

STONE DISEASE

Self-Retaining Ureteral Stents: Analysis of Factors Responsible For Patients' Discomfort

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Purpose: To determine factors affecting patients' discomfort during the period self-retaining ureteral stents are in place.

Patients and Methods: Between April 2001 and May 2003, 58 male and 42 female patients underwent temporary double-pigtail stenting. The indications were endopyelotomy in 39 patients, ureteroscopy in 32, laparoscopic pyeloplasty in 18, and endoureterotomy in 11. The stents were silicone in 56 patients and Percuflex in 44. The median stenting period was 8 weeks (range 4-16 weeks). Patient discomfort was evaluated by a questionnaire conducted by the physician before stent removal. Tested variables were patients' sex, side of the stent, urine culture, stent material, stent length and diameter, and stenting duration. The site of the upper coil (renal pelvis or calix), the site of the lower coil (in the same side or crossing the midline), and the shape of the lower coil (complete circle or not) were also tested. Univariate and multivariate analysis were carried out to determine significant independent variables, with $P < 0.05$ being significant.

Results: Of the total, 59 patients experienced discomfort consisting of dysuria, urgency, urge incontinence, loin pain, suprapubic pain, frequency, nocturia, or gross hematuria or some combination. Significant factors associated with discomfort were a positive urine culture, crossing of the lower end of the stent to the opposite side, caliceal position of the upper coil, and longer stenting duration.

Conclusion: Proper positioning of the coils of the stent, eradication of infection, and shorter stenting duration are advised to decrease patient discomfort during the period of ureteral stenting.

Editorial Comment

The authors confirm the significant impact ureteral stents have on patient comfort and quality of life, and they identify the following 3 variables that affect stent morbidity: Location! Duration! Infection! Though previous studies evaluating patient comfort have attempted to focus on stenting of a symptomatic ureteral stone or stenting after uncomplicated ureteroscopy, this study included patients undergoing a wide variety of endourological and laparoscopic procedures. Pain measurements may therefore have been confounded by urinary extravasation after endopyelotomy, port site pain, diaphragmatic irritation by carbon dioxide or other variables. In addition, the length and size of stent used was not standardized. The stent duration in this study was long - typically, we leave a ureteral stent for 4-7 days after an uncomplicated ureteroscopy and 2-3 weeks after an endopyelotomy or endoureterotomy. Noting these limitations, it is important to consider some of the simple method proposed by this study to decrease stent discomfort. Intraoperatively, one should ensure proper positioning of the stent coils such that the bladder coil does not cross midline and the renal coil is in the pelvis. Postoperatively if the patient reports discomfort it may be important to perform a urine culture and eradicate any infection. Lastly, shortening the duration of stenting should be emphasized.

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Percutaneous Nephrolithotomy in Patients Who Previously Underwent Open Nephrolithotomy

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Background and Purpose: Open stone surgery nowadays is rare. However, some patients who are treated today have in the past undergone open nephrolithotomy. The aim of this study was to determine the possible impact of open nephrolithotomy on the efficacy and morbidity of subsequent percutaneous nephrolithotomy (PCNL).

Patients and Methods: We reviewed the files of all 167 patients undergoing PCNL at our institution between December 2000 and December 2003. The same surgeon performed all of the procedures. We compared 21 patients undergoing PCNL after open nephrolithotomy to the same kidney with all other patients undergoing PCNL. The groups did not differ in terms of age or stone burden (mean size, number of stones, percentage with staghorn calculi). The outcomes measured were operating time, necessity for secondary procedures, stone free rate, and intraoperative and postoperative complications.

Results: The operating time (203+/-92 v 177+/-52 minutes) and percentage of secondary procedures (29% v 12%) were significantly higher in patients who had previously undergone open stone surgery. However, the stone-free rate (95% v 93%), intraoperative complication rate (10% v 9%), and postoperative complication rate (10% v 11%) did not differ significantly.

Conclusions: A PCNL in a patient with a history of open nephrolithotomy may take longer and lead to a higher percentage of auxiliary procedures, probably because of scar tissue and anatomic changes in the kidney. However, the morbidity and efficacy of PCNL appear to remain the same in these patients.

Editorial Comment

Preoperative planning for PCNL pays off particularly in the complicated patient who has a prior open renal surgery. Though the authors conclude that efficacy is not affected, the secondary procedure rate was significantly higher if the patient has had a prior open surgery. The authors present some important technical tips to consider during complicated PCNL. Firstly, they utilize contrast-imaging to evaluate for intrarenal scarring that would necessitate a direct puncture onto the stone. Secondly, they utilize an upper pole puncture if an incisional hernia is present at the old subcostal incisional site. Thirdly, they emphasize the need for precise initial alignment of the entry needle as the ability to maneuver the needle once inserted is limited by scarring. Lastly, they employ a step-wise algorithm for dilation of the percutaneous tract - starting with a balloon dilator, using a fascia cutting needle and re-inflating if residual waist is present, proceeding to rigid Amplatz dilators if still not successful, and lastly using telescopic metal dilators if all else fails. It is important to emphasize that experience in each of these techniques is important to ensure access to the stone in these complicated patients. Unfortunately, they did not report how often they resorted to each of these techniques. One can conclude from this study that patients undergoing PCNL who have had prior open renal surgery should undergo contrast-imaging studies to delineate the collecting system anatomy. Having the availability and experience of a range of dilation systems is important for successful percutaneous access.

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