Endourological Versus Open Cystolithotomy for Bladder Stones

In the United States bladder calculi are most often encountered in children who have undergone enterocystoplasty while worldwide pediatric bladder stones are endemic. Experience gained by treating endemic bladder stones can enhance the care of all children. Al-Marhoon et al (page 2684) from Mansoura, Egypt report on children treated with open cystolithotomy (53 patients, group 1) or endoscopically either through transurethral or percutaneous suprapubic access (54, group 2). Percutaneous access was obtained under fluoroscopic guidance dilating the tract to 30Fr and using a 26Fr nephroscope. Endoscopic fragmentation of stones was undertaken with the Swiss lithoclast or laser fiber. Stones larger than 1 cm were broken to smaller segments allowing forceps extraction. A 20Fr suprapubic catheter was secured postoperatively. Stone-free rate was 100% at 1-year followup regardless of the technique. There was no difference in operative time between the 2 groups. Complications occurred more often in patients treated percutaneously, and included persistent leakage in 1 and intraperitoneal bladder perforation in 2 which required exploration.

Although the authors recognize that endourological management results in shortened hospital stay and perhaps improved cosmesis, the postoperative complication rate was higher. Recommendations to limit complications include perform the percutaneous puncture with the bladder near capacity, avoid over distention during fragmentation, limit percutaneous procedures to stones smaller than 2 cm, remove all stone fragments, maintain urethral catheterization for longer than 24 hours after difficult percutaneous access and closely follow patients the first few weeks after intervention.

Surgical Treatment of Varicocele

Laparoscopy has quickly become the preferred approach for many intra-abdominal procedures, and the treatment of a varicocele is no exception. Multiple options exist for the treatment of varicocele indicating that no procedure is clearly superior. The Palomo technique (retroperitoneal mass ligation of the testicular artery, veins and lymphatics) has been widely used and is generally considered successful. The principle objective of this technique easily translates into a laparoscopic approach. Barroso et al (page 2724) from Salvador, Brazil reviewed the literature on the results of open and laparoscopic Palomo procedures and identified 47 studies in children and adolescents younger than 18 years. The articles were first grouped into the classic and modified (testicular artery is preserved) Palomo techniques and then subclassified into open and laparoscopic approaches. Most studies were retrospective and nonrandomized, limiting their usefulness to reach a definitive conclusion. In addition, the primary reason for intervention and the outcome of treatment on fertility were rarely addressed. However, despite those limitations, the authors identified consistent trends.

Operative complications were not reported to be a significant issue between the laparoscopic and open approaches. The authors identified 1,344 procedures performed by the classic laparoscopic approach and 496 by the open approach. Recurrence averaged 2.9% with the open and 4.4% with the laparoscopic approach, which was not statistically significant. Hydrocele occurred with similar frequency with the open (9.7%) and laparoscopic (6.9%) approaches. The rate of testicular catch-up growth varied widely but was similar in both groups and reported to occur in 37% to 100% of cases. When comparing the modified Palomo to the classic technique, there was no statistical difference in operative time, varicocele recurrence (4.2% modified and 3.4% classic), hydrocele formation (3.2% modified and 7.7% classic) or testicular catch-up growth. Testicular catch-up growth was reported with the widest variability in all groups, and the authors question whether this is due to recuperation of testicular function or merely enlargement due to testicular edema secondary to enlargement from interruption of lymphatic drainage.

Long-Term Outcomes of the Neobladder

Enterocystoplasty is the procedure of choice for bladder rehabilitation when medical therapy including intermittent catheterization and pharmacological management fails. The importance of maintaining the native bladder in reconstruction is well appreciated. However, rare pediatric cases exist in which the native bladder is unavailable or unusable. De-
Foer et al (page 2689) from Cincinnati, Ohio and Denver, Colorado combine their operative experience and present the results of 26 pediatric patients with a neobladder who have been followed an average of 9 years. Various reconstructive techniques were used to create the neobladder, including the stomach, the majority of which was a composite with small bowel, in 14; ileum in 11; and a colon composite in 5. Catheterizable channels were fashioned from the appendix in 12 cases and reconfigured intestine in 12, and in 2 the native urethra was incorporated into the neobladder.

Stomal complications occurred in 5 patients (19%), primarily due to difficulty with catheterization, febrile urinary infections in 8 (31%) and bladder calculi in 8 (31%), none of which contained a gastric segment. Metabolic complications occurred in 6 patients (23%) resulting in metabolic acidosis requiring bicarbonate therapy. The hematuria dysuria syndrome, often reported to occur when using gastric tissue, was noted in only 1 patient who at the time was anuric and awaiting renal transplantation. Renal function has remained stable throughout followup. Reconstruction was performed before transplantation in 5 patients in end stage renal failure. All patients catheterize intermittently every 3 to 4 hours and are continent of urine. Functional bladder capacity averaged 400 ml. No malignancies have occurred during this follow-up period with cystoscopic surveillance beginning at 5 years. As with enterocystoplasty, reservoir perforation is a serious complication with life threatening consequences. Perforations were identified in 4 patients, resulting in sepsis and death of 1 patient. The authors noted fewer complications with gastric tissue than documented in the literature which may be due to their selection of a gastric patch that avoids the antrum of the stomach, decreasing the potential for hypergastrinemia and acid hypersecretion.

The authors conclude that successful long-term results of neobladder creation can be achieved in children. However, a 9-year “long-term” followup is relative in the pediatric population with hopefully many more years to come. Clearly these children require lifelong assessment. It will be interesting to revisit this population in another decade.

Outcomes of Slings With Versus Without Enterocystoplasty

Surgically treating neurogenic incontinence is challenging and assessing operative outcome is just as problematic. Outcome parameters are inconsistently defined, lack objective evidence and primarily are based on subjective assessment. A commonly held dogma is that successful bladder neck reconstruction requires simultaneous enterocystoplasty. Snodgrass et al (page 2709) from Dallas, Texas describe their outcome of achieving continence when using a bladder neck sling and catheterizable bladder channel without enterocystoplasty in 23 patients with neurogenic bladder dysfunction (group 1) compared to the outcome of a bladder neck sling and enterocystoplasty in 18 patients (group 2). Outcome was based on physician defined continence, patient and family defined continence, catheterization interval, use of antimuscarinic medication and a health related quality of life questionnaire (HRQOL). Continence was defined as dry—0 pads a day while catheterizing every 3 hours, improved—less than 2 pads a day while catheterizing every 3 hours and wet. An HRQOL questionnaire was administered along with documentation of intermittent catheterization and antimuscarinic use. All patients were evaluated at least 1 year from the date of surgery.

Of the group 1 patients who underwent a sling only procedure 21 underwent a 360 degree fascial bladder neck wrap and 2 underwent a Burch suspension vs a 360 degree fascial bladder neck wrap in 10, a “U” fascial suspension in 5 and a Burch suspension in 3 group 2 patients. The upper urinary tract in both groups remained stable without hydronephrosis, no patient was reported to have vesioureteral reflux and no one is awaiting further surgery. Urinary continence as defined by patients and surgeons was similar in both groups (82% group 1 and 83% group 2) defined as dry or improved. Catheterization interval or the need for antimuscarinic medication was insignificant. The HRQOL satisfaction survey was similar for both groups. The authors note the difficulty in assessing postoperative continence and the need for creating a validated questionnaire to determine how health related quality of life factors truly impact personal development. They recognize limitations in their review, and note that overall patient satisfaction in group 1 may be due in part to the catheterizable channel and not necessarily the continence operation. This study reinforces the inherent difficulties in assessing continence outcome in the neurogenic population.