Podium Session 4: Pediatric Urology June 29, 2009, 1530–1630

POD-4.01

How do toilet-trained kids void following tubularized incised plate repair of hypospadias?

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Introduction and Objective: We report the functional outcome of asymptomatic, toilet-trained children following uncomplicated tubularized incised plate (TIP) repair of hypospadias.

Materials and Methods: The records of patients who underwent a TIP repair of hypospadias at the Montréal Children's Hospital between April 1997 and September 2007 were reviewed. Patients were included if they were toilet trained, asymptomatic and had flow rate data done more than 1 year after TIP. Children with postoperative complications or those who required dilation were excluded. Variables predictive of outcome including the surgeon, the type of hypospadias, the presence of a hypoplastic urethra, reinforcement stitches, spongioplasty and the use of a stent were recorded. Uroflow data (peak flow, voided volume and postvoid residuals (PVRs) were analyzed and plotted on previously determined age-volume dependent nomograms.

Results: Fifty-six patients were eligible for the study. Median age at surgery was 1.5 years. Hypospadias was distal penile in 49 (87%) and mid and proximal penile in 7 (13%). Mean follow up was 3 (standard deviation 1, 1–8) years. The uroflow curve was bell shaped in 14 (25%), interrupted in 8 (14%), slightly flattened in 28 (50%) and plateau in 6 (11%). Nomograms showed that 36 (64%) were in the 80th percentile, 11 (20%) were in 95th percentile range and 9 (16%) were plotted below 5th percentile. Postvoid residual was greater than 10% of bladder capacity in 23 (41%). Examining the curve shape, nomograms and PVR data against variables predictive of outcome, did not generate any statistical difference outputs.

Conclusion: Although asymptomatic, the majority of children after TIP repair have flattened uroflow curve of whom 41% inefficiently empty their bladders and 16% have peak flow plotted below 5th percentile. The long-term outcome after puberty remains to be determined.

POD-4.02

Pediatric urology telemedicine: virtual visits using digital photography aids in reduction of emergency department visits

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Introduction and Objective: In the pediatric population, postoperative parental concerns prompt many calls and emergency department (ED) visits. Despite preoperative teaching, urology residents on home call at our institution routinely receive calls about surgical wounds. Given our patients' geographic diversity and that the majority of concerns are from normal wound healing, we have added digital technology to our home-call armamentarium. Parents email digital images with hopes that this added information might avoid unnecessary ED visits without compromising clinical care. We retrospectively reviewed our experience of patient-acquired images (PAI) and patient outcomes.

Materials and Methods: Current urology residents taking pediatric calls responded to a questionnaire evaluating Internet access, receptivity to receiving digital images, and whether they have used PAI before. When on-call residents receive calls from parents about postoperative wound concerns, parents can either send digital images to a secure email account for evaluation or travel to our ED for evaluation in a hospital setting. All images are reviewed by an attending surgeon to confirm a triage plan. We retrospectively evaluated these cases of PAI over a 12-month period.

Results: The questionnaires were complete by 11/11 residents: 91% of residents had home Internet access, 91% believed that review of digital images could reduce ED visits and were willing to use this as part of the evaluation, and 45% have used PAI at least once. We identified 12 pediatric cases involving PAI, including 3 hypospadias, 2 orchiopexies, 2 ureteral reimplants, 2 scrotoplasties/penile reconstruction, circumcision and buried penis repairs, respectively. Parent concerns included swelling (7), infection (3) and bleeding (2). An ED visit was unnecessary in all cases. One parent chose to come to the ED after phone consultation but the final plan of care was unchanged. Based on the images, 3 patients were started on antibiotics for surgical site infection. There were no long-term complications identified during the postoperative visits.

Conclusion: This pilot study demonstrates that PAI can allow effective and safe patient management, allay parent concerns, and provide educational opportunities for urology residents and families. Patient-acquired images utilizes 2 ACGME core competencies: *Patient Care* and *Systems Based Practice*. Patient-acquired images maximizes cost effectiveness and rapid clinical feedback while minimizing burdens on resident duty hours, already overcrowded EDs and patient families traveling long distances.

POD-4.03

Solifenacin for overeractive bladder in children: a prospective open-label study

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Introduction and Objective: Paediatric urologists frequently encounter children presenting symptoms of bladder overactivity. Optimal anticholinergic pediatric dosage is not well known. Historically, oxybutinin has been effective in treating overactive bladder but is poorly tolerated. Tolterodin has been shown to be as effective as oxybutinin with fewer side effects (S/E). Newer agents, such as solifenacin, could be an alternative but their use in children as never been reported. Therefore, we aimed at optimising medical therapy in a select group of children which failed to improve under oxybutinin or tolterodin by using solifenacin and evaluating its efficacy, tolerability and safety.

Materials and Methods: Paediatric patients presenting refractory overactive bladders with incontinence were offered to enter a prospective open-label protocol using adjusted-dose regimens (solifenacin 1.25 to 10 mg). Inclusion criteria were: absence of correctable neurological anomalies (MRI), failure of symptoms improvement under intensive behavioural and medical (oxybutinin or tolterodin) therapies and/or significant S/E with other agents. The follow-up consisted of voiding diaries, postvoid residuals and urine cultures every 3 months and ultrasound and UDS every 6 months. Families were regularly questioned for continence, S/E, compliance, change in behaviour and quality of life. Blood samples and EKG were obtained to detect potential toxicity. The primary end point was efficacy toward continence; the secondary end points were tolerability and safety.

Results: A total of 60 patients (33 girls, 27 boys) were enrolled. Twenty-five patients with neurogenic bladder (10 CIC) and 35 with overactive bladder completed a minimum of 3 months follow-up. Mean age at initiation was 8.5 years. They were on solifenacin for a mean of 11 months. Urodynamic capacity improved from 152 (standard deviation [SD] 66) to 330 (SD 135) and uninhibited contractions decreased from 72 (SD 30) to 23 (SD 18) cm H_2O. Continence improved in all (22 dry, 33 significantly and 5 moderately improved). Forty-two patients reported no S/E, 14 mild, 2 moderate and 2 withdrew from the protocol due to S/E. Four patients developed significant postvoid residuals (> 20%). Blood tests and EKG remained normal.

Conclusion: In the presence of overactive bladder refractory to oxybutinin or tolterodin, solifenacin was proven to be an alternative to improve symptoms in the pediatric population. Tolerability was acceptable and the adjusted-dose regimen appeared safe.

POD-4.04

Is routine renogram required after pyeloplasty?

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Introduction and Objective: We question if renogram should be a routine postoperative test after pyeloplasty.

Materials and Methods: The records of all patients who underwent pyeloplasty between 1989 and 2005 at our hospital were identified. Patients were eligible for the study if they had undergone preoperative ultrasound (US) and renogram and postoperative US and renogram within 3 months and 1 year after surgery, respectively. Patients were excluded if they had associated anomalies or high-grade reflux. Postoperative US was recorded as improved or not, based on the radiologist report. Data obtained from the postoperative renogram included the presence or absence of obstruction as well as the split renal function. Comparison between the postoperative US and the renogram were made. Moreover, we compared the changes in split renal function before and after surgery in patients with normal contralateral kidney. The Fisher exact test was used for comparison.

Results: Ninety-six patients who underwent 101 pyeloplasties at a median age of 18 months were eligible for review. The mean follow-up was 4.5 (standard deviation 2) years. Of the 91 kidneys in which the postoperative US showed an improvement, 2 kidneys (2%) had an obstructed postoperative renogram, which spontaneously resolved during follow-up. In contrast, of the 10 kidneys with postoperative US showing no improvement, 4 (40%) showed obstructed renogram, of which 2 (50%) required a second procedure ($p < 0.001$). None of 49 patients with preoperative split function greater than 45% has demonstrated changes more than 5% postoperatively compared with 15 of 35 (43%) patients with function less than 45% ($p < 0.00$).

Conclusion: Patients in whom postoperative US shows an improvement do not require postoperative renogram to role out obstruction. However, those with preoperative function less than 45% may demonstrate functional changes of more than 5% that can be determined by postoperative renogram.

POD-4.05

Risk factors for reoperation following tubularized incised-plate urethroplasty: a comprehensive analysis

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Introduction and Objective: To review our experience of the tubularized incised-plate (TIP) urethroplasty over 10 years and determine the risk factors for reoperation.

Materials and Methods: We retrospectively reviewed charts of 391 patients who underwent a TIP urethroplasty from April 1997 to September 2007. Median age at surgery was 2 (range 0.5–16) years. Variables predictive of outcome including age at surgery, history of prior surgery, surgeon, type of hypospadias, presence of a hypoplastic urethra, use of tourniquet versus epinephrine, size, type and technique of neourethral sutures, neourethral coverage and use of a stent were recorded. The presence of neourethral complications, requiring reoperations, was noted. Variables were assessed against reoperation using univariate and multivariate analysis.

Results: Median follow-up was 11 (range 3–96) months. Fifty-two neourethral complications requiring reoperation were detected in 46 (12%) patients including, fistula in 25 (6%), disruption in 13 (3%), meatal stenosis in 13 (3%) and stricture in 1 (0.3%). Reoperation rate was not significantly different among the surgeons, between primary (12%) and reoperative cases (18%), the suture size, 6–0 (16%) and 7–0 (10%), use of Vicryl (14%) and PDS (10%), use of tourniquet (14%) versus epinephrine (11%) or between stented (13%) and nonstented cases (11%). Reoperation rate was significantly higher in the presence of distal urethral hypoplasia (15/76 [20%]) than 28/287 (10%) without hypoplasia ($p < 0.02$), with interrupted (15/66 [23%]) than continuous sutures (33/325 [10%]) ($p < 0.01$), in children with penoscrotal and proximal shaft hypospadias (18/57(32%) than distal and midpenile (30/334 [9%]) ($p < 0.00$), in the presence of curvature requiring dorsal plication (18/73 [25%]) versus no curvature (30/318 [9%]) ($p < 0.001$), with no neourethral coverage (13/45 [27%]) versus coverage by spongioplasty only (5/39(13%), dartos flap only (27/235 [12%]), or both (3/74 [4%]) ($p < 0.00$), and in children older than 4 years (22/124 [18%]) than younger kids 26/267 (10%), ($p < 0.03$). In multivariate analysis, however, the last 4 factors were the only significant independent risk factors.

Conclusion: In addition to proximity of the meatus, presence of curvature and absence of vascular covering flap, our study provided evidence that operating upon children older than 4 years is an additional independent risk factor for neourethral complications, requiring reoperation.

POD-4.06

Study comparing the applicability of dorsal lumbotomy in older children

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Introduction and Objective: Dismembered pyeloplasty through dorsal lumbotomy for the correction of ureteropelvic junction obstruction is mainly performed successfully in children less than 5 years old for technical reasons. We compared the records of 108 children who underwent dorsal lumbotomy by age group (< 5 v. ≥ 5 yr) to determine if the surgical success and long-term results were comparable.

Materials and Methods: We retrospectively reviewed the charts of 108 children undergoing a dismembered pyeloplasty by a single pediatric urologist from 2002 to 2008. Data were obtained from hospital records. The study population was divided into 2 groups. Group 1 consisted of children < 5years old ($n = 77$) and Group 2 consisted of older children, aged 5 years or older ($n = 31$). Patients' characteristics as well as hospital stay, narcotic use, mean decrease in postoperative ultrasound anteroposterior diameter and success rate were compared. Success was defined by absence of symptoms and reduction of renal pelvis anteroposterior diameter and/or decrease of hydronephrosis on ultrasound and/or scintigraphic improvement of the drainage T1/2 when indicated. Univariate analysis was performed to compare the 2 groups on different factors.

Results: The main mode of presentation in group 1 was prenatal diagnosis (78%), whereas flank pain (68%) dominated in group 2. Mean age and weight at surgery were 1 yr/8 kg and 10 yr/35 kg, respectively. The mean operative time and the mean blood loss were 100 minutes and 5 mL versus 120 minutes and 18 mL, respectively. The mean hospital stay was 2.5 days for both groups and analgesia requirement was 50% higher in group 2. A Pippi-Salle stent was used in 90% ($n = 97$) of cases while JJ stent in 9% ($n = 10$). Intraoperative and postoperative complications were not significant. The mean follow-up was 16 and 20 months for group 1 and 2. Success rate was 91% and 94% ($p = 0.6$) for both groups, respectively.

Conclusion: Our study showed comparable success rates. We can infer that as a technique, dismembered pyeloplasty is effective and safe in the younger children group as much as in the older one especially when it is performed by an experienced surgeon.