Ontario was used to conduct a retrospective cohort study. Men  $>65$  years of age who underwent implantation of an AUS between April 1, 2002 and December 31, 2013 were included. Our primary outcome was the first AUS reoperation for any reason. Our primary exposure was a prescription for an oral corticosteroid at the time

of AUS implantation or during followup (but prior to the first AUS reoperation); men were considered exposed from the time of the first day of the prescription to 180 days after the last day of the steroid. Our primary analysis was a Cox proportional hazards model with steroid usage modeled as a time-varying covariate.

**Results:** We identified 747 men (median age 71, interquartile range (IQR) 68-75), of whom 592 (79.3%) had a prior radical prostatectomy. The median cohort followup was 3.2 (IQR 1.3-5.9) years. 175/747 (23.4%) were exposed to corticosteroids during the study period (median duration of prescription was 22.0 days, IQR 5.0-133.0). We identified an initial AUS reoperation in 176/747 men (23.5%) a median of 1.4 years (IQR 0.4-3.0) after implantation. In our primary analysis, with adjustment for age, radiation exposure, and year of implantation, the hazard ratio for subsequent reoperation on the AUS among steroid users was 1.75 (95% CI 1.08-2.84;  $p=0.02$ ).

**Conclusions:** To our knowledge, this is the first study to demonstrate a significantly increased risk in AUS reoperation among men taking oral glucocorticoids. This risk factor should be considered in patient counselling, and further studies evaluating the specific utilisation patterns of steroids and their association with AUS complications are warranted.

## MP-02.06

### Revisiting anastomotic urethroplasty in the era of non-transecting techniques

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**Introduction and Objectives:** Anastomotic urethroplasty is an effective, but occasionally controversial treatment for short bulbar urethral strictures. Non-transecting variations of anastomotic urethroplasty were created in part to address this controversy. The objective of this study is to reassess outcomes of anastomotic urethroplasty and compare transecting and non-transecting techniques.

**Methods:** 162 patients with complete followup underwent anastomotic urethroplasty from September 2003 to May 2015. The primary outcome was success defined as urethral patency  $>16$  Fr on routine followup cystoscopy. Secondary outcome measures included 90-day complications and de novo erectile dysfunction measured semi-quantitatively at six months. Statistical comparison between transecting and non-transecting cohorts were made using Fischer's exact and unpaired t-test.

**Results:** Mean stricture length was 1.6 cm (range 1-3 cm) with a mean patient age of 44.2 years (18-94). 79.6% of patients failed prior endoscopic treatment and 3.7% failed prior urethroplasty. Preoperative parameters were similar between groups. Overall, there was a 96.9% success rate with a mean followup of 54.2 months. 5.6% of patients experienced a 90-day postoperative complication and 8.6% experienced adverse change in erectile function. Postoperative complications included wound complications (2.5%), scrotal hematomas (1.2%), urethral bleeding (0.6%), urinary tract infection (UTI) (1.2%), chordee (1.2%), and ejaculatory dysfunction (1.2%). When comparing transecting and non-transecting techniques, there was no difference in success (96.2% vs. 100%;  $p=0.58$ ), de novo erectile function (9.9% vs. 3.2%;  $p=0.31$ ), or postoperative complications (6.1% vs. 3.1%;  $p=1.00$ ).

**Conclusions:** Anastomotic urethroplasty remains a highly effective treatment for short bulbar urethral strictures with relatively minimal associated morbidity. Newer non-transecting anastomotic urethroplasty techniques appear to compare favourably, with no obvious difference in success or complications.

## MP-02.07

### Dorsal onlay vs. a dorsal augmented anastomotic urethroplasty for the long bulbar urethral stricture

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**Introduction and Objectives:** While urethroplasty is the most definitive treatment for urethral strictures, controversy exists regarding the optimal surgical technique for long bulbar disease. Pure onlay grafting avoids transection of the urethra, but may sub-optimally treat obliterative segments at risk for recurrence. Augmented anastomoses involve partial stricture excision in an attempt to remove the most active areas of disease, but may risk vascular compromise through transection of the urethra. This culminates in a theoretical increased potential for erectile dysfunction or morbidity. We performed a retrospective cohort analysis to evaluate outcomes among these two surgical techniques.

**Methods:** A 950-patient database was examined for individuals undergoing urethroplasty with buccal mucosa grafts (BMG) for long (2-14 cm) bulbar strictures from 2003 to present. 236 patients received "pure" dorsal onlays with BMG. The augmented anastomosis approach was performed on 143 individuals. Patients were followed longitudinally after their procedures at three weeks with routine cystoscopy and at six months postoperatively in clinic. Our primary outcome was stricture recurrence (<16 Fr).

**Results:** Average age at surgery and stricture length were  $43.9 \pm 14.8$  years and  $4.8 \pm 2.0$  cm, respectively, with an average followup of  $63.9 \pm 36.2$  months. Of the dorsal onlay BMG patients, 211 of the 222 (92.9%) followed for greater than six months were found to be stricture-free, whereas 132 of the 140 (94.3%) undergoing the augmented approach did not experience stricture recurrence ( $p=0.662$ ). There was no significant difference between the cohorts with respect to 90-day complication rates (4.95% vs. 2.80%;  $p=0.421$ ) or worsening of erectile function postoperatively (4.21% vs. 3.65%;  $p=1.00$ ).

**Conclusions:** There is no significant difference in stricture-free success for patients undergoing dorsal onlay or augmented anastomosis urethroplasty procedures for long bulbar urethral strictures.

## MP-02.08

### Pediatric bladder augmentation: Panacea or Pandora's box?

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**Introduction and Objectives:** There are few longitudinal studies evaluating overall complication rates in children with bladder augmentation. This study reviews our experience with bladder augmentation procedures in the pediatric population and evaluates the complication rate post-bladder augmentation.

**Methods:** An Internal Review Board-approved retrospective chart review on all patients who had bladder augmentation at Children's Hospital of Eastern Ontario (CHEO) between 1990 and 2014.

**Results:** 56 procedures on 54 patients (28 males, 26 females), mean age 10 (SD 5) and mean followup eight years. Bowel segments included: ileum in 49 (87.5%), ileum/cecum in two (3.6%), and one each (2.0%) of ileum/cecum, stomach, colon, and ureter. Two patients (3.6%) received gastric reservoirs. 28 patients (50%) received catheterizable channels. Postoperative complications included extravasation on cystogram in three (4.1%), bladder perforation in two (3.7%), and wound infection in three (5.6%). Continent channels that required reoperation occurred in 10 of 26 (38%) but eight were skin-stoma-related, usually stenosis. Another two patients had bleeding and one had skin infection. Total complications resulted in return to OR in 19 of 54 (35.2%). During the followup, renal deterioration and electrolyte abnormalities each developed in three (5.6%), stone formation and worsening hydronephrosis each developed in eight (14.8%), hematuria developed in seven (13.0%), and 37 (68.5%) had urinary tract infection (UTI). There were no related deaths.

**Conclusions:** Most postoperative complications were minor and commonly associated with the continent conduit, however they required OR revision in a third of the cases and regular followup was necessary. The incidence of serious postoperative complications, including bladder

perforation and renal deterioration, was low. The rate of extravasation on the postoperative cystograms was only 4.1% and may be indicated only in selected cases.

## MP-02.09

### The effect of an aligning catheter on urethroplasty for pelvic fracture urethral injuries

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**Introduction and Objectives:** Pelvic fracture urethral injuries (PFUI) typically result in urethral stenosis requiring treatment. The effect of an aligning catheter on subsequent urethroplasty outcomes remains unclear. Our objective is to assess the effect of an aligning catheter on urethroplasty technique and outcomes for PFUI.

**Methods:** A retrospective review of urethroplasty for PFUI performed by a single surgeon from 2003 to 2015. Comparison was made between patients with an aligning catheter (Group 1) and suprapubic catheter (SPC) (Group 2). Rates of preoperative and postoperative erectile dysfunction, urethroplasty success, continence, injury grade, difficulty of urethroplasty, and length of stenosis were analyzed.

**Results:** 60 patients (mean age 40 years) were included for analysis. An aligning catheter was successfully placed in 40% of patients (24) and 56% (34) had placement of a suprapubic catheter. 14 patients (23% total) in the SPC group had a failed aligning catheter. 72% of patients had preoperative erectile dysfunction (ED) which did not differ between groups ( $p=0.24$ ). Patients with an aligning catheter were more likely to have strictures <2 cm (43% vs. 14%;  $p=0.05$ ) and to undergo a "simple" urethroplasty compared to those with an SPC (83% vs. 56%;  $p=0.05$ ). Urethroplasty success (87.3%;  $p=0.69$ ) and occurrence of postoperative incontinence (5.5%;  $p=1.0$ ) did not differ between groups with 74 months followup. Adverse change in postoperative ED did not differ between groups (81.8% vs. 62.5%;  $p=0.15$ ). However, when excluding those patients failing an aligning catheter (from the SPC group) there was a significant difference in postoperative ED (81.8% vs. 47.3%;  $p=0.03$ ). Those with a complete vs. partial urethral transection at initial assessment were more likely to receive a SPC (97% vs. 41%;  $p=0.0001$ ).

**Conclusions:** Placement of an aligning catheter for PFUI results in a shorter stenosis and higher likelihood of a "simple" urethroplasty. While there is no difference in stricture recurrence or incontinence when excluding those failing aligning catheter, there are higher rates of postoperative ED. It may be important to distinguish between the three different patient PFUI populations: those with an aligning catheter, a primary SPC, and those failing an aligning catheter.

## MP-02.10

### Outcomes of split-thickness skin graft reconstruction for major genital skin loss: The adverse impact of systemic disease processes

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**Introduction and Objectives:** Major genital skin loss is a devastating clinical event. Our objective is to report clinical outcomes of genital reconstruction using split-thickness skin grafts (STSG) for various local and systemic disease processes.

**Methods:** 31 male patients underwent genital STSG reconstruction from 2006-2015. The primary outcome was success defined as patient satisfaction with acceptable cosmesis, preserved standing micturition, and erectile function. Etiology, age, graft take, 90-day and delayed complications, and semi-quantitative assessment of patient satisfaction, cosmesis, erectile, and voiding function were assessed.

**Results:** Mean age was 48 years (range 19-80) and the most common etiology of genital skin loss was infection (41.9%), followed by buried penis (25.8%), neoplasia (16.1%), and lymphedema (16.1%). Reconstruction of the penis, scrotum, or both was performed in 71.0%, 19.4%, and 9.6% of patients, respectively. Overall success was 87.1% with a mean followup of 18 months. 90.3% of patients reported satisfaction and acceptable cosmesis. 96.1% of applicable patients reported preserved erectile function

(25/26) and 96.3% standing micturition (26/27). 93.5% of patients experienced good (>90%) graft take with timely maturation, but 64.5% experienced a 90-day complication. 95% of early complications were Clavien 1-2, including focal epidermolysis (32.2%), cellulitis (12.9%), urinary tract infection (3.2%), or hematoma requiring observation (3.2%). One patient (3.2%) required surgery for abscess debridement and repeat grafting. Specific etiologies did not impact success, but patients with systemic disease processes were more likely to experience 90-day complications (100% vs. 56%;  $p=0.04$ ) or impaired graft take (33% vs. 0%;  $p=0.003$ ). **Conclusions:** Reconstruction with STSG is an effective method for functional reconstruction of major genital skin loss with acceptable morbidity. Patients with systemic disease processes are more likely to experience 90-day complications and delayed graft take.

### MP-02.11

#### Renal injury does not affect clinical outcome in pediatric multi-organ abdominal trauma

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**Introduction and Objectives:** Most pediatric renal trauma can be safely managed conservatively. The impact of renal trauma on the outcome of concurrent intra-abdominal organ injury is not well-studied. We evaluated the impact of renal trauma in children with concurrent, blunt, abdominal multi-organ trauma at a tertiary-care children's hospital. We hypothesized that concurrent renal injury would not affect clinical outcome.

**Methods:** Internal Review Board-approved retrospective review of pediatric patients with multi-organ abdominal trauma (adrenal, spleen, liver, kidney, pancreas, bowel) from 1999-2014. Injury Severity Score (ISS) trauma score, need for intervention, transfusion, and length of stay (LOS) were compared in patients with and without renal injury. Fisher's exact test was used for categorical data and t-test was used for continuous variables, with significance level  $p<0.05$ .

**Results:** Of 210 patients (154 male/56 female) with abdominal trauma, 63 had renal injury (47 male/16 female) (Group A) and 147 no renal injury (107 male/40 female) (Group B). Patients in both groups had comparable average ISS scores: A=12.76, B=12.41;  $p=0.74$ ; and average LOS (days): A=5.8, B=5.6;  $p=0.82$ . There was no significant difference between groups regarding transfusion: A=7/63, B=10/147;  $p=0.29$ ; or operative intervention: A=10/63, B=24/147;  $p=1.0$ . Intervention comprised: open surgery A=2/10, B=20/24; laparoscopy A=0, B=3/24; endoscopy A=4/10, B=0; and embolization A=4/10, B=1/24.

**Conclusions:** Our study shows that concurrent renal trauma in the pediatric multi-organ abdominal trauma patient does not substantially affect ISS score. In addition there is no difference in clinical outcomes, including operative intervention, transfusion requirement, and LOS. Most interventions for renal trauma are endoscopic and radiological, while intervention for other intra-abdominal organ injuries more commonly comprise laparotomy or laparoscopy.

### MP-02.12

#### Urethrovaginal fistula repair: Long-term experience

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**Introduction and Objectives:** Urethrovaginal fistula (UVF) is not highly prevalent in urologic practice, but merits attention. There are few large series reported. This is a review of management of all women with UVFs that have been treated to assess etiology, management, and outcomes.

**Methods:** A total of 34 UVFs were reviewed retrospectively. Clinical presentation, prior repair, surgical approach, complications, result, and long-term lower urinary tract symptoms (LUTS) were recorded. All UVFs were closed in three or more layers. A variety of flaps were used. A suprapubic or foley catheter was left for four to six weeks.

**Results:** Mean patient age was 48.2 years (range 21-81). 12 (34.8%) were long-time smokers. Three had previous pelvic malignancies. 28 (82.3%) patients had undergone other pelvic surgery. The most common

etiology was an incontinence procedure in 12 patients (35.3%) with mesh erosion in six. Other causes were forceps delivery in five (15%), urethral diverticulum repair in five (15%), self-intermittent catheterization in three (10%), cystectomy and neobladder in two (6%), and other vaginal surgery in one (3%). 31 were closed via a transvaginally, including 13 with simultaneous rectus fascia pubovaginal slings. Two were approached transabdominally and one was a combined abdominal and vaginal approach. 13 were done with flaps, Martius in 10 and omentum in two. 32/34 (92.15) had successful repairs. Mean followup was 39 months (range 0.8-207.33). Long-term urinary frequency was seen in 11 (32.3%), urgency in 10 (29.4%), urgency incontinence in eight (24%), and stress incontinence in six patients (17.6%). Switching from suprapubic to Foley catheter drainage did not change success rate.

**Conclusions:** UVFs usually result from a surgical complication. Smoking may be a risk factor. Management that optimized outcome included adequate surgical exposure, multi-layer closure usually with flaps and/or rectus fascial sling, and catheter drainage. Tailoring the procedure to the patient appeared to be of benefit.

### UP-02.01

#### Shortcomings of radiological assessment of Wilms' tumour volume (using CT and MR) in the prediction of tumour weight on the pathology specimens

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**Introduction and Objectives:** Previous knowledge of Wilms' tumour volume diagnosed by imaging is an important tool to assess the degree of surgical challenge, morbidity, and treatment planning. We aimed to evaluate the relationship between the volumes of Wilms' tumours measured preoperatively on cross-sectional imaging (magnetic resonance (MR) or computed tomography (CT)) and the specimen weight at pathology.

**Methods:** Patients from a single institution, younger than 18 years of age, diagnosed with Wilms' tumour who had available pathology reports, as well as MR or CT were included. A urologist and pediatric radiologist independently measured the AP, transverse, and cranio-caudal diameters of the tumours according to a preset protocol. Volumes were calculated using formula for an ellipsoid ( $AP \times CC \times TR \times 0.523$ ) and compared with the tumour's weights on the pathology specimen. Correlation was assessed using linear regression and inter-observer agreement was assessed with a Bland Altman plot.

**Results:** 31 patients were included. The correlation between radiologic volumes and pathologic weights was initially  $R^2=0.72$ , but with the exclusion of four lesions that had more than 50% cystic or hemorrhagic components, the correlation improved to  $R^2$  value of 0.94. Bland Altman plot showed a mean difference of 6 cc (+/- 151 cc) with 95% limit of agreement between the two assessors.

**Conclusions:** Radiologic assessment of Wilms' tumour volume is highly correlated to tumour weight on pathology specimen in solid lesions and has a good inter-rater agreement, however, this does not appear to hold true for tumours with large cystic and hemorrhagic component.

1. Pasha TJ, et al. Correlation between CT-estimated tumour volume, pathologic tumour volume, and final pathologic specimen weight in children with Wilms' tumour. *J Pediatr Urol* 2014;10:148-54. <http://dx.doi.org/10.1016/j.jpuro.2013.08.001>
2. Cohen MD, Weber T, Grosfeld J. Preoperative evaluation of pediatric abdominal tumour volumes by computerized tomography. *J Pediatr Surg* 1984;19:273. [http://dx.doi.org/10.1016/S0022-3468\(84\)80184-0](http://dx.doi.org/10.1016/S0022-3468(84)80184-0)

## UP-02.02

### The effect of childhood surgery on adult hypospadias presentation and complications

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**Introduction and Objectives:** Males with hypospadias are likely at increased risk for future urologic complications as adults. However, it is unclear how childhood surgery modifies this risk. The purpose of this study is to describe the spectrum of adult presentations with hypospadias-related complications and examine the effect of childhood surgery on these complications.

**Methods:** A retrospective chart review over a 10-year period, from August 2004 to December 2014, demonstrated 93 adult patients who presented to a reconstructive urologist with urologic complications related to hypospadias. Patients were divided into two groups: those with no prior hypospadias surgery (Group 1, n=19) and those who underwent surgical correction as a child (Group 2, n=74). Charts were reviewed for age at presentation, initial complaints, history of repair, and surgical intervention required.

**Results:** The mean age at presentation was 34.6 years. Overall, lower urinary tract symptoms (LUTS) (49.5%) was the most common presenting complaint, followed by spraying (23.7%), urethrocuteaneous fistula (18.3%), recurrent urinary tract infection (UTI) (15.1%), and chordee (14%). Group 2 patients were more likely to present with LUTS (55.4% vs. 26.3%; p=0.04) and recurrent UTIs (18.9% vs. 0%; p=0.05). Contrastingly, Group 1 patients presented more commonly with cosmetic dissatisfaction (15.8% vs. 4.1%; p=0.04). Urethral stricture disease was demonstrated more commonly in Group 2 (47.3% vs. 10.5%; p=0.004). Of these, strictures were significantly longer in the previous surgery group (5.5 cm vs. 3.0 cm; p=0.02). Surgical intervention was required in 31.6% of Group 1 and 56.8% of Group 2 (p=0.07).

**Conclusions:** Correction of hypospadias as a child likely increases the future risk of urethral stricture, recurrent UTIs, and subsequent LUTS, but improves patient satisfaction with cosmesis. Followup of hypospadias repair patients should extend into adulthood, as a significant portion of adult presentations ultimately require surgical intervention.

## UP-02.03

### Complications of pediatric extirpative renal surgery: Analysis using the Clavien system

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**Introduction and Objectives:** Extirpative renal surgery (ERS) in children is most commonly performed for malignancy and benign congenital anomalies associated with poor or non-functioning segments. We present and analyze here complications following total and partial ERS using the Clavien system.

**Methods:** A retrospective analysis of the charts of patients, aged 0-18 years, who underwent ERS over a 10-year period (2005 to 2014) was performed, including: open and minimally invasive; partial and total nephrectomies. Transplant allograft nephrectomies were excluded. Complications were classified using the Clavien system. Results were evaluated for: indication, laterality, age, gender, method of ERS (open/minimally invasive), total or partial nephrectomy, and preoperative Hb. Univariate and multivariate analysis were used.

**Results:** 284 kidneys in 262 patients were evaluable. 48.1% were right-sided. Mean patient age was 6.2 years, with 55.7% being female. Malignant conditions constituted 39.3% of total cases. 50.4% were performed as open surgeries, and 78.2% were total nephrectomies done for malignant conditions in 35.1% of cases. Complications occurred in 24.4% of patients: 18.8% Clavien I, 64.0% Clavien II, 1.6% Clavien IIIa, and 15.6% Clavien IIIb. The most common complication was bleeding (51.4%). There were no mortalities. In univariate analysis, complications occurred more significantly in open total nephrectomy vs. laparoscopic (p 0.0001), bilateral surgeries (p 0.02), partial more than total (p 0.005),

partial for malignant more than those for benign (p=0.005), low preoperative Hb <12 gm (p=0.0003), and in malignant cases (p=0.002). On multivariate analysis, only low preoperative Hb was found significant (p 0.05). **Conclusions:** Complications are not infrequent in pediatric ERS, although mostly Clavien I and II, which can be managed without surgical intervention. Low preoperative Hb, malignancy, and bilateral cases are associated with the highest risk for postoperative complications. Laparoscopic approach to ERS may minimize complications risk.

## UP-02.04

### Postoperative fever in the pediatric patient undergoing total or partial nephrectomy for a benign pathology: Should we care?

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**Introduction and Objectives:** Fever above 38°C is common in the first days after surgery. Most early postoperative fever is caused by the inflammatory response to the surgery itself and resolves spontaneously within two to four days.<sup>1</sup> Although nephrectomies in children are procedures with a low complication rate, febrile episodes after surgery include infectious and noninfectious conditions. Differential diagnosis can lead up to septic workups with moderately invasive investigations, which might cause concerns for both the medical team and family. We sought to determine the postoperative rate of febrile episodes for total and partial nephrectomies among both groups and evaluate the necessity to investigate all febrile episodes in the postoperative period.

**Methods:** A retrospective review of patients undergoing nephrectomy for benign renal disease between 2000 and 2015 was conducted in a single centre. Demographics were assessed and outcomes evaluated, including fever (temperature >38°C) and post-operative complications. Patients were stratified into two groups: partial nephrectomy vs. total nephrectomy and subgroups (open vs. minimally invasive approach). Differences between groups were analyzed using Fisher's exact test, X2 test, and multivariate logistic regression. In all tests, p<0.05 was considered to indicate statistical significance.

**Results:** A total of 129 patients were identified (76 females, 53 males), including 87 (67.4%) total nephrectomies and 42 (32.6%) partial nephrectomies. No differences were noted in their baseline characteristics. The median age at surgery was 46 months (range 1-180 months). Pyrexia (range 38-39.9°C) developed in 61 patients (47.2%). The incidence was markedly higher in the partial nephrectomy group (66.6%) compared to the total nephrectomy group (37.9%) (p<0.05). Regarding postoperative complications, only three patients developed urinary tract infection in the open nephrectomy group vs. one in the minimally invasive group.

**Conclusions:** Most febrile episodes for both groups occurred, as expected, during the first three postoperative days. Interestingly, the proportion of fever was more important in the partial nephrectomy group. However, we did not find significant difference with regards to the surgical approach. Considering there were no serious complications associated with these febrile episodes, one can conclude that observation may suffice in most cases. Regarding the differences, one can postulate that the resected margin may release more inflammatory markers. Larger trials could further delineate this.

1. Lesperance R, Lehman R, Lesperance K, et al. Early postoperative fever and the "routine" fever workup: Results of a prospective study. *J Surg Res* 2011;171: 245-50. <http://dx.doi.org/10.1016/j.jss.2010.03.009>
2. Barie PS, Hydo LJ, Eachempati SR. Surgical infections. *Summer* 2004;5:145-59. <http://dx.doi.org/10.1089/sur.2004.5.145>

## UP-02.05

### Impact of endovascular ablation of renal nerves in patients with loin pain hematuria (LPS): Prairie LPS study

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**Introduction and Objectives:** Loin pain hematuria syndrome (LPHS) is a painful and incapacitating condition that typically afflicts young women. Treatment options are either opiates and/or surgical denervation of the renal nerves that includes auto transplantation or even nephrectomy with varying success.

**Methods:** Three patients between the ages of 28 and 62 years (all female) with LPHS underwent endovascular ablation of the renal nerves between July and November 2015 using the Vessix™ renal denervation system. The number and frequency of pain medications, EQ-5D, McGill Pain Questionnaire, Geriatric Depression Score, Short Form (SF)-36, and Oswestry Disability Index were measured at baseline and at three months post-procedure to evaluate changes in pain, disability, quality of life, and mood.

**Results:** There were improvements in pain (McGill Pain Questionnaire), disability (Oswestry Disability Index), and quality of life (EQ-5D and SF-36) from baseline to three months post-procedure. Two-thirds of patients were off all pain medications, while one-third had a 70% reduction in the dose.

**Conclusions:** We conclude that endovascular ablation of renal nerves is associated with a decline in the number of pain medications and considerable improvement in quality of life and pain. These results suggest that percutaneous catheter-based delivery of radiofrequency energy is a safe, rapid, treatment option that should be considered in all patients with LPHS.

## UP-02.06

### Long-term results and safety of polyacrylamide hydrogel for the endoscopic treatment of vesicoureteral reflux in children

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**Introduction and Objectives:** Polyacrylamide hydrogel (PAHG) has been shown to offer a good short-term success rate for the endoscopic treatment of vesicoureteral reflux (VUR) in children. Our objective was to provide long-term results focusing on the safety of PAHG.

**Methods:** We performed a prospective study using PAHG to treat VUR Grades I to V in children. All patients underwent endoscopic subureteral injection of PAHG, followed by a three-month postoperative renal ultrasound (US) and voiding cystourethrogram (VCUG), and US was repeated at 12 and 36 months. Treatment success was defined as the absence of de novo or worsening hydronephrosis and absence of VUR. Safety elements included new or worsening hydronephrosis, calcification of the injected material, and urinary tract infection (UTI).

**Results:** 85 children underwent an endoscopic injection with PAHG. Eight were lost to followup after three months and were excluded. For the remaining 77 patients (124 ureters, 53 females), 47 had bilateral VUR and 30 had unilateral VUR. Mean age at surgery was 4.5 years and mean followup was 33 months. Mean injected volume of PAHG was 1.1 ml. The overall success rate three months after a single treatment was 71%. During long-term followup, 68/70 eligible patients underwent the 12-month US, and 40/46 eligible patients underwent the 36-month US. No upper tract deterioration or bulking agent calcifications were reported. Nine patients (12%) presented a non-febrile UTI and two patients (2.6%) had febrile UTI during followup, including one late recurrence of VUR (re-injected).

**Conclusions:** The success rate of PAHG in endoscopic injection for VUR treatment is comparable to published results on dextranomer hyaluronic acid. The long-term safety data provides further support for the use of this non-particulate bulking agent, which is less prone to calcifications, to treat VUR in children. The potential lower cost of PAHG makes it an interesting option.

## UP-02.07

### Prognostic factors of chronic renal insufficiency in patients with posterior urethral valves

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**Introduction and Objectives:** Posterior urethral valve (PUV) is the most common cause of congenital bladder outlet obstruction and chronic kidney disease (CKD) in the male pediatric population. The aim of this study is to determine the prognostic value of nadir creatinine during the first year of life and all other potential factors that might increase the likelihood of developing CKD in patients with this condition.

**Methods:** Hospital records of all patients with PUV were reviewed from 1980 to 2010. All patients underwent endoscopic valve ablation. Abnormal kidney function was defined as CKD Stage 2 or higher. Studied variables included: Age at diagnosis, nadir creatinine at first year of life, glomerular filtration rate, renal ultrasound and voiding cystourethrogram findings. Univariate and multivariate analyses were conducted in order to identify independent prognostic factors for CKD. Statistical significance was defined as  $p < 0.05$ .

**Results:** A total of 114 PUV patients satisfied our inclusion criteria. At diagnosis, the mean age was 2.9 years. Among them, 32.5% were diagnosed antenatally, 23.7% before one year of life and 43.9% after. Urinary tract infections (UTIs) were more common at diagnosis (36%). Initial ultrasound showed bilateral hydronephrosis in 42.1% of patients and loss of the corticomedullary differentiation in 24.5% of patients. Vesicoureteral reflux was present in 34.2%, and 31.5% of patients had bladder dysfunction. The mean followup period was 7.9 years (SD 4.61). An abnormal kidney function was found in 18.4% patients, among them 4.38% reached end-stage renal disease. Patients developing CKD were more likely diagnosed before one year of life (80% vs. 20%). The mean of nadir creatinine at first year of life in patients who developed CKD was 54.14  $\mu\text{mol/l}$  vs. 27.48  $\mu\text{mol/l}$  for patients with normal renal function. Diagnosis before one year of age, elevated nadir creatinine at first year of life, bilateral hydronephrosis, recurrent UTIs, and loss of corticomedullary differentiation were significant predictors of renal outcome on univariate analysis. Presence of vesicoureteral reflux, incontinence, and nadir creatinine after endoscopic valve resection had no significant correlation with CKD.

**Conclusions:** Posterior urethral valve disease can lead to deleterious effects on long-term renal function. Nadir creatinine at first year of life was the only independent predictor of CKD on multivariate analysis. Nonetheless, age at diagnosis, presence of UTI, and radiological findings on ultrasound represent important prognostic factors that should be taken into consideration in order to optimize patient management.

1. Coleman R, King T, Nicoara CD, et al. Nadir creatinine in posterior urethral valves: How high is low enough? *J Pediatr Urol* 2015;11:356.e1-5. <http://dx.doi.org/10.1016/j.jpuro.2015.06.008>
2. Coleman R, King T, Nicoara CD, et al. Combined creatinine velocity and nadir creatinine: A reliable predictor of renal outcome in neonatally diagnosed posterior urethral valves. *J Pediatr Urol* 2015;11:214.e1-3. <http://dx.doi.org/10.1016/j.jpuro.2015.04.007>
3. Lemmens AS, Mekahli D, Devlieger R, et al. Population-specific serum creatinine centiles in neonates with posterior urethral valves already predict long-term renal outcome. *J Matern Fetal Neonatal Med* 2015;28:1026-31. <http://dx.doi.org/10.3109/14767058.2014.942278>
4. Sarhan OM, Helmy TE, Alotay AA, et al. Did antenatal diagnosis protect against chronic kidney disease in patients with posterior urethral valves? A multicentre study. *Urology* 2013;82:1405-9. <http://dx.doi.org/10.1016/j.urology.2013.07.058>



**UP-02.08****Ultrasound prior to urology referral for suspected cryptorchidism: A wasteful practice**Wayne, Carolyn<sup>1</sup>; Keays, Melise<sup>1,2</sup>; Guerra, Luis A.<sup>1,2</sup>; Leonard, Michael P.<sup>1,2</sup><sup>1</sup>Pediatric Surgery, Children's Hospital of Eastern Ontario, Ottawa, ON, Canada; <sup>2</sup>Faculty of Medicine, University of Ottawa, Ottawa, ON, Canada

**Introduction and Objectives:** Undescended testis (UDT) is the most common genital abnormality identified in male infants and a frequent cause for referral to pediatric urology. Patients may have already undergone an ultrasound (US) ordered by the referring physician before consultation. It is our hypothesis that this practice is common, costly, and inaccurate for testis localization. Our objective was to determine the proportion of boys referred for suspected UDT who had accompanying US, the cost of this practice, and the accuracy of US for testis localization.

**Methods:** We retrospectively reviewed the charts of all patients referred to a tertiary-care pediatric urology service for suspected UDT from 2008-2012. We noted whether or not an US was ordered before referral and compared the location of the testis on US to the urologist's examination (normal/retractile, inguinal, or impalpable). Additionally, we calculated the cost of US ordered for this referred cohort using the current OHIP fee schedule.

**Results:** We identified 894 eligible patients; 289/894 (32%) were accompanied by US. In 223/289 (77%), the urologist was able to palpate the testis: 147/289 (51%) had a normal/retractile testis and 76/289 (26%) had a palpable undescended testis. At a cost of \$71.10 per US, \$20 547.90 was expended on this practice. Of the 223 patients with palpable testes, we were able to gather detailed US and physical examination results for 214 (138 normal/retractile testes, 76 palpable UDT). In 131/214 (61%), the US results did not correlate with the urologist's findings. Interestingly, in 116/138 (84%) patients with normal/retractile testes, the US showed at least one inguinal testis. In fact, in 22/214 cases (10%), the US incorrectly identified a normal testis as inguinal on the side contralateral to that of concern.

**Conclusions:** Referral of patients for suspected UDT should not be accompanied by an US study, as this is an unnecessary and wasteful practice.

**UP-02.09****Child and parent questionnaires evaluating a bladder training video or standard urotherapy in improving symptoms of bladder bowel dysfunction**Li, Christine<sup>1</sup>; Rickard, Mandy<sup>1</sup>; Brownrigg, Natasha<sup>1</sup>; Easterbrook, Bethany<sup>1</sup>; Jegatheeswaran, Kizanee<sup>1</sup>; DeMaria, Jorge E.<sup>1</sup>; Lorenzo, Armando J.<sup>2</sup>; Braga, Luis H.<sup>1</sup><sup>1</sup>Pediatric Urology, McMaster University, Hamilton, ON, Canada;<sup>2</sup>Pediatric Urology, University of Toronto, Toronto, ON, Canada

**Introduction and Objectives:** Bladder bowel dysfunction (BBD) is a common pediatric urology referral. A randomized, controlled trial was recently completed at our institution to compare a bladder training video (BTV) to standard urotherapy (SU). Herein, we examine patient and parent evaluations of BTV and SU to explore their perceptions of the two urotherapy modalities.

**Methods:** Patients and their caregivers currently enrolled in a trial evaluating BTV vs. SU completed questionnaires three months following urotherapy to determine perceived effectiveness, urotherapy engagement, and self-reported progress. BBD symptomology scores and quality of life (QoL) using the Vacouner questionnaire and PinQ QoL, respectively, were measured at baseline and followup. Responses to evaluation questionnaires were correlated to symptomology and QoL scores using simple regression models. Student t-tests were used to compare responses between groups.

**Results:** Of 122 patients that completed the trial, 114 (93%) returned the evaluation questionnaires with equal response rates for both groups. Patients in SU compared to BTV found the urotherapy information difficult to understand (28% vs. 2%;  $p \leq 0.01$ ). The parent questionnaire demonstrated that while information in both groups was found to be clear, children had significantly more difficulty applying information in the SU group ( $p = 0.05$ ). Children in the BTV group felt significantly more empowered to fix their BBD ( $p < 0.05$ ). Despite this, both treatment groups

showed improved symptomology (BTV:  $5.9 \pm 0.76$ , SU:  $6.2 \pm 0.77$ ) and QoL (BTV:  $6.1 \pm 1.7$ , SU:  $3.7 \pm 1.7$ ) scores. Patients who were actively engaged in implementing urotherapy strategies were more likely to see improvement in BBD symptoms ( $p < 0.01$ ) and QoL ( $p < 0.05$ ) regardless of modality compared to those who were not as engaged.

**Conclusions:** Although patients in both groups showed improvement in BBD symptoms and QoL, BTV may be a more child-friendly means of delivering urotherapy than SU according to patients' and caregivers' perceptions.

**UP-02.10****Outcome analysis of redo orchiopexy: Scrotal vs. inguinal approaches**Naoum, Naimet<sup>1</sup>; Lopes, Roberto I.<sup>1</sup>; Chua, Michael<sup>1</sup>; Canil, Thomas<sup>1</sup>; Dos Santos, Joana<sup>1</sup>; Farhat, Walid A.<sup>1</sup><sup>1</sup>Urology, SickKids, Toronto, ON, Canada

**Introduction and Objectives:** Surgical management of secondary undescended testis by both scrotal and inguinal orchiopexy has been shown to be successful with limited complications. Herein, we report our experience with redo orchiopexy in children, aiming to analyze the outcome of the two approaches.

**Methods:** After obtaining Research Ethics Board approval, we did a retrospective review capturing patients who underwent a redo orchiopexy at a single centre between January 2004 and May 2015. Variables evaluated included primary procedure, operative time, rate of conversion, operative complications, and testicular location at last followup. 3384 orchiopexies were performed in this study period, with 61 patients having undergone a redo orchiopexy (1.8%). Mean patient age was 6.4 years (range 1.5-17.1), and mean followup period was 21.9 months (range 2.1-99.6). The primary surgical procedure preceding the redo surgery was inguinal orchiopexy in 45.9%, scrotal orchiopexy in 13.1%, laparoscopic approach in 13.1%, or status post-inguinal surgery in 27.9%. In 33 patients, redo surgery was performed by an inguinal approach, while 28 children had scrotal approach. No statistical difference in both intra- and postoperative complication rates was found for the two approaches ( $p = 0.7$ ,  $p = 0.6$ , respectively). Apart from the additional incision in the inguinal group, the complications found included scrotal/testicular tear, atrophy, inadequately positioned testes, and orchiectomy. The overall operative time was statistically different ( $p = 0.002$ ), with scrotal orchiopexy being significantly shorter at an average of  $53.1 \pm 22.2$  minutes compared to inguinal at  $84.6 \pm 52.3$  minutes. The testes ended at the bottom of the scrotum without complications in 54.8% when operated on inguinally and in 65.2% when operated on scrotally, though this difference was not found significant ( $p = 0.6$ ).

**Conclusions:** Both scrotal and inguinal orchiopexy appear to be viable in the management of secondary ascending testis, with scrotal approach offering some advantage in terms of the procedure length.

**UP-02.11****Associations of initial SFU grades and UTD risk groups with clinical outcomes in patients with isolated prenatal hydronephrosis**Braga, Luis H.<sup>1,2</sup>; McGrath, Melissa<sup>1,2</sup>; Jegatheeswaran, Kizanee<sup>1,2</sup>; Easterbrook, Bethany<sup>1,2</sup>; Rickard, Mandy<sup>1,2</sup>; Wong, Nathan C.<sup>1,2</sup>; DeMaria, Jorge E.<sup>1,2</sup>; Lorenzo, Armando J.<sup>3</sup><sup>1</sup>Urology, McMaster University, Hamilton, ON, Canada; <sup>2</sup>Urology, McMaster Childrens Hospital, Hamilton, ON, Canada; <sup>3</sup>Urology, SickKids, Toronto, ON, Canada

**Introduction and Objectives:** The 2014 Urinary Tract Dilation (UTD) classification was proposed to address shortcomings of the Society for Fetal Urology (SFU) grading system.<sup>1</sup> We compared initial SFU hydronephrosis (HN) grades vs. UTD risk groups in relation to future surgery and fUTI rates in infants with isolated HN.

**Methods:** We prospectively screened 879 patients with prenatal HN between 2009 and 2015. We only included patients with ureteropelvic junction obstruction (UPJO)-like HN ( $n = 305$ ); megaureter (60), vesicoureteral reflux (VUR) (83), other genitourinary (GU) anomalies (118), presentation  $> 12$  months (195) and HN resolution at first visit (118) were

**Table 1. UP-02.11. Rates of fUTI and pyeloplasty in patients with UPJO-like according to SFU grades and UTD risk groups**

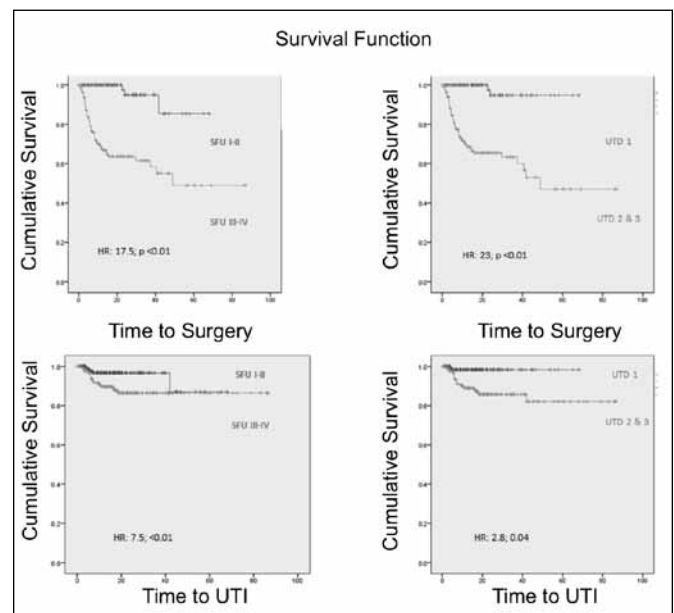
Grading system	Pyeloplasty n=56 (%)	Conservative n= 249 (%)	Total (n=305)
SFU I	0 (0)	38 (100)	38
SFU II	3 (3)	107 (97)	110
SFU III	19 (17)	91 (83)	110
SFU IV	34 (72)	13 (28)	47
UTD 1	2 (1)	136 (99)	138
UTD 2	16 (14)	98 (86)	114
UTD 3	38 (72)	15 (28)	53
Grading system	UTI n= 22 (%)	No UTI n= 283 (%)	Total (n=305)
SFU I	2 (5)	36 (95)	38
SFU II	3 (3)	107 (97)	110
SFU III	11 (10)	99 (90)	110
SFU IV	6 (13)	41 (87)	47
UTD 1	2 (1)	136 (99)	138
UTD 2	13 (11)	101 (87)	114
UTD 3	7 (13)	46 (87)	53

excluded. SFU and UTD grades were collected at baseline, surgery and last followup. Primary outcomes were pyeloplasty and fUTI rates.

**Results:** Mean age at first visit was  $3.3 \pm 2.6$  months and mean followup was  $21 \pm 17$  months. About 82% were males (n=249), of whom 35% were circumcised. Mean APD for surgically vs. conservatively managed patients was  $24 \pm 11$  mm and  $10 \pm 6.5$  mm, respectively. Pyeloplasty was performed in 34% patients with SFU III-IV and 32% of those with UTD 2/3 (p=0.88). Rates of fUTI in SFU III-IV patients were similar to UTD 2/3 (11% vs. 12%; p=1.00). Children with SFU III-IV had a significantly higher rate of surgery (34% vs. 2%; p<0.01) and fUTI (32% vs. 1.5%; p<0.01) compared to SFU I-II. Similar findings were seen with the UTD groups comparing low- (1) vs. mod/high-risk patients (2/3). Rates of fUTI and pyeloplasty in infants with UPJO-like HN according to SFU and UTD are displayed in Table 1. Survival curves of time to pyeloplasty and time to fUTI comparing SFU I/II vs. III/IV and UTD 1 vs. 2/3 are shown in Fig.1.

**Conclusions:** Both grading systems equally allowed for risk stratification and prediction of clinical outcomes, correctly separating infants who underwent surgery or developed fUTI from those managed conservatively. Use of the new UTD compared to SFU should not affect how families of children with prenatal HN (UPJO-like) are counselled regarding need for surgery and fUTI risk.

1. Nguyen HT, Benson CB, Bromley B, et al. Multidisciplinary consensus on the classification of prenatal and postnatal urinary tract dilation (UTD classification system). *J Pediatr Urol* 2014;10:982-98. <http://dx.doi.org/10.1016/j.jpuro.2014.10.002>



**Fig. 1.** UP-02.11.