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POD-04.01

Inguinal versus Single Incision Scrotal (SIS) Surgery for Palpable Inguinal Undescended Testes (UDT): A Single-institution Experience

Wehbi, Elias; Kanaroglou, Niki; Vargas, Isis; Figueroa, Victor; Lorenzo, Armando; Bagli, Darius; Koyle, Martin; Farhat, Walid
Hospital for Sick Children, University of Toronto, Toronto, ON, Canada

Introduction and Objectives: Although attempts have been made to broadly establish the role of SIS orchidopexies (SIS-O), data is lacking for patients with palpable, inguinal UDT. We sought to clarify its role in these patients.

Methods: We reviewed all orchidopexies at our centre in 2010-2011, excluding patients with high scrotal, retractile or non-palpable UDT, or those who had prior inguino-genital surgery. All inguinal UDT, regardless of location within the groin at time of surgery, were included. Testes size and location on examination at first follow-up, operative times, postoperative complication rates and subsequent need for re-operation were compared.

Results: A total of 566 orchidopexies were reviewed. After exclusion, 169 inguinal orchidopexies (I-O) and 100 SIS-O were evaluated with median age at surgery of 1.94 and 2.9 years respectively (p=0.07). There were 143 and 84 patients with median follow-up of 4.2 and 8.8 months in the I-O and SIS-O groups respectively (p<0.05). One SIS-O patient required conversion to an I-O at surgery. 19% of patients in each group had testes described as "small" by the examiner at first follow up (p=0.22). Testes were noted to be in a dependent scrotal location in 92% and 86% of patients in the I-O and SIS-O groups respectively (p=0.35). Of the remaining 14% in the SIS-O group that were not in a dependent scrotal location, none were deemed to require surgery, whereas 2 patients in the I-O group will undergo a redo-procedure for re-ascent. Operative times were shorter in the SIS-O group for both unilateral and bilateral procedures (32 mins vs. 55 mins and 45 mins vs. 83 mins; p<0.01 for unilateral and bilateral procedures respectively). Complication rates were similar and rare.

Conclusions: In our series, SIS-O has comparable success rates to the standard I-O, with shorter operative times. Based on this experience, we propose that this technique can be safely considered for all inguinal UDT, converting to an I-O in select cases.

POD-04.02

Traditional Laparoscopic Pyeloplasty (TL-P) versus Laparoendoscopic Single-site Pyeloplasty (LESS-P) in Children with Ureteropelvic Junction Obstruction (UPJO): A Single-institution Experience

Wehbi, Elias; Kanaroglou, Niki; Gleason, Joseph; Koyle, Martin; Bagli, Darius; Pippi Salle, Joao Luiz; Farhat, Walid
Hospital for Sick Children, University of Toronto, Toronto, ON, Canada

Introduction and Objectives: LESS-P is a rapidly emerging approach for UPJO with limited data in children. Herein we present our initial experience and compare it to TL-P.

Methods: We prospectively collected data on all patients with UPJO undergoing LESS-P from February 2011 to May 2012. Patients were age-matched 1:4 to a similar cohort who underwent TL-P using 3 trocars. LESS-P was performed by a single surgeon through transumbilical access. Patient and operative data, including overall cost associated with the hospital stay were collected.

Results: 7 patients had LESS-P with median follow up of 5 months (2.6-6.4). Patients were well-matched with the 28 in the TL-P group. Median age at surgery was 14 years (7.7-17.9) and 12.8 years (7.7-17.8) for LESS-P and TL-P groups, respectively (p=0.82). There was no significant difference in median operative times (LESS-P=233 minutes [155-250] and TL-P=210 minutes [116-373], p=0.82). No patients in the TL-P group required open conversion. One patient undergoing LESS-P required open conversion for failure to progress due to a small intra-renal pelvis. Average length of stay (LOS) in the LESS-P group was 2.2 days (1.53-2.61), compared to 2.8 days (1.48-7.6) in the TL-P group (p=0.26). Average cost for surgery and LOS in the TL-P group was $5,701CAD compared to $5,088CAD, in the LESS-P group, with a cost-savings of $613CAD ($p$=0.30). Of the 6 LESS-P patients with ultrasounds postoperatively, 5 have shown improvement in the degree of hydronephrosis. The patient with worsening hydronephrosis suffered a sports-related traumatic event and it is unclear whether this contributed to US findings. All TL-P patients had favourable US findings postoperatively.

Conclusion: LESS-P is comparable to TL-P and appears feasible in the pediatric population with similar cost and LOS. Obvious cosmetic advantages make it an attractive option for those who desire scarless surgery. Long-term outcome analyses are required to establish its role.

POD-04.03

Staged Buccal Mucosa Graft Urethroplasty for Salvage Hypospadias Repair: Challenging Cases with Modest Outcomes

Hamidizadeh, Reza; Afshar, Kourosh; MacNeily, Andrew E.
Department of Urologic Sciences, University of British Columbia, Vancouver, BC, Canada

Introduction and Objectives: Buccal mucosa graft urethroplasty is a well-accepted technique for salvage urethroplasty. However, there is a lack of outcome data in pediatric redo-hypospadias repairs. We reviewed outcomes of this procedure for salvage hypospadias repair in a pediatric population at our institution.

Methods: 23 patients undergoing 27 repairs over a 4-year period were retrospectively reviewed. Patient characteristics, outcomes, and complications were recorded.

Results: Mean age at first stage salvage was 7 years with a mean interval of 9 months between stages. Mean follow-up was 39 months. Meatal position at time of 1st redo-surgery was proximal (13 cases), mid (6), and distal (8). Indications for buccal grafting included failed 2-stage hypospadias repair (17), failed first-stage repair (6), and previously failed buccal graft (4). Grafts were harvested from the cheek (24 cases) and lower lip (3 cases). There were no donor site complications. At tubularization graft coverage was fashioned with dartos (15), tunica vaginalis (11), and SIS® in 1 case. Final meatal position was glandular in 12 patients, coronal in 7, and distal shaft in 2. Graft related complications were rare. Only 1 patient had graft failure and 2 required a second buccal graft at the time of urethroplasty. Patients with multiple grafts and smaller grafts were more likely to have graft related complications. The most common complications were fistula (50%) and stricture (15%). 25% of fistulas closed spontaneously, 25% required 1 repair, 25% required 2 or more repairs, and 25% are currently being observed. 50% of strictures were treated endoscopically and 50% required repeat buccal grafting.

Conclusions: Buccal mucosa graft urethroplasty is a well-tolerated and effective procedure with modest functional and cosmetic outcomes in pediatric redo-hypospadias repair. Complications and the need for repeat surgery are common and patients' families should be counseled accordingly.

POD-04.04

Urologic Outcomes After Primary Tethered Cord Release in Children with Occult Spinal Dysraphism: A 10 Year Single Institution Review

Kanaroglou, Niki[1]; Wehbi, Elias[1]; Matta, Reva[1]; Gleason, Joseph[1]; Drake, James[1]; Dave, Sumit[2]
[1]The Hospital for Sick Children, Toronto, ON, Canada; [2]London Health Sciences, London, ON, Canada

Introduction and Objectives: Urologic abnormalities (UA) are sometimes the only indication for neurosurgical intervention in occult spinal dysraphism (OSD), but the benefit of this is still unclear. We describe the urologic outcomes of tethered cord release (TCR) in children with OSD.

Methods: Patients aged 0-18 years with TCR for OSD at our centre were reviewed (2000-2010). We excluded those with open defects, lipomyelomeningocele, secondary tethering, trauma and tumours. MRI pathology, indications for TCR and presence of lumbar cutaneous stigmata (CS) were correlated with UA before and after TCR. UA included subjective urinary symptoms (eg frequency, urgency), incontinence, constipation, urinary infection and catheterization needs. Clinical history, renal ultrasonography and urodynamics (UDS) were assessed.

Results: 216 patients had TCR and 55 met inclusion criteria, with median follow up of 4.7 years (IQR 2.0-6.7). 58% (32/55) had no CS and their median age at surgery was higher than those with CS (9.3 vs. 2.4 years, $p<0.01$). The indication for TCR was UA alone in 46% (25/55) and primarily neurologic (NA) in 38% (21/55) with CS present in 24% (6/25) and 62% (13/21), respectively. 16% (9/55) had no clinical symptoms but an abnormal MRI ordered due to CS. Median age at TCR for the UA, NA and no-symptom groups were 9.29, 8.65 and 1.21 years, respectively (ANOVA $p<0.0001$). Urologic outcomes for all symptomatic patients are shown in Table 1. Only subjective urinary symptoms significantly improved. 21 patients with pre and postoperative ultrasounds had no improvement in hydronephrosis at last follow up. In 13 patients with pre- and postoperative UDS, only detrusor overactivity improved at median follow up of 15.4 months (10 vs. 3 patients, $p<0.01$).

Conclusions: Though UA is a common indication for TCR, in our series only subjective urinary symptoms and detrusor overactivity improved. These findings may help families establish realistic expectations about potential benefits of TCR for urologic findings in children with OSD (Table 1).

POD-04.05

Clinical Symptoms of Latex Allergy in Subpopulations of Spinal Dysraphism

Burwash-Brennan, Talia[1]; McNeely, P. Daniel[2]; Psooy, Karen J.[3]; MacLellan, Dawn L.[4]
[1]Dalhousie University, Halifax, NS, Canada; [2]Department of Neurosurgery, Dalhousie University, Halifax, NS, Canada; [3]Department of Surgery, University of Manitoba, Winnipeg, MB, Canada; [4]Department of Urology, Dalhousie University, Halifax, NS, Canada

Table 1. POD-04.04. Urologic outcomes preoperatively and at 3- and 12-month follow-up (N=46)

	Preoperative	Early follow-up	Late follow-up	*p* value*
Subjective urinary symptoms	30	26	16	<0.01
Urinary incontinence	26	22	18	>0.25
Constipation	19	15	17	>0.69
Urinary tract infection	9	7	4	>0.33
Clean intermittent catheterization	4	8	5	>0.42

*Chi-squared.

Introduction and Objectives: The prevalence of latex allergy (LA) in the general population is approximately 1%. In the 1990s, latex sensitization was >60% in patients with myelomeningocele (MMC). Multiple risk factors have been attributed to this increase including multiple, early childhood urologic and abdominal surgeries. Controversy exists over whether there is an increased risk of LA and need for latex precautions in other subgroups of spinal dysraphism such as myelocystocele (MCS), diastematomyelia (DM), meningocele (MC), lipomeningocele (LM), and sacral agenesis (SA). The primary objective of this study was to determine the incidence of LA symptoms in patients with spinal dysraphism.

Methods: The study was a retrospective chart review. All charts from patients previously or currently followed at our local pediatric spina bifida clinic between 1984 and 2012 were included. Reported LA symptoms were numbered and analyzed using Predictive Analytics Software 17.0.

Results: A total of 215 patients with spinal dysraphism were included in the review: MMC (n=128); LM (n=52); SA (n=12); MC (n=10); DM (n=9); and MCS (n=4). A total of 48 patients (48/215 or 22%) had at least one symptom of LA: 43 patients (43/128 or 33.5%) with MMC and 5 patients (5/87 or 5.74%) with occult spinal dysraphism (LM, SA, MC, DM, or MCS). The 5.74% (95% CI 2.48-12.76%) prevalence rate in patients with occult spinal dysraphism was found to be a statistically significant increase over the 1.63% in the general population (95% CI 1.01-2.64%) based on a two-tailed Fisher test ($p=0.0231$).

Conclusions: To the best of our knowledge, this if the first study to assess the prevalence of LA in multiple subpopulations of spinal dysraphism. According to our analysis, there is a significant increase in the prevalence of LA symptoms in patients with occult spinal dysraphism as compared to the general population. Therefore, primary prevention of LA may be warranted in this patient population.

POD-04.06

New Pharmacologic Strategies for Pediatric Patients with Refractory Overactive Bladder: Long-term Results of Two Prospective Open-label Studies

Nadeau, Geneviève[1]; Schröder, Annette[2]; Moore, Katherine[1]; Genois, Lucie[1]; Lamontagne, Pascale[1]; Hamel, Micheline[1]; Pellerin, Ève[1]; Bolduc, Stéphane[1]
[1]Université Laval, Québec, QC, Canada; [2]University of Toronto, Toronto, ON, Canada

Introduction and Objectives: Urologists use a stepped approach to address refractory overactive bladder, a challenging condition to manage, even more so in children. Before considering going up the ladder on invasiveness of therapies, we studied 2 new pharmacologic options for children with refractory idiopathic (OAB) and neurogenic (NDO) overactive bladder.

Methods: Two prospective open-label studies were conducted in parallel for pediatric patients with persistent incontinence and incomplete urodynamic response to an optimized dose of oxybutynin or tolterodine. In the first study, patients were treated with adjusted-dose regimens of solifenacin, while in the second cohort, we used simultaneously 2 anticholinergics (oxybutynin, tolterodine and/or solifenacin). The primary end-point was efficacy (continence) and the secondary end-points were tolerability and safety.

Results: For our first cohort, 244 patients (191 OAB, 53 NDO) were on solifenacin for a mean of 21 months. Mean age at initiation was 9 years. Urodynamic parameters and continence improved in all except one. Overall success rate was 91%, since 23 patients discontinued treatment for unsatisfactory clinical response or side effects. 72% of patients did not report any side effects.

In the second study, 56 patients (31 OAB, 25 NDO) were enrolled, with a mean duration on the combination regimen of 36 months. Again, urodynamic parameters and continence improved in all. Overall success rate was 82%, with 10 patients discontinuing treatment. No side effects were reported by 28 patients, 20 patients reported mild and 8 moderate side effects.

Conclusions: In children with OAB or NDO refractory to oxybutynin or tolterodine monotherapy, a regimen of solifenacin or a double anticholinergic strategy were found to be efficient approaches with high success rates, indifferently of patients' primary pathology. These alternatives could be considered as an extra step to be included in the management algorithm for intractable overactive bladder symptoms.