

STONE DISEASE

Impact of real-time visualization of cystoscopy findings on procedural pain in female patients

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Background and Purpose: We have previously shown that men tolerate office flexible cystoscopy better when they simultaneously view the monitor during their procedure. We sought to demonstrate similar effects of distraction on women undergoing rigid office cystoscopy.

Patients and Methods: 100 consecutive women underwent diagnostic office based rigid cystoscopy. All patients consented to inclusion in the study. Patients were randomized to two groups. The study group consisted of patients who were allowed to view their procedure real-time on the video monitor. The control group patients had the video screen positioned such that only the surgeon could visualize the procedure. Patients underwent rigid cystoscopy using a 17F cystoscope introduced with an obturator. Water-soluble lubricant was liberally applied to all cystoscopes immediately before the procedure. Patients who needed additional procedures, including cystodiathermy or stent extraction, were excluded from the study groups. Postprocedure, patients were asked to record their experience on a 100-mm visual analog pain scale as soon as the surgeon left the room.

Results: Women who were able to view their cystoscopy findings simultaneously during the procedure did not demonstrate lower pain scores compared with those who did not view the screen (median pain score of 19 v 10; $P = 0.16$, based on Wilcoxon rank sum test).

Conclusions: In contrast to the decreased pain scores demonstrated when tested in men, use of distraction by allowing patients to simultaneously view their procedure may not affect procedure tolerance for women undergoing office-based rigid cystoscopy.

Editorial Comment

The authors present a well-designed and conducted randomized prospective clinical trial to evaluate the impact of video-endoscopic visualization on procedural pain during rigid cystoscopy in females. They do not report if a power analysis was conducted - it is possible that a Type 2 error may be encountered due to small sample size.

The authors have previously reported decreased pain scores in men undergoing flexible cystoscopy when the patients are allowed to visualize the cystoscopic findings on the video tower. As the authors note, the lack of a difference in pain scores in women may be related to the use of rigid cystoscope or positioning in a lithotomy as opposed to supine position.

It would be helpful to document at what point during the procedure did the women report the most discomfort - if during insertion, this would support the hypothesis that the use of an obturator during blind insertion of the cystoscope eliminates the value of visualization during the procedure. Alternatively, if discomfort was reported during filling with irrigant, was this more common in women with voiding dysfunction and did it correlate with the volume of irrigant instilled or patient's bladder capacity?

It would be important to exclude patients who have previously undergone cystoscopy - as pre-procedural anxiety has been reported to correlate with procedural pain. It would be interesting to repeat the study in men using a television show as a sham control - is it distraction that diminishes pain, or is it "visual feedback" that facilitates relaxation as the scope is passed through the bulbar, membranous and prostatic urethra?

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Retrograde, antegrade, and laparoscopic approaches for the management of large, proximal ureteral stones: a randomized clinical trial

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Background and Purpose: Multiple procedures have been introduced for the management of urinary stones in the upper ureter. In this randomized clinical trial, we compared three surgical options in this regard.

Patients and Methods: From September 2004 to May 2006, we enrolled in the study 150 patients with upper ureteral stones who were referred to our center. We included patients with a stone size ≥ 1.5 cm in the greatest diameter. Using the random table, patients were divided into three 50-patient groups by treatment: Group A, retrograde ureteroscopic lithotripsy using a semirigid ureteroscope; group B, transperitoneal laparoscopic ureterolithotomy; and group C, percutaneous nephrolithotripsy. All procedures were performed in a training program.

Results: The stone-free rates for patients in groups A, B, and C, at discharge and 3 weeks later, were 56%, 88% and 64% and 76%, 90% and 86%, respectively. Conversion to open surgery and repeated laparoscopy was necessary for two and one patients in group B. Urinary leakage continued more than 3 days in eight (16%) and nine (18%) patients in groups B and C after operation, respectively ($P = 0.7$). **Conclusions:** Although the success rate of ureteroscopy was not significantly lower than the two other options, the complications seen with this technique were negligible. Consequently, the procedure of choice for large proximal ureteral stones seems to depend on surgeon expertise and availability of equipment.

Editorial Comment

The authors are to be commended for conducting a randomized prospective study of a difficult clinical situation. Indeed, it is note-worthy that they were able to recruit 150 patients with > 1.5 cm proximal ureteral calculi in less than 2 years. Similarly, it is a challenge to consent patients to be randomized to procedures that vary greatly in the degree of invasiveness and risk.

The authors concluded that ureteroscopy is a reasonable first alternative as the severity of potential complications is lower than the other procedures tested. Indeed, patients would tend to agree with this assessment, and if given the alternative of shockwave lithotripsy (not tested in the current study due to concerns of efficacy) would often select SWL over more effective procedures.

The study is somewhat limited by the choice of technology. The authors did not utilize flexible endoscopy - either flexible ureteroscopy as an adjunct to the ureteroscopic approach, or flexible cystoscopy/ureteroscopy as an adjunct to the antegrade percutaneous approach. One would anticipate that these modalities would significantly improve the initial post-procedural stone-free rates. Pneumatic lithotripsy has been demonstrated to lead to greater stone migration and larger stone fragments. Intraoperative ultrasound may have facilitated identification of the "missed stone" in the laparoscopic group.

The authors did not stratify results based on the severity of hydronephrosis - it is our practice to consider the antegrade approach if we anticipate that the severity of hydronephrosis will preclude manipulation of the flexible ureteroscope for stone retrieval. The authors report a high secondary procedure rate in all groups in this study (10-20%); underscoring the challenge of the large ureteral calculus. Most importantly, it tempers the enthusiasm of prior reports of laparoscopic ureterolithotomy.

In summary, the addition of a flexible ureteroscope and decreased reliance on pneumatic lithotripsy may have placed ureteroscopy more solidly as the front-runner for large proximal ureteral stones.

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