

Is Ureteral Stenting after Ureteroscopy Really Necessary?

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ABSTRACT

Objective: To evaluate the use of a Double J stent catheter after uncomplicated ureteroscopy regarding the need for pain killers, lower urinary tract symptoms, fever and the recurrence of stones.

Methods: Over a period of one year from January 2007 through January 2008, all patients who underwent uncomplicated ureteroscopies at Prince Hussein Urology Center, King Hussein Medical Center were studied. Group A were not stented and group B were stented. The need for pain killers, lower urinary tract symptoms, onset of fever and recurrence of stones were analyzed.

Results: A total of 187 patients had uncomplicated ureteroscopies. Seventy-eight (41.7%) patients were stented (Group A) and 109 (58.3%) patients were not stented (Group B). In the recovery room there was no difference in the need for pain killers but there was a great difference in the first four weeks postoperatively where only 20.2% needed pain killers in group B compared to 62.8% in group A. Only 14.6% of patients in group B had lower urinary tract symptoms while 79.5% in group A were symptomatic. The onset of urinary tract related fever was lower in group B compared to group A (0.91% compared to 3.8%). There was no difference in stone recurrence at three months between the two groups.

Conclusion: Stent placement after uncomplicated ureteroscopy is unnecessary, has no added benefit and is associated with increased morbidities. Good clinical judgment is needed for intraoperative patient evaluation and the decision for the need of ureteric stent.

Key words: Double J, Ureteroscopy, Ureter, Stent, Stones

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Introduction

Ureteroscopy has become a cornerstone option of therapy in urology. It has been used for a wide range of indications but mainly in treatment of urolithiasis, especially ureteric stones. The recent improvement in the ureteroscopes regarding reduction of the size of the scope, the better optical visualization and the improvement of durability together with the introduction of flexible ureteroscopes has made it an easier, safer and more efficient mode of treatment.^(1,2)

In most of the cases ureteroscopy is completed without the need of stenting the ureter by a Double J (DJ) catheter. In some cases it is mandatory to stent,

while the question remains to be addressed if it necessary to insert a DJ catheter after all ureteroscopic procedures.

This study was conducted at Prince Hussein Urology Center, King Hussein Medical Center, to evaluate the use of a DJ stent catheter after uncomplicated ureteroscopy regarding the need for pain killers, lower urinary tract symptoms, fever and the recurrence of stones.

Methods

This is a retrospective review conducted over a period of one year from January 2007 to January 2008 at Prince Hussein Center of Urology, King

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Hussein Medical Center. A total of 260 patients underwent ureteroscopy for ureteric stones during this time period using a rigid size 8.5F ureteroscope with a 5F working port. In 73 (28%) patients, ureteroscopies were considered complicated and had clear indication for a DJ stent. These included single kidney, impacted stone with significant edema, multiple residual stones, significant manipulation with mucosal injury and the presence of stricture and were excluded from the study. The other 187 (72%) patients had uncomplicated ureteroscopies and were included in the study. Other causes for abdominal pain or other causes of lower urinary tract symptoms were excluded before surgery.

Seventy eight (41.7%) patients had a DJ catheter inserted post ureteroscopy and 109 (58.3%) patients did not have a stent inserted. The decision of inserting the DJ was entirely dependent on the surgeons experience and surgical decision in the specific case. The patients without a DJ stent were categorized as group A while the patients without a stent were categorized as group B.

A total of 168 patients (89.9%) were outpatients and only 19 patients (10.1%) were inpatients. Inpatients were patients who were admitted preoperatively as emergency cases that needed intervention, or were admitted electively preoperatively because of living far away from the hospital, had no attending persons at home to take care of them, or had co-morbid diseases that needed special care. Other indications of admission postoperatively were difficult anesthesia, unsmooth recovery from anesthesia or severe pain necessitating parenteral analgesics.

The patients were evaluated initially in the recovery room and then follow up was done at 2-4 weeks intervals over a total of three months. The patients were instructed to take the pain killers only for pain episodes. The medical records of these patients were reviewed and analyzed according to the follow up data, age, gender, lower urinary tract symptoms, fever, period need for analgesics (period and amount) and recurrence of stones. The DJ catheters were removed after 4-12 weeks.

Simple descriptive statistics (frequency and percentage) were used to describe the study variables.

Results

Over a period of one year, from January 2007 to January 2008, 260 patients underwent ureteroscopy

for ureteric stones at Prince Hussein Urology Center. The indication of ureteroscopy was obstructing stones or stones not responding to conservative treatment. The size of the stone ranged from 0.6cm to 1.3cm with variable locations along the ureter, 124 (47.7%) were lower ureteric stones, 38 (14.6%) were midureteric stones, 82 (31.5%) were upper ureteric stones and 16 (6.2%) were pelvic ureteric junction stones (Table I).

A total of 187 patients (72%) were considered uncomplicated ureteroscopies; 74 were females and 113 were males. The ages ranged from 17-62 years with a mean of 38.2. A total of 168 patients (89.9%) were managed as outpatients and 19 patients (10.1%) were admitted to the hospital. The average hospital stay was 24 hours (18-72hours). The patients were categorized into two groups. Group B included 109 patients (58.3%) that were not stented after the ureteroscopies while group A included 78 patients (41.7%) who had a DJ catheter inserted (Table II). In the recovery room 92.7% (101/109) of patients without stents and 93.5% (73/78) of patients with stents needed parenteral analgesics.

In the first four weeks postoperatively only 20.2% (22/109) patients in group B needed oral analgesics while 62.8% (49/78) of those in group A needed oral analgesics. The pain killer used was Diclofenac Sodium (Voltaren) tablets 50mgs. The average pain killers needed in group B were 10 tablets in four weeks, while the average tablet intake in group A was 30 tablets in four weeks. Regarding lower urinary tract symptoms including frequency, dysuria, urgency and hematuria, 14.6% (16/109) patients from group B and 79.5% (62/78) from group A complained, 87.5% (14/16) of group B had hematuria as a main complain while 91.9% (57/62) of group A had dysuria and frequency. Only one patient (0.91%) from group B developed fever postoperatively compared to three patients (3.8%) in group A (Fig. 1). All patients in both groups were completely stone free from missed or slipped stones at three months follow up with no evidence of obstruction by ultrasound.

Discussion

Ureteroscopy is one of the recent advances in urology. It has been used for both diagnostic and therapeutic reasons. The main therapeutic indication is urolithiasis.⁽²⁾ There has been many advances in ureteroscope design including the size of the scope, the better optic visualization and improved durability which make ureteroscopy an easier, safer

Table I. The distribution of stones that underwent ureteroscopy

Site	Number of patients (%)
Lower Ureteric stones	124 (42.7)
Midureteric stones	38 (14.6)
Upper ureteric stones	82 (31.5)
PUJ stones	16 (6.2)

Table II. Demographic data of the study group

Total number of ureteroscopies	260 patients
Complicated : Uncomplicated	73: 187
In uncomplicated; stented: unstented	78:109
Male: Female	113:74
Age range(years) / average	17-62/38.2
Inpatients: outpatients	19:168

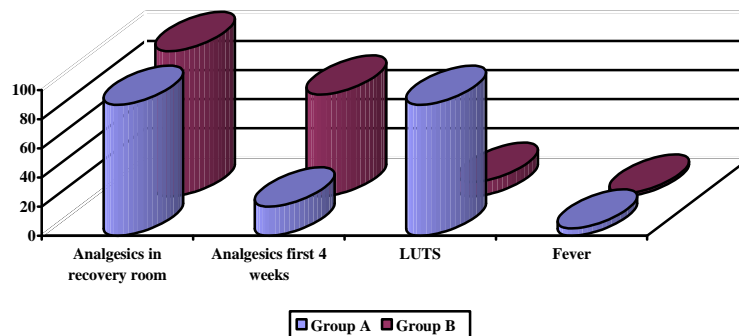


Fig. 1. Postoperative Comparison of Symptoms

and more efficient treatment option,^(1,2) and also the introduction of flexible ureteroscopes.

A DJ stent was previously used after all ureteroscopies, but its use after uncomplicated ureteroscopies remains a big controversy. There are clear indications for the need of a stent after ureteroscopy that include single kidney, impacted stone with significant edema, multiple residual stones, significant manipulation with mucosal injury and the presence of stricture.^(3,4) Complications of ureteroscopy can vary from minimal mucosal injury to ureteric avulsion. They include bleeding, ureteric perforation, urine leak, formation of false passage and infection.

The aim of our study was to evaluate the need of a stent after uncomplicated ureteroscopy. Seventy eight patients (41.7%) had a DJ catheter inserted after uncomplicated ureteroscopies (group A) while the rest 109 patients (58.3%) did not (group B). In the immediate post operative period in the recovery room there was no significant difference in the need for parenteral analgesia (92.7% in group B and 93.5% in group A). On the other hand, during the first four weeks postoperatively, group B patients needed significantly less oral analgesics than group A. Only 22 patients (20.2%) in group B needed analgesics in comparison to 49 patients (79.5%) in group A. These findings are similar to international studies.^(1,2,5-12)

It was also noticeable that the patients without stents had less lower urinary tract symptoms such as dysuria, frequency, urgency and hematuria, than patients with stents. Only 14.6% of patients (16/109) without stents had lower urinary tract symptoms, and 87.5% of these patients mainly complained of hematuria. In the stented group, 79.5% of patients (62/78) had lower urinary tract symptoms, 91.9% of which had dysuria and frequency. These results are consistent with international figures.^(5,6,8,9,11-13)

Only one patient in group B (0.91%) developed post operative fever related to upper urinary tract infection (UTI) proved by culture and was treated with oral antibiotics. The rate of fever was higher in Group A where three patients (3.8%) developed upper UTI related fever and were treated with oral antibiotics with excellent response. This is also consistent with other studies.⁽⁴⁾

The DJ catheter was removed after 4-12 weeks in all patients. The follow up visit in three months showed no difference in stone recurrence from either slipped or missed stones, where all patients in both groups were stone free. Follow up ultrasound showed no evidence of obstruction in either group.

We can conclude that there is no added benefit to inserting a DJ catheter after uncomplicated ureteroscopy.^(1,4-17) Patients without stents had significantly less pain, fewer, urinary symptoms and less use of narcotics postoperatively with no added

risk of complications such as stone formation or obstruction. Therefore it appears that stenting during uncomplicated ureteroscopy is unnecessary.^(1,4-17)

Conclusion

Stent placement after uncomplicated ureteroscopy is unnecessary, has no added benefit and is associated with increased morbidities. Good clinical judgment is needed for intraoperative patient evaluation and the decision for the need of ureteric stent.

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