# Moderated Posters 2: Pediatrics
# June 30, 2014, 0730-0900

## MP-02.01
### Laparoscopic Pyeloplasty: Impact of 3D Vision Laparoscopy and Articulating Shears

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**Introduction:** To compare outcomes of laparoscopic pyeloplasty in a cohort of children with 3 dimensional (3D) vision laparoscopy and articulating shears to a cohort with standard 2 dimensional (2D) laparoscopy.
**Methods:** 33 patients with ureteropelvic junction obstruction who underwent laparoscopic pyeloplasty by a single surgoen from 2006 to 2013 were included. The current 3D cohort was compared to the previous 2D cohort, excluding cases from 2001-2005 to account for the learning curve. Excluded from the study were 3 cases of prior pyeloplasty, 2 because of ureteroscopy for fibroepithelial polyps and 1 open conversion in a duplex kidney with intrarenal pelvis. Patient age, weight, gender, side, operative time, dimension, presence of a crossing vessel, length of hospital stay and complication rate were compared between the 2 groups. Articulating shears were used for pelvotomy and spatulation of the ureter. Statistical tests included linear regression models and chi square tests using STATA.
**Results:** The median age and weight of the population was 7.5 yrs and 28.5 kg, and 19 patients had a crossing vessel. Mean operative time for 2D (n=19) and 3D (n=8) cases was 265 minutes and 216 minutes. Operative time was decreased by an average of 48 minutes in the 3D group compared to the 2D group (p=0.02), even after adjusting for the presence of a crossing vessel (p=0.03). There was no difference in median age, weight, or presence of crossing vessel between both groups. 3D did not affect Complication rate and length of hospital stay. The majority of 3D cases where performed using the laparoscopic flexible scissors, which was significantly associated with operative time (p=0.02).
**Conclusions:** The use of 3D vision and articulating shears for pyeloplasty in children appears to significantly reduce operative time compared to conventional 2D vision with rigid scissors. This approach provides an alternative to current robotic assisted technology, warranting attention in view of significant cost saving.

## MP-02.02
### Reservoir Lithiasis Following Augmentation Cystoplasty and Umbilical Continent Urinary Diversion

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**Introduction and Objectives:** Augmentation cystoplasty (AC) and continent urinary diversion (CUD) have become the standard of care in the management of refractory neurogenic bladder in the pediatric population. One commonly described complication of such reconstruction is reservoir stone formation. We reviewed our institutions' experience with reservoir lithiasis in patients treated with AC and umbilical CUD.
**Methods:** We conducted a retrospective review of medical records of patients who underwent AC and CUD with an umbilical stoma at British Columbia Children's Hospital, documenting the nature of the urinary tract reconstruction with regards to the bladder, bladder neck (BN) and CUD, as well as reservoir lithiasis formation, composition and treatment.
**Results:** We identified 107 patients, 58 female and 49 male, who underwent AC and CUD between 1995 and 2013, with a mean age at surgery of 15 years (range 3-59 years). Mean follow-up was 71 months (range 1 month-15 years). Underlying pathologies included myelomeningocoele (62%), bladder exstrophy (16%), spinal injury (5%), sacral agenesis (3%), cerebral palsy (3%), and other (15%). The majority of patients underwent ileal cystoplasty (94%) and mitrofanoff appendicovesicostomy (75%) with an umbilical stoma. The BN was manipulated in 75% of patients (28% closed, 34% burch, 14% sling). The rate of reservoir calculus was 14%, with an average time to first stone of 59mo (range 13 months-10 years) from OR. The majority of stone composition was pure or mixed struvite (95%). 20% of patients with reservoir stone formation experienced recurrent stones. 68% of stones were treated with open cystolithopaxy, while 32% were approached endoscopically.
**Conclusions:** We present a long term follow-up series of AC and CUD in a large single institution series with reservoir calculus formation of 14. All patients in our series had umbilical stomas and may serve to compare reservoir lithiasis formation rates between different stoma sites in future studies.

## MP-02.03
### Multicystic Dysplastic Kidney in Children: Is Long-term Radiographic Follow-up Necessary?

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**Introduction and Objectives:** Multicystic dysplastic kidney (MCDK) is relatively common, usually diagnosed by antenatal ultrasound in 1 in 4300 births. The majority of cases carry low morbidity and good prognosis. Despite this, long-term follow-up is commonplace, due to concerns of possible malignant transformation and development of hypertension. We set out to define the need for long-term follow-up, and consolidate the recommendations of the current literature given the relatively low rate of associated comorbidities in this cohort of patients.
**Methods:** An IRB approved retrospective analysis of patients with MCDK followed at our institution between 1990-2013 was carried out. Data was analyzed regarding length of follow-up, rate of MCDK involution, malignant transformation, hypertension and renal failure.
**Results:** Records of 201 patients were reviewed. Mean length of follow-up was 7.1 years (SD 5.1). Males were affected at a ratio of 1.3:1, and the right side was affected at a ratio of 0.9:1. Overall, 93% (183/196) of patients were diagnosed by prenatal ultrasound. Vesicoureteric reflux was found in 19% (23/120) of patients who had a VCUG. The MCDK kidney underwent complete involution in 38% (76/201) of cases over the course of follow-up. There were no cases of malignant transformation. The incidence of hypertension and renal failure were 5% (10/201) and 3% (6/201), respectively.
**Conclusions:** MCDK carries a low rate of associated co,morbidity. Based on this small series, long-term urological follow-up is not necessary in patients with a normal contralateral kidney. After confirmation of contralateral renal growth, compensatory hypertrophy and adequate renal function, follow-up should be done by the primary care physician in the form of regular blood pressure checks and urinalysis. A larger series would be necessary to validate these findings.

## MP-02.04

### Predictors of Morbidity, Mortality and Re-operation Due to Hernia and Catheter-related Complications in Children on Peritoneal Dialysis

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**Introduction and Objectives:** Peritoneal dialysis (PD) is the therapy of choice for children with ESRD. Hernias and catheter-related complications are common. We assessed predictors of re-operation due to hernias and catheter-related complications after PD catheter (PDC) placement.

**Methods:** We performed a retrospective chart review of all patients who underwent PDC insertion at our institution from 2001-2012. Multivariate Cox Regression analysis was used to identify significant predictors of complications.

**Results:** A total of 65 patients were included. Mean age at insertion was 8.9 years (SD=6.5), 17 (26.2%) were <1 year of age and 31 (47.7%) were male. Mean follow-up was 7.4 y. (SD=3.9). At time of PDC insertion, omentectomy was done in 21 (32.3%) and laparoscopic assistance was used in 12 (18.5%). A total of 81 complications requiring surgical revision occurred in 44 patients over 1130 PD-months (1 revision/14.0 PD-months). Re-operation rate was 94.1% and 41.7% for patients <1 y. and >1 year of age, respectively (p<0.001). Twenty revisions were due to hernias (17 inguinal, 2 umbilical and 1 incisional) and 61 due to PDC-related complications. Median time to hernia repair was 84.5 days (IQR=225). Of the 17 patients < 1 y., 12 (70.1%) developed a hernia. Median time to first revision due to PDC-related complication was 57.5 days (IQR=190), and 22/32 (68.8%) occurred in patients > 1 year (p<0.001). Revisions were due to peritonitis in 13 (40.6%), PDC blockage in 14 (43.7%), and leakage in 5 (15.6%). In 6 patients the PDC was removed, repositioned in 12 and exchanged in 14. Twenty patients required a second revision, 7 a third and 2 a fourth. Significant predictors of re-operation for hernias were age <1 year at insertion (HR=8.3) and male gender (HR=3.7). No significant predictors of re-operation due to catheter-related complications were identified. At conclusion of follow-up, 9 (13.8%) patients remained on PD, 8 (12.3%) were on hemodialysis and 43 (66.2%) received renal transplants. Six patients died during the study period (mortality rate 7.7%) of causes unrelated to PDC insertion or underlying renal disease.

**Conclusions:** Re-operation due to PD malfunction was common in both neonates (primarily hernias) and pediatric patients (primarily PDC malfunction). We could not identify any patient-specific or operative predictors of PDC-related complications, but a high number of male neonates required revision due to hernias, suggesting that male neonates undergoing PDC insertion may benefit from simultaneous laparoscopic or inguinal assessment for a patent processus vaginalis.

## MP-02.05

### Prolonged Urinary Retention Can and Does Occur after "Any" Type of Ureteral Reimplant

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**Introduction and Objectives:** Prolonged urinary retention (PUR) has been reported to occur, not infrequently, after bilateral extravesical ureteral reimplantation (BER). We sought to identify whether this morbid complication occurs after: unilateral extravesical reimplantation, open or robotic (UER), open unilateral intravesical reimplantation (OUR), or open bilateral reimplantation (OBR). We also attempted to evaluate potential risk factors that might predispose the child who undergoes reimplantation, to unexpected PUR.

**Methods:** The records of 4 surgeons were retrospectively reviewed from a time period of 1998-2010. PUR was arbitrarily defined as inability to voluntarily urinate and where the patient required alternate means of bladder emptying (intermittent or indwelling cath, vesicostomy) for >1 month duration after reimplant surgery. Sex, age, and reason for initial surgery, as well as associated bowel bladder dysfunction (BBD) were reviewed in order to assess their impact on PUR.

**Results:** During the time of review, 6 patients developed PUR. These included: 3 boys after OBR for grade V vesicoureteral reflux (VUR) & 1 female after OUR for grade IV-V VUR. Single cases have occurred in 2 boys after UER for congenital obstructive megaureter, 1 open & the other robotic, but both with tapering. Three patients were <2 years and 3 >3 years. In 1 patient there was a known history of constipation preoperatively, and in retrospect, 3 other patients likely did have BBD as well. All patients were neurologically intact with normal MRIs of the spine (performed after development of PUR). 4 patients have required multiple secondary surgeries due to their PUR or initial problem: cystoscopies, re-do reimplant, vesicostomy, reduction cystoplasty. The shortest duration of PUR was 6 weeks, but 1 patient suffers permanent retention >12 years after OBR.

**Conclusions:** PUR is a complication thought to be associated only with BER. Our results show that PUR may occur after "any" ureteral reimplantation surgery.

## MP-02.06

### Implementation of Strategies to Decrease the Exposure to General Anesthesia in Children Undergoing Dismembered Pyeloplasty

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**Introduction:** The effect of repeat pediatric exposure to general anesthesia (GA) on long-term cognitive function is a complex concern. We reviewed our experience with the need for a second GA to remove a ureteral stent post-pyeloplasty during a time when two interventions were introduced to decrease this exposure: increased use of externalized stents, and creation of a pediatric cystoscopy clinic for internal stent removal under oral sedation and local anesthesia.

**Methods**: We retrospectively analyzed all pyeloplasties performed at a single institution from July 2007 through August 2013, specifically assessing the number of patients stented at the time of pyeloplasty, the type of stent employed and how the stent was removed.

**Results:** 289 consecutive patients undergoing dismembered pyeloplasty were identified, with an average age of 4.7 years. Overall, 68% had double-j stents (average age 5.8 years), 29% had externalized pyelo-ureteral stents (average age 1.9 years), and 3% had no stent (average age 6.0 years). All external stents were removed on the inpatient ward, or in the clinic. The rate of a second GA being required solely for double-j stent removal decreased from 74% in 2007-08 to 32% in 2012-13 (p<0.05). Over the same timeframe, the use of external stents has increased from 22% to 53%. 23% of all double-j stents were removed in the clinic without GA over the last year (the time since implementation of the cystoscopy clinic), with the average patient age of 15.1 years.

**Conclusions:** With the increased use of externalized stents in younger patients and the implementation of a program to remove double-j stents in the clinic in older patients, the need for a second GA has been greatly reduced following dismembered pyeloplasty. Finally, operative cost savings, decreased operating room utilization and added scheduling flexibility for stent removal are anticipated.

## MP-02.07

### Does Dismembered Pyeloplasty in the Presence of a Crossing Vessel Have Superior Surgical Outcomes?

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**Introduction:** We assessed whether children with a lower pole crossing vessel (CV) as the cause of uretero-pelvic junction obstruction had superior surgical outcomes.

**Methods:** We retrospectively analyzed all pyeloplasties done at a single institution from July 2007 through December 2011. Data collected

included age at the time of surgery, pre- and postoperative ultrasound measurements, technical approach (open or laparoscopic), incidence of CVs and the specific need for re-operation (with the exception of post-operative stent removal).
**Results:** 205 consecutive patients undergoing pyeloplasty were identified. Average age was 4.8 years (range 0.1-18) and mean follow-up was 4 years (range 1.9-6.2). 52 (25%) had a CV. Average CV patient age was 9.6 years (SD 5.1 years) and 79% were treated laparoscopically, versus 3.2 years (SD 4.6 years) and 25% managed laparoscopically in the non-CV group (n=153). No major complications were seen. There was no difference in antero-posterior renal pelvis diameter %-improvement between the two groups (CV 46% vs. non-CV 42%; p=0.6). No patient required re-intervention if a CV was identified intraoperatively. In contrast, in the non-CV group, 9/153 (5.9%) required re-intervention (p=0.07), totaling 22 additional procedures (dilation, endopyelotomy, redo pyeloplasty, stent replacement), although one revision was required due to a missed CV initially in a 7 month-old male.
**Conclusions:** While the difference in re-intervention rate between the groups is close to statistical significance, likely due to sample size and number of outcomes, the presented findings appear clinically relevant. Children who undergo dismembered pyeloplasty for obstruction due to crossing vessels experience extremely favorable outcomes, information that has value for counseling and postoperative monitoring.

## MP-02.08

### Validation of a Non-invasive Sonographic Tool to Detect Success Early on after the Pediatric Pyeloplasty

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**Introduction and Objectives:** We sought to validate percent improvement in pelvis AP diameter (PI-APd) as a non-invasive tool to establish success after the pediatric pyeloplasty in an independent cohort from the original report.
**Methods:** Retrospective review of charts meeting the following inclusion criteria: children who underwent dismembered pyeloplasty over a 10 year period for asymptomatic UPJO detected prenatally; at least 1 year of follow-up; pre- and 3-4 month postoperative imaging available. Failure of initial pyeloplasty was defined by the need for repeat intervention. Sonographic findings were correlated with nuclear scan results. A single investigator determined the pre and postoperative renal pelvis sonographic AP diameter in a mid-transverse view. Its percent improvement was calculated as PI-APD=(Preop-Postop APD)/Preop APD). Percent improvement in the nuclear scan drainage curve (t1/2) was evaluated in a similar fashion (PIt). Receiver-operator curves (ROC) were plotted to correlate PI-APD and PIt with failure. A binary prediction model was used to validate the PI-APD cut-off previously established.
**Results:** Forty-one patients were included (mean age at surgery-34.5 months and follow-up 24.2±32.1 months). Five patients (12%) developed recurrent obstruction. Their PI-APD was significantly greater than unobstructed patients (p=0.002). Both PI-APD and PIt were predictive of pyeloplasty failure, however the first was significantly superior (ROC area under the curve 0.96 and 0.79, p=0.0013). PIt and PI-APD had poor correlation (rs=0.29). The binary prediction model validated the previously established PI-APD cutoff of 38%, with all pyeloplasty failures falling below the cutoff.
**Conclusions:** In concordance with the original study, PI-APD reliably predicted treatment failure after pediatric pyeloplasty. These findings should help decrease the extent of invasive postoperative testing in this population.

## MP-02.09

### Can More Cost Less? An Economic Evaluation of Prophylactic Antibiotic Treatment for Infants with High Grade Hydronephrosis for the Prevention of Urinary Tract Infections in Canada

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**Introduction and Objectives:** The purpose of this study is to determine if continued antibiotic prophylaxis (CAP) versus No CAP is an efficient use of scarce Canadian healthcare resources, given the costs and consequences, to treat children with high grade hydronephrosis (HN) to prevent febrile urinary tract infection (UTI) within the first 2 years of life.
**Methods:** A probabilistic decision model was used to estimate the expected costs, outcomes and Quality-Adjusted Life Years (QALYs) of CAP versus No CAP. Cost data were collected from provincial databases and corrected to 2013 Canadian dollars. Estimates of risks and health utility values were obtained from medical literature. Cost-effectiveness was expressed as dollars/UTI and dollars/UTI requiring hospitalization. Cost-utility was expressed as dollars/QALY. The analysis was performed from a third party payer perspective with a time horizon of two years. One-way sensitivity analysis was performed to assess uncertainty and robustness. National cost impact was calculated using extrapolated HN incidence data.
**Results:** The mean annual cost for CAP was $1414.06 versus $1685.56 for No CAP. CAP (versus No CAP) reduced UTIs regardless of severity by 0.28, and 0.04 for UTIs requiring hospitalization per year. Cost-utility analysis revealed an increase of 0.62 QALYs/year when using CAP versus No CAP. Given this dominance of CAP over No CAP no incremental cost effectiveness ratios where calculated. CAP continued to exhibit dominance over No CAP treatment in all sensitivity analyses. Nationally CAP saves an average of $833,668 ($208,403-$1,042,071) per year when compared to No CAP.
**Conclusions:** Overall CAP is less costly, more effective in reducing UTIs, and increases health utility when compared to No CAP. Across all three outcomes CAP is a better use of scarce Canadian healthcare resources when compared to No CAP in infants with high-grade HN in the prevention of UTIs within the first two years of life.

## MP-02.10

### Distance Travelled for Hospital Visit as a Predictor of Preference for Tele-Health Pediatric Urology Clinic Evaluation: Quality Assurance Assessment of Families Visiting a Tertiary Care-centre

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**Introduction and Objectives:** Clinic visits impose important and often unmeasured demands to families and patients. Alternative strategies to evaluate and manage pediatric urology conditions have gained popularity in recent years. Within the Canadian universal access to care system, "Tele-Health" is available through a large network encompassing most geographical regions in Ontario. Herein we assessed preferences by families attending clinic to use this alternative care strategy, focusing on the impact distance travelled for the clinic visit has on this inclination.
**Methods:** A total of 1032 family members were surveyed over a 3-month period during routine clinic assessment. Each participant provided information regarding preference for assessment through Tele-Health, as well as distance travelled to the hospital and costs incurred for a in-person evaluation. Categorical and ordinal data were analyzed and stratified based on reported preferences, and data were plotted on maps with radial distance circles epicentered on the hospital.
**Results:** The survey had a very high complete response rate (96.7%). Of these, 38.4% reported favoring preference for Tele-Health evaluation, while 31.3% did not and 24% were unsure. Distance travelled to attend the clinic visit was significantly associated with incurred expenses independent from any fees or assessment costs (p<0.05). On stratified analyses, there was a statistically significant, progressively growing preference for Tele-Health assessment based in distance travelled.

**Conclusions:** Distance travelled to the hospital is a significant predictor of costs incurred by families and an important factor influencing preference for Tele-Health evaluation. This alternative model of care appears to be a promising strategy to conduct outpatient pediatric urology visits, and should be routine offered, particularly for families who are geographically distant from the hospital.

## MP-02.11

### Comparison of Outcomes and Complications in Pediatric Renal Transplant Patients with Autoimmune versus Urologic Causes of End Stage Renal Disease (ESRD)

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**Introduction:** Renal transplant is the most effective long-term treatment for pediatric ESRD. The etiology of ESRD can affect the outcomes and type of complications after renal transplantation. Concerns remain about higher urologic complication rates after anatomic causes of renal failure in pediatric patients especially with valve bladders, prune belly and dysfunctional voiding. Our study aims to classify and compare the incidence of urologic complications, between anatomic/urologic (group A) and autoimmune/non urologic (group AI) etiologies of ESRD.

**Methods:** Group A included patients with ESRD due to reflux nephropathy, valve or exstrophy bladder, congenital dysplasia and Ureteropelvic junction obstruction. Group AI included patients with ESRD due to glomerulonephritis, atypical HUS, membranous glomerulonephropathy, etc. Retrospective chart analysis of incidences was done for urologic complications (ureteral strictures, pyelonephritis, hydronephrosis, vesicoureteral reflux and urinary tract infection) and allograft rejection between the A and AI groups.

**Results:** 66 patients fulfilled study criteria. 24/66 (36.4%) were in group AI, 36/66 (54.5%) were in group A, and 6/66 (9.1%) had an unknown etiology of ESRD. Except for pyelonephritis, there was no statistically significant increase in the incidences of urologic complications like ureteral stricture, reflux, or hydronephrosis between the 2 groups ($p>0.05$). Pyelonephritis was the only urologic complication more common in group A ($p<0.05$). Patients in group AI were more likely to have allograft rejection ($p<0.05$).

**Conclusions:** In our study kids with anatomic causes of ESRD had a higher incidence of pyelonephritis, but a lower incidence of allograft rejection when compared to patients with non-urologic causes of ESRD. Contrary to the historic data, there was no significant increase in incidence of other urologic complications post transplant in this group.

## MP-02.12

### Laparoscopic Orchidopexy with or without Preservation of Cremasteric Vessels: Can We Reduce Atrophy Rates?

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**Introduction and Objectives:** Despite Conventional Laparoscopic Fowler-Stephens Orchidopexy (CLO) widespread acceptance as a 1 or 2-stage procedure, atrophy rates can be as high as 30%. We had previously described an alternative laparoscopic technique, which involves pulling the testis through the internal inguinal ring (IIR), without dividing the gubernaculum and sparing the cremasteric vessels (GSLO), aiming to reduce testicular atrophy. Herein, we sought to compare these procedures.

**Methods:** We prospectively collected data on all pts who had GSLO from 2008-13 and compared results with a historical cohort of pts who had CLO between 2005-08. We excluded pts with missing follow-up US data(n=16), resulting in 212 boys to form our study sample. Primary outcome was atrophy rate (nubbin or impalpable testis confirmed by postop doppler US), and testis position in the scrotum (entrance/high vs. low). Variables captured were age at surgery, location of intra-abdominal testis(IAT) [peeping vs. true IAT (>2 cm from IIR)], technique (CLO vs. GSLO), stages (1 vs. 2), and patency of IIR. Uni- and multivariable analyses were performed.

**Results:** Mean pt age at surgery was 28.7±16.3 months and mean follow-up was 28.6±20.5 months. Of the 212 pts, 1-stage lap. orchidopexy was performed in 44(21%) cases and 2-stage in 168(79%). CLO was done in 46(22%) and GSLO in 166(78%). The overall atrophy rate was 6.6%(14/212). 13/46 testes atrophied after CLO vs. 1/166 following GSLO (28.3% vs. 0.6%, $p<0.01$). 8/44 testes had atrophy after 1 stage versus 6/168 following 2-stage procedure (18.2% vs. 3.5%, $p<0.01$). 2/46 testes were located in the upper part (entrance) of the scrotum after CLO vs. 15/166 following GSLO (4.3% vs. 9.0%, $p=0.3$). On multivariable analysis, CLO was the only factor associated with higher atrophy rates (OR=15, 95%CI: 6-44).

**Conclusions:** Our findings suggest GSLO was significantly associated with lower testicular atrophy rates compared to CLO, after adjusting for number of orchidopexy stages and testicular position.

## MP-02.13

### Effect of Hypospadias Severity and Preoperative Hormone Stimulation (PHS) on Urethrocutaneous Fistula (UCF) Rate after Tubularized Incised Plate (TIP) Repair: A Prospective Analysis

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**Introduction and Objectives:** Recent evidence has linked PHS with higher UCF rate after hypospadias repair; however this association merits more in-depth evaluation considering other risk factors. Herein we present data on UCF formation and cosmetic outcome taking into account preop hypospadias severity and PHS.

**Methods:** 144 boys who underwent TIP repair were identified in a prospective database of 244 pts that systematically captured baseline, operative and follow-up data over a 5-year period (2008-13). Redos (9), lost to follow-up (9), and other techniques (82) were excluded. The primary outcome was UCF. PHS was indicated when glans size was <13 mm. Age, modified GMS score (GMS), PHS status, and postop cosmetic assessment were recorded. GMS score, calculated based on glans size, UP width and characteristics, meatal location and ventral curvature, ranged from 3 (mild) to 9 (severe). The surgeon assessed cosmesis (judging meatal location, mucosal collar redundancy, penile straightness, and penoscrotal angle), by employing a 7-point likert scale. Student's t test, linear and logistic regression and Fisher's exact test were used for analyses.

**Results:** Median age at surgery was 18 months (6-308). Mean f/u was 10±12mos. A total of 8/144 (5.6%) patients had UCF: 3/108(75%) in distal, 3/21(15%) in midshaft, 2/15(10%) in proximal defects. UCF rate was higher in mid/proximal cases (5/36-14% $p=0.01$ vs. 3/108-3%). Mean preop. glans width was 13.3±2.4 mm. PHS was used in 41(28%) patients. Mean preop. GMS score was higher in boys who received PHS vs. not PHS (5.8±1.2 vs. 4.7±0.9, $p<0.01$). Patients treated with PHS had a significantly higher UCF rate vs. those that were not (5/41-12.2% vs. 3/103-2.9%, $p=0.03$). Patients who developed UCF had a significantly higher GMS score than those without (6.3±1.6 vs. 4.9±1.0, $p<0.01$). On multivariable analysis, after adjusting for PHS and meatal location, mean GMS score was the main predictor of UCF (OR=3.1 95%CI:1.1-9.6). Cosmetic rating had no association with PHS (6.2±1.1 vs. 6.5±0.6, $p=0.06$), or GMS scores ($r^2=0.05$).

**Conclusions:** Although pts treated with PHS had a significantly higher fistula rate, their preop GMS scores were also significantly worse, suggesting a systematic selection of severe cases for PHS. When taking both factors into account, the GMS score appears to be a stronger predictor of hypospadias outcomes, reflecting a more accurately representation of the pt's disease severity and risk for complications.

## MP-02.14

### More Is Not Necessarily Better: A Randomized Controlled Trial Evaluating the Effectiveness of Group versus Individual Urotherapy in Reducing Symptoms Associated with Bladder Dysfunction

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**Introduction and Objectives:** Urotherapy is standard non-pharmacologic, non-surgical care for children with non-neurogenic lower urinary tract dysfunction (NLUTD), but the most effective form of delivery remains inconclusive. A pilot randomized controlled trial was conducted to evaluate feasibility and preliminary effectiveness of urotherapy in a group versus individual setting in reducing NLUTD symptoms.

**Methods:** Over 1 year, 455 children aged 6-10 with NLUTD were prospectively screened from a single institution. Of these, 79 were eligible and 60 were recruited. Patients with additional urological conditions, learning disability, English as second language, and those who had received urotherapy within 1 year were excluded. Enrolled patients were allocated using randomization tables to either a 1-hour group urotherapy session (GU) or a 10-minute individual urotherapy session (IU). Symptom severity, from the child's perspective, was measured using the Vancouver NLUTD questionnaire at baseline and at 3-6 months follow-up. Mean scores were calculated and within/between group comparisons were done using t-tests.

**Results:** Thirty children were randomized to each group. Mean age was 7.3±1.3 years. Twenty-four GU patients and 25 IU patients completed the study (11 withdrew: 6:GU, 5:IU). There was no difference in baseline mean symptomology scores between GU and IU (18.3±7.6 vs.19.5±7.2; p = 0.59; 95%CI: -3.1-5.4) nor at last follow-up (14.7±7.9 vs. 13.4±6.3; p = 0.54; 95%CI: -5.4---2.8). Within group analyses revealed significant decrease in symptoms scores from baseline to follow-up in both GU (3.6±7.6; p=0.03; 95%CI: 0.4-6.8) and IU patients (6.0±5.4; p<0.01; 95%CI: 3.8-8.3).

**Conclusions:** No difference in symptom scores was observed in children with NLUTD after IU and GU. However, both interventions significantly improved symptoms at last follow-up, suggesting urotherapy effectively reduces bladder dysfunction symptoms regardless of delivery modality.

## MP-02.15

### Laparoscopic Renal Cyst Decortication (LRCD) for Autosomal Dominant Polycystic Kidney Disease (ADPKD) in a 5-year-old Child

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**Introduction and Objectives:** Symptomatic presentation of ADPKD is not commonly seen in children. LRCD for ADPKD, although commonly performed in adults, has not been described in the pediatric literature. We report the first case of LRCD for massively enlarged polycystic kidneys in a child.

**Methods:** Herein we present a video of the surgical technique used for LRCD.

**Results (case report):** A 5-year-old child was referred from Nephrology with complaints of abdominal mass and distension. He had no hypertension and his medical history was significant for tuberous sclerosis. Blood work showed creatinine 47 µmol/L and urea 5.3 mmol/L. The patient had no family history of tuberous sclerosis or kidney disease. Genetic testing confirmed ADPKD. MRI showed massively enlarged bilateral polycystic kidneys occupying the entire abdominal cavity. Right and left renal length measured by ultrasound were 18 and 22 cm, respectively. After initial work-up and evaluation staged bilateral LRCD was scheduled. The procedure was performed under general anesthesia in semi-lateral decubitus position. Three laparoscopic trocars were used. Operative time was 150min and estimated blood loss was minimal. The patient was discharged from the hospital on postoperative day 2. The abdominal distension was markedly improved postoperatively. At 6 weeks follow-up, the patient is symptom-free. Postoperatively, renal function was stable at 54 µmol/L. There were no perioperative or short-term complications.

**Conclusions:** LRCD for massively enlarged ADPKD appears to be a safe and effective procedure for symptomatic patients without compromising the renal function.