KOMPLİKE OLMAYAN ÜRETEROSKOPİK LASER TAŞ CERRAHİSİNDE RUTİN DJ KATETER KULANIMININ POSTOPERATİF AĞRI ÜZERİNE ETKİSİ

Effect of Routine DJ Stenting on Postoperative Pain after Uncomplicated Ureteroscopy with Laser Lithotripsy

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ÖZET

Amaç: Bu çalışmamızda rutin DJ stend kullanımının lazer litotripsi uygulanan komplike olmayan üreterorenoskopi olgularında postoperatif ağrı üzerine etkilerini araştırmayı amaçladık.

Materyal Method: Kanuni Sultan Suleyman Eğitim Araştırma Hastanesi üroloji kliniğinde Aralık 2011 ve Şubat 2013 tarihleri arasında Holmium-YAG laser (365 micron; 0.5-1.4J/5-10 Hz) ile lithotripsi uygulanan 139 üreterorenoskopi olgusu retrospektif olarak incelendi. Komplike olmayan üreterorenoskopi uygulanmış 98 hasta çalışmaya dahil edildi. Random olarak 24-26 F DJ stend yerleştirilen hastalar grup 1 ve DJ stend uygulanmayan diğer hastalar ise grup 2 olacak şekilde iki hasta grubu oluşturuldu. Tüm hastalarda postoperatif ilk gün, 5. ve 7. günlerde visuel ağrı skoru (VAS) ile ağrı şiddeti değerlendirmesi uygulandı.

Bulgular: Toplam 48 hastada (% 48.9) DJ stend uygulandı. Hastaların 59' u kadın 39' u erkekti (1.5:1). Ortalama yaş 36.7 (18-74) saptandı. Taş lokalizasyonu olguların 34' ünde (%34.6) proksimal yerleşimliyken, 64' ünde (% 65.4) distal yerleşimliydi. Ortalama taş çapı 12.3 mm (8-22) olarak belirlendi. Ortalama yaş, cinsiyet dağılımı ve ortalama taş çapı her iki grupta benzer saptandı. Postoperatif ilk gün, 5. ve 7. günlerde hesaplanan VAS skorları grup 1 hastalarında anlamlı derecede daha düşük saptandı (sırasıyla p: 0.01, 0.01, 0.03).

Sonuç: Lazer litotripsi uygulanan komplike olmayan üreterorenoskopi olgularında özellikle cerrahiden sonra ilerleyen günlerde postoperatif ağrının önlenmesi veya azaltılması amacıyla rutin DJ stend uygulanması tercih edilebilir.

Anahtar Sözcükler: *Double J stent; Lazer lithotripsi; Ağrı; Komplike olmayan üreterorenoskopi*

ABSTRACT

Objectives: We aimed to clarify the role of routine DJ stent insertion during the procedure on postoperative pain after uncomplicated ureteroscopy with laser lithotripsy.

Material and Methods: A total of 139 patients with treated semirigid ureteroscopy (URS) with Holmium-YAG laser (365 micron; 0.5-1.4J/5-10 Hz) lithotripsy in Department of Urology, Kanuni Sultan Suleyman Training and Research Hospital, Istanbul, Turkey between December 2011 and February 2013 were retrospectively assesed for this case-control study. Among 139 patients, 98 of them underwent primary uncomplicated URS (UURS) and were enrolled the study. A 6F 24 to 26 cm Double J stent was used randomly some patients. Patients diveded to two groups as stended (group1) and nonstended control (group 2) groups. Mean visual analog scale (VAS) scores were evaluated at postoperative first, 5th and 7th days for patients in each group.

Results: Fourty eight of the 98 (48.9 %) patients had Double J stent. Fifty nine patients were women and 39 men (1.5:1), with a mean age of 36.7 years (range 18-74). The stones included 34 proximal (34.6%) and 64 distal localizations (65.4%). Average stone diameter was 12.3 mm (8-22 mm). Mean age, gender distrubition and average stone diameter were similar in groups. A statistically significant difference was found between the two groups for mean VAS scores at postoperative first, 5th and 7th days (p: 0.01, 0.01, 0.03 respectively).

Conclusion: Routine stenting may be performed for preventing or reducing postoperative pain especially in the upcoming days after uncomplicated ureteroscopy with laser lithotripsy.

Keywords: *Double J stent; Laser lithotripsy; Pain; Uncomplicated ureteroscopy*

INTRODUCTION

Non invasive surgical treatment of ureteric stones can either be achieved by extracorporeal shock wave lithotripsy (ESWL) or ureteroscopic stone treatment (URS). URS stone removal has been found to carry a better overall stone-free rate for ureteric stones compared to ESWL (1). The insertion of double-J (DJ) stent during URS stone extraction is controversial. The main advantage of stenting is preventing ureteral obstruction and renal colic that may develop after stone retrieval. In addition, ureteral stenting may help the passage of stone fragments and prevent delayed ureteral stricture (2). However, many patients complain of flank discomfort lower urinary tract symptoms (LUTS), hematuria, infection and poor quality of life due to DJ stent (3-4).

The role of routine DJ stent placement has been evaluated by many studies after uncomplicated URS (UURS) (5) and it remains currently unclear. In this study we aimed to clarify the role of routine DJ stent placement on postoperative pain after UURS with laser lithotripsy.

METHODOLOGY

Between December 2011 and February 2013, 139 patients had undergone URS with Holmium-YAG laser (365 micron; 0.5-1.4J/5-10 Hz) lithotripsy at tertiary referal center were included to study. All patients records retrospectively analyzed. The local institutional review board approved the protocol. All patients had a preoperative informed consent and sterile urine analysis. Urinary collecting system anatomy was evaluated with preoperative intravenous pyelography (IVP) and non contrast computed tomography (NC-CT). Among a total of 139 patients, 98 underwent primary UURS as defined by Tang L et al (6).

URS was performed, using 6.4 F semirigid ureteroscope (Richard Wolf, Germany), under general anesthesia. URS stone extraction was perfomed by Dormia basket. A 6F 24 to 26 cm DJ stent was used randomly some patients. Prophylactic antibiotic was given at anesthesic induction as a single dose 1 g IV ceftriaxone. Subsequently, 500 mg oral ciprofloxacin tablets were given twice daily for 24 hours. Analgesic treatment was not given after the procedure. Pain scores were evauluated by visual analog scale (VAS) at first, 5th and 7th days after the procedure. Clinical pain was reported on a 0–10 VAS, with 0 being “no pain” and 10 being “the worst pain imaginable.” The patients was discharged within 24 hours and DJ stents were removed after 2 weeks.

Patients diveded to two groups as stended (group1) and nonstended (group 2). Mean VAS score was evaluated for patients in each group. The demographic features, stone-related factors and VAS were analyzed. Un-paired t test was used for statistical analysis. $P < 0.05$ was taken as the level of significance. The analysis was performed with SPSS for Windows, version 10 (SPSS, Chicago, IL)

RESULTS

Fourty eight of the 98 UURS (48.9 %) patients had DJ stent insertion. The demographic and stone-related variables of the study group are listed in Table-1. Fifty nine patients were women and 39 were men (1.5:1), with a mean age of 36.7 years (range 18-74). The stone localisations included 34 proximal (34.6%) and 64 distal stones (65.4%). Average stone diameter was 12.3 mm (8-22 mm).

Table-1 Demographics and Stone Characteristics in Study Cohort.

Number of Patients	98
Mean age(years)	36.7±17.9
Gender (F/M)	59/39
Avarage stone diameter (mm)	12.3±4.5
Proximal ureteric stone(n-%)	34-34.6%
Distal ureteric stone (n-%)	64-65.4%

Mean age, gender distrubition, average stone diameter and stone localizations were similar in each group (Table-2).

Table-2 Demographics and Stone Characteristics of the patients.

	Group1	**Group 2**	**P**
Number of Patients	48	50	
Mean age(year)	38.9± 19.6	34.6±18.2	>0.05
Gender (F/M)	30/18	29/21	>0.05
Avarage stone diameter (mm)	12.8±4.7	11.9±3.2	>0.05
Proximal ureteric stone(n)	16	18	>0.05
Distal ureteric stone (n)	32	32	>0.05

A statistically significant difference was found between the two groups for Mean VAS scores at postoperative first, 5th and 7th days (Table-3).

Table-3 Mean VAS scores of the patients in groups.

	VAS Day 1	VAS Day 5	VAS Day 7
Group 1	2,6±1,1	2,7±0,9	1,4±0,6
Group 2	7,3±1,8	6,7±2,1	4,4±3,1
P	0.01	0.01	<0.03

DISCUSSION

Many centers are often placed routine DJ stent after URS, and it is recommended for stone passage after the procedure (7). The main advantages of routine DJ stent placement are prevention of ureteral obstruction and the relief of postoperative pain resulting from ureteral edema or the passage of stone fragments after URS (7). Selective DJ stenting is generally using for intaoperative complications such as mucosal injury, ureteral false passage, ureteral perforation (7-8). The use of multiple-wire baskets for ureteral stones retrieval have been a risk for ureteral avulsion (9-10), therefore some urologist may prefer spontaneous passage with routine DJ stenting after sufficient stone fragmentation instead of complete stone retrieval.
DJ stents can cause symptoms such as disturbing storage lower urinary tract symptoms, hematuria and flank pain (3-4, 11-12). Besides these symptoms there are incidences of complications such as migration, encrustation and sometimes even stone formation (13). In addition to these, routine placement of ureteral stent after URS increases the overall cost of the procedure and removal of the stent using local anesthesia is more traumatic (3, 14).
Many studies evaluated the routine usage of DJ stent after UURS and they concluded that routine DJ stenting is unnecessasy (3, 5, 9, 15). Nevertheless, the routine use of DJ stent after UURS is currently under debate.

In present study we found that decreased pain scores after UURS procedures in DJ stended group at postoperative first, 5th and 7th days. Several studies revealed no significant difference regarding flank pain with DJ stending after UURS (16-17). According to our findings we conclude that routine stenting has preventing effects on postoperative pain after UURS. Our study revealed that the DJ stent has also preventing effect for pain in the upcoming days after the operation. Conventional ureteral catheters may also similar preventing effects for pain, however they usually removed within several days or spontaneously get out. Therefore, conventional ureteral catheters look appropiate only early periods. If the aim of the stenting is preventing or reducing postoperative long term pain that usually occurs when the patients at home, usage of the routine DJ catheter may be best option.

One of the limitations of present study is that complication rates associated with DJ stending were not evaluated, so cost-effctivity between pain resolution and consisted complications could not evaluated. Operation times and its potential effects on postoperative pain were not scrutinized. The other limitation is consist of lack of the stone free rates especially in DJ stending group.

In conclusion, routine stenting may be performed for preventing or reducing postoperative pain especially in the upcoming days after UURS with laser lithotripsy.

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