Unmoderated Posters
Pediatric Urology

UP-60
Are We Underestimating Bladder Capacity in Children Less than One Year of Age?

Costa, Daniel F. G.; Lavallée, Luke T.; Leonard, Michael; Guerra, Luis
Children's Hospital of Eastern Ontario, Ottawa, ON, Canada

Introduction and Objectives: Estimating bladder capacity is important in the evaluation of many urological disorders. For estimates to be of clinical value, precise reference ranges are needed. While accepted reference ranges have been established in adults and older children, none have been validated in infants. The formula [2* age (years) + 2] (ounces) is commonly utilized for children less than 2 years of age. It defines an average bladder capacity of 60 to 120 ml for children from birth to 12 months of age. Our anecdotal experience suggests this range is frequently an over-estimate. The purpose of this study was to determine the normal bladder capacity of infants.

Methods: We retrospectively reviewed the charts of children aged 0-12 months with cutaneous stigmata of spinal dysraphism referred to the urology clinic at CHEO to rule out occult spinal bifida between October 2004 and July 2011. Asymptomatic patients with normal investigations including abdominopelvic ultrasound and urodynamic testing were included in the analysis. Urodynamic studies were performed using the Laborie Medical Technologies UDS-600. Bladder filling occurred via a catheter at a rate of 10% of the expected total bladder capacity/min Bladder capacity was determined when the child voided around the catheter. We analyzed age, bladder capacity, detrusor pressure at capacity, bladder compliance and length of follow up.

Results: Forty-six percent (84/183) of patients met the study inclusion criteria. The mean age was 8.2 months (SD=3.1). Mean bladder capacity was 46.8 ml (SD=30.6) and the mean detrusor pressure at capacity was 9.0 cmH2O (SD=11.1). Mean compliance was 14.0 ml/cmH2O (SD=13.8). The average length of follow up was 41.5 months (SD=26.9).

Conclusions: Bladder capacity in infants with a mean age of 8.2 months was found to be 46.8 ml. This is less than half of the volume predicted by a commonly employed formula. A novel method of estimating bladder capacity in infants is required.

UP-61
Educational Tool for Community Physicians Performing Neonatal Circumcisions Part I: Review of Local Anesthesia, Contraindications, and Complications

DeMaria, Jorge; Kanters, David; Pemberton, Julia; Braga, Luis H.
McMaster University, Hamilton, ON, Canada

Introduction and Objectives: In Canada, neonatal circumcision is mostly performed by family physicians and pediatricians. Pediatric urologists are often consulted to treat complications and asked to redo surgery on these children due to poor cosmetic results. Published complication rates vary from 0.2-5%, demonstrating a need for all physicians performing this procedure to be aware of the contraindications, proper use of local anesthesia and methods for prevention and management of complications and poor cosmetic results. In order to improve the quality of care provided to patients undergoing neonatal circumcision, a workshop was held in 2010 at McMaster University, which resulted in development of an educational training video addressing these concerns.

Methods: In this video, the use of local anesthesia, contraindications to the procedure, as well as complications and prevention and management are discussed. A survey was performed 6 months after the workshop to ascertain impact of the training video on clinical practice.

Results: All 34 physicians who attended the workshop completed the survey. Respondents confirmed the video improved their ability to identify contraindications, use of local anesthesia as well as preventing and managing complications. All participants evaluated the workshop as either good or very good. Of the respondents, 79% felt more comfortable performing neonatal circumcision after the workshop and 82% reported that they would even change their clinical practice based on the knowledge gained.

Conclusions: This educational video on neonatal circumcision seems to positively impact the ability and the level of comfort of practitioners, which should theoretically reduce the number of complications and unsatisfactory results.

UP-62
Educational Tool for Community Physicians Performing Neonatal Circumcisions Part II: Surgical Techniques

DeMaria, Jorge; Kanters, David; Pemberton, Julia; Braga, Luis H.
McMaster University, Hamilton, ON, Canada

Introduction and Objectives: Neonatal circumcision is mostly performed in Canada by family physicians and pediatricians. A survey of family physicians and pediatricians performing neonatal circumcisions identified the absence of any formal training courses and lack of confidence in managing common complications. In response to that, an educational video focused on specific details of the neonatal circumcision surgical technique was created to facilitate practitioners' understanding of this procedure, with the aim to minimize the risk of complications and obtain better cosmetic results.

Methods: This educational tool was developed for a half-day multidisciplinary healthcare workshop held at McMaster University in 2010. The video demonstrates 2 neonatal circumcision techniques utilizing the Gomco clamp and the Plastibell device. A survey of workshop participants was conducted 6 months following the workshop to obtain feedback.

Results: All participants responded to the survey. The respondents confirmed that the video improved their surgical technique and that they were more comfortable in dealing with immediate complications. Overall, 88% rated the instructional video as either "good" or "very good", 91% would recommend the workshop, 79% will change their clinical practice because of it and 82% feel more comfortable performing neonatal circumcision after attending the course.

Conclusions: This educational video on neonatal circumcision seems to positively impact the ability and the level of comfort of practitioners, which should theoretically reduce the number of complications and unsatisfactory results.

UP-63

Laparoendoscopic Single-site Pyelolithotomy (LESS-P) in a Pediatric Patient

Wehbi, Elias; Kanaroglou, Niki; Farhat, Walid
Hospital for Sick Children, University of Toronto, Toronto, ON, Canada

Introduction and Objectives: Patients with a large stone burden are usually offered percutaneous nephrolithotomy (PCNL). It offers excellent stone clearance rates, but access and treatment can be challenging. LESS is an emerging approach with limited data. Here we offer a novel, endourologic approach for patients with significant nephrolithiasis who may otherwise be offered an open procedure. To our knowledge, a pyelolithotomy using LESS has not been described in the literature.

Methods: In the accompanying video, we present this novel surgical technique in a child with cystinuria, recurrent stones and previous complicated contralateral PCNL. Here we use a SILS-port access device (Covidien®) with articulating instruments (graspers, cauterizing L-hook) and articulating camera (Olympus®).

Results: A stent is placed and the bladder filled to distend the renal pelvis. In a mild flank position, 1.5 cm skin and 2.5 cm fascial incisions are made. Camera and instrument positions are optimal in the access port with the working instruments on the same horizontal plane and of different lengths, and the camera angled to limit collision. We favour a transmenteric approach when possible. Unlike LESS pyeloplasty, minimal dissection is needed to expose the pelvis for eventual mini-pyelotomy and stone extraction. Hitch stitches are used to stabilize the pelvis and lift mesenteric vessels for optimal exposure. Pyelotomy is made, stones are removed and the pelvis is re-approximated. We use a standard approach to facilitate knot-tying during LESS with a straight needle driver and articulating grasper. Stones are place in a bag and extracted.

Conclusions: LESS-P is a novel approach for the treatment of extensive nephrolithiasis and it supplements current surgical options. For experienced laparoscopists, it can be less morbid than traditional alternatives. It should be considered whenever PCNL is not feasible, scarless surgery is desired, or when pyeloplasty is also indicated.

UP-64

Near Total Excision for Giant Prostatic Utricle (PU) Through Anterior Sagittal Trans-rectal Approach (ASTRA)

Elsawy, Mohamed[1]; Pippi Salle, Joao Luiz[2]; Alsaid, Abdul Nasser[1]
[1]Ibn Sina Hospital, Shuwaikh, Kuwait; [2]Sick Kids Hospital, Toronto, ON, Canada

Objectives: To evaluate the effectiveness of near total excision of a giant PU using the ASTRA approach.

Material: A full term male (46XY) child presented at the age of 11 days with right acute scrotum, left undescended testis, bifid scrotum and proximal hypospadias. Perinatal torsion was suspected so scrotal exploration was done which revealed epididmo-orchitis with funiculitis. Abdominal ultrasound showed bilateral nephrocalcinosis, no hydronephrosis, no hydroureters, normal looking urinary bladder and a cystic area with sediments posterior to the urinary bladder measuring 15×21×54 mm (15 ml). MCUG showed ill-defined cystic swelling extending from posterior urethra behind the urinary bladder, anterior to the rectum and extending above the bladder dome. The urinary bladder & posterior urethra were normal. Barium enema was normal. Cystoscopy revealed normal bladder and posterior urethra. A giant PU filled with turbid urine and no cervix was seen originating from the veru. An 8 Fr Foley catheter was inserted through scope over a guide wire. Through (ASTRA) the posterior wall of the PU was identified and dissected circumferentially. Both ejaculatory ducts were located to the dome of the PU. Sub-total excision of the PU was performed, leaving intact its dome and ejaculatory ducts which were anastomosed to the neck of the PU. The bladder was drained with 8 Fr Foley catheter for 10 days.

Results: Patient had an uneventful postoperative course. Follow up was regularly done with US every 6 months, and there was no recurrence of epididmo-orchities or UTI. In the last US at the age of 4 years utricle cyst was measuring 15×14×12 mm (1.3 ml volume) with clear fluid. Patient is continent to urine and stool.

Conclusion: Sub-total excision of giant PU through ASTRA approach provides a great exposure for an effective and safe removal of symptomatic and large utricles. In our case it allowed to spare ejaculatory ducts.

UP-65

Pediatric Procedures in Urology Residency Training: Are We Meeting the Royal College Objectives of Training?

Gustafson, Paul[1]; MacNeily, Andrew E.[1]; Mikhail, David[2]
[1]Urology, University of British Columbia, Vancouver, BC, Canada; [2]University of Calgary, Calgary, AB, Canada

Objective: To determine if the exposure to pediatric urologic procedures by graduates of Canadian urological programs is congruent with the objectives of training (OTR) put forward by the Royal College of Physicians and Surgeons of Canada (RCPSC).

Methods: The Canadian T-Res® database for pediatric surgical procedures logged from 2003-2009 inclusive was interrogated. The number of cases logged for each of the "A," "B" and "C" lists of procedures (least complex to most complex) as outlined in the RCPSC Objectives of Training in Urology were recorded for the 6 participating programs across the country.

Results: Of the "A" list procedures, Canadian urology residents (PGY 1-5) from the 6 programs investigated participated in an annual average of 115 circumcisions, 66 hernia/hydrocele repairs, 130 orchidopexies, 11 meatoplasties, 102 hypospadias repairs, 6 heminephrectomies, 32 pyleoplasties, 40 ureteral reimplants, 13 augmentation cystoplasties, 12 continent diversions, and 6 endourological procedures for urolithiasis during the years in question. Of the "B" list procedures, residents from the participating programs performed an annual average of 8 vesicostomies, 6 renal transplants and 4 transurethral resections of posterior urethral valves. Insufficient data were available from the "C" list procedures.

Conclusions: The number of cases that need to be performed in order to achieve an adequate level of competence to carry out a given operation independently is unknown. However, Canadian urology residents on average would seem to be exposed to an adequate number of procedures to become competent in some, but not all of the "A" and "B" procedures including circumcision, hernia/hydrocele repair, orchidopexy, and distal hypospadias repair. Ongoing assessment of surgical experience as it relates to the objectives of training in pediatric urology is required.