

Laparoscopic pyeloplasty with fragmented DJ removal for left PUJ obstruction and fragmented DJ in pelvis: A unique case report

Ajay Kumar G^{1*}, Reddy MN², Prasad Babu BSR³, Lava Kumar A⁴, Sindhuri A⁵

^{1,2}Urologist, ³Radiologist, ⁴Anaesthesiologist, ⁵Pulmonologist, ^{1,2}Dept. of Urology, ³Dept. of Radiology, ⁴Dept. of Anaesthesiology, ⁵Dept. of Pulmanology, ^{1,3-5}Sentini Hospitals, Vijayawada, Andhra Pradesh, ²Narayana Medical College and Hospital, Nellore, Andhra Pradesh, India

***Corresponding Author: Ajay Kumar G**

Email: drajay707@gmail.com

Abstract

Increased use of the DJ stent in urological problems has been associated with a marked increase in DJ related complications. Possible complications of ureteral stents include stent migration, encrustation, stone formation, and fragmentation. Spontaneous fragmentation of DJ stent is a rare complication and removal of upper fragmented part is technically difficult and very challenging. We report a case of laparoscopic left pyeloplasty with fragmented DJ removal for left PUJ obstruction and fragmented upper coil of DJ in pelvis.

Keywords: DJ stent, Fragmentation, PUJ obstruction.

Introduction

Ureteric stenting is a common urological procedure. Ureteric surgeries, genitourinary oncology, trauma, transplantation and reconstructive urological surgeries are common procedures where Double-J (DJ) stent is placed.¹ Due to the widespread usage of indwelling ureteral catheters, a number of possible complications such as migration, infection, pyelonephritis, breakage, encrustation, stone formation, and fragmentation have been noted.^{2,3} Several cases of fragmented ureteral stents have been reported in the literature.⁴ Here in we report a unique case of laparoscopic left pyeloplasty with fragmented DJ stent removal and review the relevant literature.

Case Report

A 59-year-old male patient presented to our clinic with left-side pain. Patient gives history of left pcnl 10 years back. He also gives history of Left DJ Removal 1year post surgery. After that he has not followed up any where else. On imaging X RAY KUB showing fragmented left DJ in the left renal area and staghorn calculus in right in right renal area (Fig. A).MR UROGRAM showing upper coil of the DJ stent fragment in left renal pelvis with narrow pelvi uretric junction and right sided staghorn renal calculus (Fig. B). DTPA Scan was done which showed significant left pelvi uretric junction narrowing with decreased GFR. Laparoscopic ports were inserted (one "10"mm supraumbilical for telescope, two "5"mm ports were inserted for working elements. Standard laparoscopic pyeloplasty approach was planned. The peritoneal reflection done of descending colon. Left ureter identified and hooked up (Fig. C). Pelvis mobilised and dismembered (Fig. D). Ureter spatulated laterally. The fragmented upper coil of the DJ stent is removed (Fig. E,F). Anastomosis of PUJ done posteriorly by 3-0 vicryl (Fig. G). 5fr 26cm DJ stent placed (Fig. H).and the anterior layer of PUJ done by 3-0 vicryl (Fig. I). 20fr Drain placed and port closure done. Patient Discharged on POD5. After 4 weeks DJ stent was removed. After DJ stent installation, each patient should be checked by giving required information and told

that the stent must be removed. In cases with forgotten stents and complications, the stents should be removed with suitable medical, endourological, or minimally invasive surgical methods taking care to protect kidney functions.



Fig. A: X-Ray KUB showing fragmented left DJ in the left renal area and staghorn calculus in right in right renal area.



Fig. B: MR Urogram showing upper coil of the DJ stent fragment in left renal pelvis with narrow pelvi uretric junction and right sided staghorn renal calculus.



Fig. C: Left ureter identified and hooked up.



Fig. D: Pelvis mobilised and dismembered.

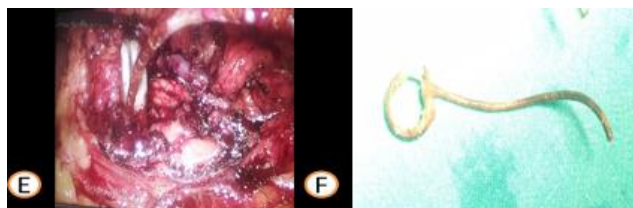


Fig. E & F: The fragmented upper coil of the DJ stent is removed.



Fig. G: Anastomosis of PUJ done posteriorly by 3-0 vicryl.



Fig. H: 5fr 26cm DJ stent placed.



Fig. I: Anastomosis of PUJ done anteriorly by 3-0 vicryl.

Discussion

Double J-stents are routinely used in urologic practice as a simple, safe, and cost-effective way to re-establish or to improve drainage from kidney to bladder without external diversion.^{5,6} Since the introduction of the double J ureteral stent in 1978 by Finney,⁷ many improvements have been made in stent composition, indications, and design, but various complications such as stent migration, occlusion, encrustation, fragmentation, and stone formation are often encountered and could result in significant morbidity.⁸ Ureteral stent fragmentation rates range between 0.3 and 10% in the literature.^{9,10} Different materials and coatings have been designed to avoid them.¹¹ Caused by poor patient compliance with the instructions on returning for stent removal and inadequate counseling by practitioners, a forgotten ureteral stent is another challenging concern for the urologists. In the study made by Ringel et al. on 90 patients who had ureteral stent for 3–12 months, they reported that 10% of the patients had catheter fragmentation, 8.2% had catheter migration, 5.4% had nonrecovering hydronephrosis, and 9.1% had urinary infection, and ureteral catheters were removed in an average of 3.27% of the patients due to the occurring complications.¹² In another study by Adanur and Ozkaya on 54 patients who had forgotten stents, 7.4% of the patients had fragmentation and 27.7% had urinary infection.¹³ Joshi et al. reported that 78% of the 40 patients they included in their study had irritative urinary symptoms, incontinence, and hematuria and the daily activities of >80% were affected by catheter-related pain, 38% had sexual dysfunction, and 58% had lower professional performance.¹⁴

Conclusion

In the conclusion, greater expertise and good technical skills are required in the proper management of such cases. Detailed patient education would be the best treatment to prevent such types of complication. The cause for the PUJ obstruction in this case, could be due to initial procedure-PCNL or the fragmented DJ, which it self can cause infection and PUJO. The importance of ureteral stents should be explained by the urologists to the patients.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given his consent for his images and other clinical information to be reported in the journal. The patient understands that their names and initials will not be published and due efforts will

be made to conceal their identity, but anonymity cannot be guaranteed.

Source of Funding

None.

Conflict Interest

None.

References

1. Ahallal Y, Khallouk A, El Fassi MJ, Farih MH. Risk factor analysis and management of ureteral double-j stent complications. *Rev Urol* 2010;12:e147-51.
2. Schulze KA, Wettlaufer JN, Oldani G. Encrustation and stone formation: complication of indwelling ureteral stents. *Urol* 1985;25:616-9.
3. Robert M, Boularan AM, El Sandid M. Double-J ureteric stent encrustations: clinical study on crystal formation on polyurethane stents. *Urol Int* 1997;58:100-4.
4. Ilker Y, Turkeri L, Dillioglugil O. Spontaneous fracture of indwelling ureteral stents in patients treated with extracorporeal shock wave lithotripsy: two case reports. *Int Urol Nephrol* 1996;28:15-9.
5. Zisman A, Siegel YI, Siegmann A. Spontaneous ureteral stent fragmentation. *J Urol* 1995;153:718-21.
6. Yeh CC, Chen CH, Lin CH. A new technique for treating forgotten indwelling ureteral stents: silk loop assisted ureterorenoscopic lithotripsy. *J Urol* 2004;171:719-21.
7. Finney RP. Experience with new double J ureteral catheter stent. *J Urol* 1978;120:678-81.
8. Richter S, Ringel A, Shalev M. The indwelling ureteric stent: a 'friendly' procedure with unfriendly high morbidity. *BJU Int* 2000;85:408-11.
9. Monga M, Klein E, Castaneda-Zuniga WR. The forgotten indwelling ureteral stent: a urological dilemma. *J Urol* 1995;153:1817-9.
10. el-Faqih SR, Shamsuddin AB, Chakrabarti A. Polyurethane internal ureteral stents in treatment of stone patients: morbidity related to indwelling times. *J Urol* 1991;146:1487-91.
11. Beiko DT, Knudsen BE, Denstedt JD. Advances in ureteral stent design. *J Endourol* 2003;17:195-9.
12. Ringel A, Richter S, Shalev M, Nissenkorn I. Late complications of ureteral stents. *Eur Urol* 2000;38:41-4.
13. Adanur S, Ozkaya F. Challenges in treatment and diagnosis of forgotten/encrusted double-J ureteral stents: The largest single-center experience. *Ren Fail* 2016;38:920-6.
14. Joshi HB, Stainthorpe A, MacDonagh RP, Keeley FX Jr., Timoney AG, Barry MJ, et al. Indwelling ureteral stents: Evaluation of symptoms, quality of life and utility. *J Urol* 2003;169:1065-9.

How to cite: Kumar AG, Reddy MN, Prasad Babu BSR, Kumar LA, Sindhuri A. Laparoscopic pyeloplasty with fragmented DJ removal for left PUJ obstruction and fragmented DJ in pelvis: A unique case report. *IP J Urol Nephrol Hepatol Sci* 2019;3(2):46-8.