

STONE DISEASE

Effects of specific alpha-1A/1D blocker on lower urinary tract symptoms due to double-J stent: a prospectively randomized study

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The aim of our study was to evaluate the effect of tamsulosin in improving symptoms in patients with indwelling double-J ureteral stents. This prospective study lasted from April 2006 to March 2008. All the patients with symptomatic lower ureteral stones with < 15 mm diameter were enrolled, and were prospectively randomized (random numbers table) into two groups. A total of 154 patients, with insertion of a double-J ureteral stent after ureteroscopic stone removal. In group 1, 75 patients were enrolled and received placebo for 2 weeks. Group 2 included 79 patients who received 0.4 mg of tamsulosin, once daily for 2 weeks. All patients completed the validated ureteral stent symptom questionnaire (USSQ) and quality of life of international prostate symptom scale (IPSS) for evaluating the symptoms of double-J stents and quality of life after double-J stent insertion and removal, respectively. The analysis of the questionnaire at W1 revealed a significant difference in the main score index of urinary symptoms, body pain and general health between groups 1 and 2. When comparing W1 evaluation with that of W4 after double-J removal, both groups showed significant worsening of urinary symptoms, body pain, general health and work performance, except sexual performance. The mean score of quality of life in IPSS was 4.21 in group 1 and 1.6 in group 2. Tamsulosin can improve a subset of stent-related urinary symptoms and quality of life effectively and may be applied in routine clinical practice.

Editorial Comment

This is a well designed, implemented and analyzed study that lends support to prior studies suggesting the efficacy of alpha-blockers in the management of ureteral stent discomfort. Patients receiving tamsulosin had less urinary symptoms and body pain and better general health and quality of life than those on placebo. Remarkably, only 3% of patients in the tamsulosin group required narcotics, compared to 33% in the placebo group. Urinary symptoms were less in both men and women treated with tamsulosin irrespective of age. Improvement in body pain was noted primarily in patients > 50 years of age.

Alpha-blockers may alleviate stent discomfort by decreasing ureteral spasm, decreasing trigone sensitivity, decreasing voiding pressures or decreasing resting ureteral pressure and peristalsis.

Though previous studies have suggested return to normal activities at two weeks following ureteroscopy, it is possible that a small subset of patients may not have reached "baseline" by the 4-week time point following ureteroscopy. Administering this questionnaire at 2-3 months may have been a more reliable baseline, albeit logistically more challenging.

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Ureteral stone location at emergency room presentation with colic

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Purpose: It is thought that the 3 narrowest points of the ureter are the ureteropelvic junction, the point where the ureter crosses anterior to the iliac vessels and the ureterovesical junction. Textbooks describe these 3 sites as the most likely places for ureteral stones to lodge. We defined the stone position in the ureter when patients first present to the emergency department with colic.

Materials and Methods: We retrospectively reviewed the records of 94 consecutive patients who presented to the emergency department with a chief complaint of colic and computerized tomography showing a single unilateral ureteral calculus. Axial, coronal and 3-dimensional reformatted computerized tomography scans were evaluated, and stone position and size (maximal axial and coronal diameters) were recorded, as were the position of the ureteropelvic junction, the iliac vessels (where the ureter crosses anterior to the iliac vessels) and the ureterovesical junction. Patients with a history of nephrolithiasis, shock wave lithotripsy, ureteroscopy or percutaneous nephrolithotripsy were excluded from study. Statistical analysis was performed using Student's t test and Pearson's correlation coefficient.

Results: At the time of emergency department presentation for colic ureteral stone position was the ureteropelvic junction in 10.6% cases, between the ureteropelvic junction and the iliac vessels in 23.4%, where the ureter crosses anterior to the iliac vessels in 1.1%, between the iliac vessels and the ureterovesical junction in 4.3% and at the ureterovesical junction in 60.6%. Proximal calculi had a greater axial diameter than distal calculi (mean 6.1 vs. 4.0 mm) and a greater coronal diameter than distal calculi (6.8 vs. 4.1 mm, each $p < 0.001$). Axial and coronal diameters moderately correlated with stone position ($r = -0.47$ and -0.55 , respectively, each $p < 0.001$).

Conclusions: Proximal ureteral stones were larger in axial and coronal diameter than distal ureteral stones. At emergency department presentation for colic most stones were at the ureterovesical junction and in the proximal ureter between the ureteropelvic junction and the iliac vessels. A few stones were at the ureteropelvic junction and only 1 lodged at the level where the ureter crosses anterior to the iliac vessels, despite the literature stating that these locations are 2 of the 3 most likely places for stones to become lodged.

Editorial Comment

The authors have identified the most common stone locations associated with significant renal colic - the ureterovesical junction and the proximal ureter. Whether this re-defines the narrowest points in the ureter remains to be determined. The authors do not report the duration of symptoms prior to presenting to the emergency room or the subsequent successful migration of the stone or need for intervention. An alternative way to define the tightest spots would be to evaluate the site of stone impaction after a trial of conservative therapy - in other words, where do stones get stuck? One could evaluate the points of resistance commonly encountered during retrograde ureteroscopy. One could obtain ureteral dimensions from contrast-enhanced images. Interestingly, the authors report no difference in ureteral length between men and women - this may be another misconception that the authors could investigate further. The authors note 2 important implications for imaging in the face of renal colic - evaluation of plain radiography should focus on the ureterovesical junction and upper ureter, while ultrasonography should be performed with a full bladder to better visualize the ureterovesical junction.

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