

Editorial Comment

The authors report on the long-term results of patients treated with sacral neuromodulation for lower urinary tract voiding dysfunction. The authors noted that the greatest success of this therapeutic modality was in patients with chronic urinary retention. They had a less degree of efficacy in patients treated with urgency and frequency and minimal success in patients with urinary urge incontinence.

This is an excellent paper reporting on the long-term results on sacral neuromodulation. It makes excellent reading for those physicians interested in the application of this technology in their practice. It highlights the efficacy of this therapy in the voiding dysfunction of urinary retention and the disappointing results when applied for pelvic pain or urinary urge incontinence. The discussion section is excellent especially in its efficient review of the literature available of the long-term results for chronic sacral neuromodulation. It is quite thought provoking that the technology had its highest success rates in a potentially idiopathic disease process.

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PEDIATRIC UROLOGY

Diagnosis of pediatric urolithiasis: role of ultrasound and computerized tomography

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Purpose: Pediatric urolithiasis is believed to be uncommon, and may present without the classic symptoms of renal colic. The objectives of this study were to describe the presenting features and radiographic evaluation of pediatric urolithiasis, and to determine the accuracy of ultrasound and unenhanced computerized tomography (CT) in detecting urolithiasis.

Materials and Methods: We retrospectively reviewed the charts of children 0 to 18 years old with urolithiasis. Data collected included age, sex, race, presenting symptoms, radiographic studies performed during initial evaluation, calculus location and family history of urolithiasis.

Results: A total of 75 patients had complete data for analysis. Of these patients 54 (72%) had urolithiasis symptoms (flank pain, gross hematuria or both). Patients with urolithiasis symptoms were older at diagnosis (median age 11.9 years vs 1.0 years, $p < 0.001$) and were more likely to have a family history of urolithiasis (54% vs 14%, $p = 0.002$). The 39 CTs performed were accurate in detecting calculi in children with urolithiasis symptoms (96% to 100%) and in those without symptoms (100%). The 36 ultrasounds performed had more variable accuracy in children with urolithiasis symptoms (33% to 100%) vs those without symptoms (89%). Ultrasound failed to detect urolithiasis in 41% of the patients with urolithiasis symptoms, compared to 5% with CT. CT was also highly accurate regardless of calculus location (89% to 100%), whereas ultrasound was again more variable (kidney 90%, kidney and ureter 75%, ureter alone 38%).

Conclusions: Ultrasound failed to detect calculi in 41% of the children with urolithiasis symptoms, whereas CT was highly accurate in all situations. Unenhanced CT should be performed in all children with persistent urolithiasis symptoms and nondiagnostic ultrasound.

Editorial Comment

The authors reviewed their experience with diagnosing urolithiasis in children. In this series, 75 patients were diagnosed with stones over a period of about 18 months. 54 patients had symptoms including 48 with pain and the others, hematuria. The most interesting group for comparing diagnostic modalities was the symptomatic patients. Of the 54 with symptoms, ultrasound made the diagnosis in 10/17 patients (59%) and CT made the diagnosis in 36/37 (97%). Ultrasound was more accurate in patients with renal stones alone (90%) and patients with renal and ureteral stones (75%), but only diagnosed 38% of those with ureteral stones. In contrast, CT was accurate in 89% of kidney stones alone, but in 100% of those cases of ureteral stones (including 6 with both renal and ureteral stones).

Non-contrast CT has largely replaced IVP (and ultrasound) in the evaluation of adults with symptoms consistent with urinary tract calculi. In contrast, most practitioners workup children with symptoms suggestive of calculi using ultrasound. This is primarily because of fears of radiation exposure in children. This series demonstrates that the diagnostic accuracy of ultrasound is unfortunately limited. Of course, in contrast to CT scans, ultrasound is much more operator dependent. It is unclear from this retrospective study where the ultrasounds were performed. Would truly expert pediatric sonographers have done better? If they did not see a ureteral stone, would they have seen enough hydronephrosis to suggest some form of ureteral obstruction that required further evaluation? This is unknown. However, even if so, when a patient is symptomatic in a local emergency department in a community hospital, it is impractical to have an expert pediatric ultrasonographer involved.

Considering that radiation exposure in children is a real issue (and non-contrast CT scans with thin cuts from the top of the kidneys all the way through the pelvis do expose children to a fair amount of radiation), it is still reasonable to obtain an ultrasound initially in a child with a probable calculus by history. However, this study teaches us that, if the ultrasound is negative and the symptoms are suggestive, a non-contrast CT is appropriate.

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Balanitis xerotica obliterans in boys

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Purpose: Balanitis xerotica obliterans (BXO) is a chronic dermatitis of unknown etiology most often involving the glans and prepuce but sometimes extending into the urethra. We report our 10-year experience with BXO in pediatric patients.

Materials and Methods: Our pathology database was queried for all tissue diagnoses of BXO from 1992 to 2002. Available charts were reviewed and patient presentation, clinical and referral history, operative procedure(s) and postoperative course were recorded.

Results: A total of 41 patients had a tissue confirmed diagnosis of BXO. Median patient age was 10.6 years. Of the patients 85% were 8 to 13 years old and all had referrals available for review. The most common referral diagnoses were phimosis (52%), balanitis (13%) and buried penis (10%). No patient had the diagnosis of BXO at referral. Of the patients 19 (46%) underwent curative circumcision or redo circumcision and had no

recurrence at a mean followup of 12.5 months (range 1 to 57). A total of 11 patients (27%) had BXO involvement of the meatus and underwent circumcision combined with meatotomy or meatoplasty. Nine patients (22%) required extensive plastic operation(s) of the penis, including buccal mucosa grafts in 2.

Conclusions: The incidence of BXO in pediatric patients may be higher than previously reported, with the diagnosis rarely made by pediatricians. Our study demonstrates that older patients, those with BXO involvement of the meatus and those with a history of surgery for BXO tend to have a more severe and morbid clinical course.

Editorial Comment

The authors describe a retrospective analysis of their institutional experience with this disease process over 10 years. 41 cases were found and analyzed. The majority was referred for foreskin problems; none were diagnosed with BXO at the time of referral. Of the 41 patients, 23 (56%) had glans involvement and 15 (37%) had meatal involvement. Circumcision was curative (at least in the short-term) for most of the minor cases. However, when BXO involved the meatus, the disease process was much more serious and required more extensive repair.

BXO is largely underdiagnosed. The diagnosis can only be made histologically and many institutions do not require histological examine after routine circumcision. As such, many more cases may be occurring without being recognized. In our experience, BXO was found in many cases of meatal stenosis in patients with previous hypospadias surgery. Again, in most instances, the diagnosis was made only when biopsies of the area were sent for histological analysis. The etiology of the problem in these cases is unclear. Though most were operated on using older techniques, it is uncertain whether we will continue to see the problem in patients with current repairs who are followed for longer periods of time. In any event, when discovered, it appears that the entire involved area must be removed and the tissue replaced, either with uninvolved flaps or grafts. Indeed in the present series several patients required buccal mucosal grafts. Based on the seriousness of the problem and the effect of the diagnosis on prognosis, biopsy is recommended in all questionable cases.

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