

Management of forgotten ureteral double J stents: Report of two cases and review of the literature

Unutulmuş üreteral DJ stentlerin tedavisi: İki olgu sunumu ve literatürün gözden geçirilmesi

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ABSTRACT

Double J (DJ) ureteral stents are frequently used as a natural consequence of common use of endoscopic procedures. Even though use of these stents is practical and safe, undesired problems such as urinary tract infection, kidney dysfunction may develop in case of their long stay in the body. DJ stents staying for a long time in the body due to forgotten by urologist and frequently by the patients or due to carelessness of the patients which may cause serious medical and legal problems.

Herein, we reported two cases with DJ stent placed 4 and 2 years ago after open kidney stone operation and encrusted as they were forgotten. These 2 cases were treated by application of ESWL, endoscopic laser cystolithotripsy, suprapubic percutaneous cystolithotripsy, ureteroscopy lithotripsy and percutaneous nephrolithotomy methods consecutively. In conclusion, cases with DJ stents should be informed and warned strictly to avoid rare but serious problems due to delay or forget of these stents. We think that with an algorithm including the consecutive treatment alternatives management of encrusted DJ stents might be more successful. *J Clin Exp Invest* 2012; 3(2): 263-266

Key words: Forgotten ureteral stent, endoscopic treatment

INTRODUCTION

Indications of double J stents (DJ stents) usage have been widely increased. DJ stent placement became a standard protocol in various endourologic procedures.¹ A matter of what purpose it is used, long stay of DJ stents in the body causes undesired side effects such as encrustation, infection, migration, hydronephrosis and fragmentation.² Displacement and treatment of forgotten stents depend on

ÖZET

DJ stentler endoskopik uygulamaların yaygınlaşmasıyla beraber sıklıkla kullanılmaktadır. Bu stentler güvenli ve pratik olmalarının yanında vücutta normalden uzun süre kalırlarsa üriner sistem enfeksiyonu, böbrek fonksiyon kaybı gibi yan etkilere sahiptir. Bazen ürologlar çoğu kez de hastalar tarafından unutulmuş veya hastanın ilgisizliği nedeniyle vücutta uzun süre kalan double J stentler günümüzde halen sorun olmaya devam etmektedir

Bu yazıda, biri 4 yıl önce ve diğeri 2 yıl önce açık böbrek taşı ameliyatı sırasında yerleştirilen ve sonrasında unutulmuş DJ stentli iki hastanın uygulanan ESWL, endoskopi sistolitotripsi, perkütan sistolitotripsi ve perkütan nefrolitotripsinin kombine kullanımıyla taşsız hale getirilmeleri tartışıldı ve ilgili yayınlar gözden geçirildi.

Biz DJ stent yerleştirilen hastaların takiplerinde hastaların daha sıkı uyarılmalarının ve daha çok bilgilendirmelerinin gerekli olduğuna inanıyoruz. Bunun için gerekirse iletişim imkanlarından da yararlanılmalıdır. Enkruste veya taşlaşmış DJ stentlerle mücadele etmek için birçok seçeneğin olduğu ve belli bir algoritma ile bu seçeneklerin kullanılarak hastaların taşsız hale getirilebileceği düşüncesindeyiz.

Anahtar kelimeler: Unutulmuş üreter stenti, endoskopik tedavi

the severity encrustation and the stone formation at the stent. In such situations, changes in a wide range from (Extra Corporeal Shock Wave lithotripsy) ESWL to open surgery or laparoscopy.^{3,4}

In this report, evaluation and making stone free of two cases, one with 4 years and the other with 2 years forgotten DJ stent, and applied treatment algorithm of forgotten DJ stent were discussed in the light of literature.

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CASE REPORTS

Case 1

Twenty years old male patient was presented to our clinic with right lumbar pain. In his past history it was learned that he underwent open renal operation in another center 4 years ago. In direct urinary system X-ray (KUB), it was observed that DJ stent was encrusted along the entire length and 5x5 cm stone formation was present at the lower part of it in the bladder (Figure 1a). Also, stones with a size of 1x1 cm at lower and upper pole of the kidney were observed at urinary system USG. In intravenous pyelography (IVP) analysis, both kidneys were functional. In TcDTPA scintigraphic study, right kidney uptake was calculated as 48% and left kidney uptake was 52%.

Firstly, 3 sessions of ESWL was applied along the entire length of the encrusted DJ stent. The bladder and encrusted part of the DJ stent up to middle section of the ureteral were cleared from the stone by endoscopic approach (Figure 1b). In another session, percutaneous nephrolithotomy (PCNL) was applied for the residual middle-upper ureter part and renal part of the encrusted stent (Figure 1c). Stent was cut from upper part and removed out as two parts (Figure 1d).



Figure 1b. Case 1: Endoscopic appearance after first operation



Figure 1a. Case 1: Preoperative direct urinary system graphy



Figure 1c. Case 1: DJ stent percutaneous access



Figure 1d. Case 1: Cutting and removal of the stent DJ



Figure 2. Case 2: Preoperatif direct urinary system graphy

Case 2

Twenty-three years old male patient was presented to our outpatient clinic with right lumbar pain. He had a history of open stone operation from his right kidney in another center 2 years ago. In DUSG it was seen that at the right side, in the region pertaining to central part of the ureter, 2x2 cm sized stone adherent to DJ stent was present and lower tip of the stent was 8x7 sized stoned in the bladder (Figure 2).

ESWL was applied to the stone in the right kidney and to entire length of DJ stent for three days. In another session, after entering with ureterorenoscopy (URS), the stone in the ureter was divided into small pieces by laser lithotripsy. By entering with nephroscope through suprapubic route lithotripsy was applied to encrusted part of the DJ stent in the bladder. DJ stent was displaced.

DISCUSSION

Owing to technological advances allowing endoluminal evaluation of urinary organs, ureteral stents are used more widely.¹ While the reason of DJ stent application was open kidney stone operation that was done 4 years ago in our first case, it was right ureteral endoscopic stone surgery in the second case.

McCahy et al.⁵ recommended that a computer record should be composed recording the patients that stent was placed in urology clinics and warning the urology physicians about the time of removal of stents. In our first case the patient and his parents declared that they were warned about the stent by their clinicians, however they forgot it. In our second case he told that he was not informed and warned by his clinician.

Cases with encrusted DJ stent should undergo a full urological evaluation.⁶ We examined both patients with ultrasound, IVP and renal scintigraphy.

There is not only one method to manage the forgotten and encrusted DJ stents. While ESWL, URS and traction was preferred for mild to moderate encrusted cases, the approach is more complex in severe forms of encrustation. Some authors used one or more of methods such as ESWL, URS, laser lithotripsy, PCNL, chemolysis with various agents by inserting PCNL tube and open surgical methods.^{3,7,8,9} In our first case, we primarily applied ESWL, URS and laser lithotripsy and treatment PCNL was performed in another session. In the second case; first we performed ESWL. In another session endoscopic laser lithotripsy and URS was applied.

In conclusion, the treatment of all cases with ureteral stent should be accepted as incomplete unless the DJ stent is removed. DJ stents should be removed at the shortest time without exceeding the time of their insertion purpose. Both patient and their parents should be informed about the medical problems that may develop in case of forgetting these stents. In cases that developed serious encrustation and/or stone load due to long stay or forgotten of ureteral stent, successful outcome could be get with low morbidity by starting with minimal invasive methods. Despite these treatments, PCNL may be an appropriate alternative in case of failure of other methods.

REFERENCES

1. Finney RP. Experience with new Double-j ureteral catheter stent. *J Urol* 1978;120(5): 678-91.
2. Kilciler M, Erdemir F, Bedir S, et al. Spontaneous ureteral stent fragmentation: a case report and review of the literature. *Kaohsiung J Med Sci.* 2006;22(7):363-6.
3. Shandera KC: Minimally invasive management of the calcified ureteral stent. *Tech Urol* 1997;3(1):54-7.
4. Tahmaz L, Ozgok Y, Zor M, Basal S, Kilciler M, Istanbuloglu O, Dayanc M. Laparoscopy- assisted tubeless percutaneous nephrolithotomy in previously operated ectopic pelvic kidney with fragmented J-J stent. *Urol Res* 2009;37(5):257-60.

5. McCahy PJ and Ramsden PD: A computerized ureteric stent retrieval system. *Br J Urol* 1996;77(1):147-8
6. Singh I, Gupta NP, Hemal AK, et al. Severely encrusted polyurethane ureteral stents: Management and analysis of potential risk factors. *Urology* 2001;58(4):526-31.
7. Kumar M, Aron M, Aggarwal AK, et al. Stenturia: An unusual manifestation of spontaneous ureteral stent fragmentation. *Urol Int* 1999;62(1):114-6.
8. Soylemez H, Altunoluk B, Onem K, Oğuz F. Minimally painful retrieval of ureteral stent by using ureteroscopy *J Clin Exp Invest* 2010;1 (1); 7-11
9. Veltman Y, Shields JM, Ciancio G, Bird VG. Percutaneous nephrolithotomy and cystolitholapaxy for a "forgotten" stent in a transplant kidney: case report and literature review. *Clin Transplant*. 2010;24(1):112-7.