

Results: Nine randomized trials including 700 patients with CIS compared BCG to either mitomycin C (MMC), epirubicin, adriamycin, or sequential MMC/adriamycin. Of 298 patients on BCG 203 (68.1%) had a complete response compared with 158 of 307 patients on chemotherapy (51.5%), a reduction of 47% in the odds of nonresponse on BCG (OR 0.53, $p = 0.0002$). Based on a median followup of 3.6 years, 161 of 345 patients on BCG (46.7%) had no evidence of disease compared with 93 of 355 patients on chemotherapy (26.2%), a reduction of 59% in the odds of treatment failure on BCG (OR 0.41, $p < 0.0001$). Although the long-term benefit of BCG was smaller in trials with MMC, BCG was superior to MMC in trials with maintenance BCG (OR 0.57, $p = 0.04$). The reduction of 26% in the risk of progression on BCG ($p = 0.20$) is consistent with the reduction of 27% ($p = 0.001$) previously reported in a larger superficial bladder cancer meta-analysis.

Conclusions: Intravesical BCG significantly reduces the risk of short and long-term treatment failure compared with intravesical chemotherapy. Therefore, it is considered to be the intravesical agent of choice in the treatment of CIS.

Editorial Comment

Sylvester and coworkers from the EORTC present another extraordinary paper on patients outcomes with superficial bladder cancer. This metaanalytic calculation of all published data on intravesical treatment of CIS reveals that chemotherapy is clearly inferior to immunotherapy with BCG with regard to recurrence, and, more importantly, with regard to progression.

Clearly, these high-risk patients deserve maintenance BCG therapy. If recurrence, or worse, progression occurs while under maintenance therapy, immediate radical cystectomy is justified.

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FEMALE UROLOGY

What is the value of cystoscopy with hydrodistension for interstitial cystitis?

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Objectives: To determine the utility of cystoscopy with hydrodistension for the diagnosis and therapy of interstitial cystitis. Cystoscopy with hydrodistension is the most commonly performed diagnostic test and procedure in patients with interstitial cystitis.

Methods: Eighty-four consecutive patients with interstitial cystitis (68 women and 16 men) were studied retrospectively. The patients underwent history and physical examination, urinalysis, and urine culture and filled in a voiding diary and pain urgency frequency questionnaire. Cystoscopy with hydrodistension was performed in 47 patients. Patients who had and had not undergone hydrodistension were compared. Patients who underwent hydrodistension were characterized and followed up for response.

Results: The mean patient age was 41 years, mean daily voided volume was 98 mL, mean number of nocturnal episodes was 3, and pain urgency frequency score was 21. Comparing patients undergoing versus not undergoing hydrodistension, pain was reported in 61% versus 25% ($P = 0.03$), vaginal pain in 62% versus 32%

($P = 0.02$), and dyspareunia or ejaculatory pain in 67% versus 29% ($P < 0.01$), respectively. All other parameters were statistically similar. Of the patients undergoing hydrodistension, 43 had follow-up and 24 (56%) reported improvement (mean duration of 2 months). Of the patients with and without improvement, no difference was found in mean age (40 versus 46 years, $P = 0.20$), duration of symptoms (7 versus 7 years, $P = 0.92$), anesthetic capacity (722 versus 721 mL, $P = 0.99$), or glomerulation grade ($P = 0.61$), respectively.

Conclusions: Cystoscopy with hydrodistension provided little useful information above and beyond the history and physical examination findings. As therapy, 56% of patients reported improvement, but the duration was short lived.

Editorial Comment

The authors describe their contemporary experience with cystoscopy and hydrodistention. They utilize a technique of filling for 2 minutes at 100 cm pressure and then draining and repeating the process. Their bleak long term results, in addition to the companion review in this issue on SNS, highlight the challenge of this disease. Many advocate the use of normal saline as the instillate when hydro distending the bladder to minimize potential complication if there should be a bladder disruption.

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Sacral neuromodulation: long-term experience of one center

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Objectives: To perform a retrospective analysis of the long-term results of our experience with neuromodulation. Our center has been involved in the early studies leading to approval of the NeuroStim system of neuromodulation for the treatment of patients presenting with refractory lower urinary symptoms of urgency/frequency with or without incontinence and chronic urinary retention.

Methods: A total of 52 patients have undergone implantation at our center since 1990 using very rigid criteria, including temporary percutaneous nerve evaluation for up to 7 days and a requirement of 50% improvement before consideration for implantation. Patients were followed up closely and a telephone questionnaire was conducted for those patients not seen in the previous 6 months. Of the 52 patients, 11 were not available for evaluation. Of the 41 remaining patients, 22 had urgency/frequency syndrome, 6 had urgency incontinence, 9 had urinary retention, and 4 had interstitial cystitis with intractable pelvic pain.

Results: Of the 41 patients, 5 required explantation. These 5 patients were offered reimplantation but declined. Of the 22 patients in the urgency/frequency group, 10 (45%) had persistent improvement. In the urgency incontinence group, 3 of the 6 patients required explantation, and 1 (17%) reported improvement in the frequency of incontinence episodes. Of the 9 patients in the chronic urinary retention group, 7 (78%) had improvement.

Conclusions: The long-term (up to 13 years) results of neuromodulation in patients presenting with urgency/frequency with and without urge incontinence and urinary retention were reviewed. The long-term results in the first two groups were not maintained over time. The patients with chronic urinary retention, although a small sample, fared better.

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.