

**FORGOTTEN DOUBLE-J STENT: A CASE REPORT**Dr. Ramesh Kaundal<sup>1</sup>, Dr. D. K. Verma<sup>2</sup>, Dr. Puneet Mahajan<sup>2</sup> and Dr. Mukesh Kumar<sup>3\*</sup><sup>1</sup>MS General Surgery, Medical Officer, Civil Hospital Theog (HP).<sup>2</sup>Professor, Department of General Surgery, IGMC Shimla (HP).<sup>3</sup>MS General Surgery, Medical Officer, Regional Hospital Bilaspur (HP).**\*Corresponding Author: Dr. Mukesh Kumar**

MS General Surgery, Medical Officer, Regional Hospital Bilaspur (HP).

Article Received on 02/04/2021

Article Revised on 22/04/2021

Article Accepted on 12/05/2021

**ABSTRACT**

Double-J ureteric stent is a basic and commonly used tool in urological practice. However it is associated with many complications and legal problems especially if it is forgotten or ignored for long time. Proper counseling and careful monitoring of the patients is important to avoid the complications. We present a case of a 37 years old lady with presenting with complications of indwelling DJ stent forgotten for two and a half years.

**INTRODUCTION**

Double-J ureteric stents are placed after many endoscopic and open urological surgeries. Their purpose is to maintain patency of the ureter and promote healing. DJ stent needs to be removed or replaced within 6 weeks to 6 months.<sup>[1-4]</sup> However if ignored or forgotten it may lead to complications like encrustation or stone formation, fractures or blockade of stents, migration of stent proximally or distally, urosepsis and renal failure.<sup>[5]</sup>

**CASE REPORT**

A 37 years old female presented in the surgery OPD of IGMC Shimla with complaints of pain hypogastrium for 1 month, hematuria, burning micturition, increased frequency of micturition. She had a history of open right pyelolithotomy with right DJ stenting done two and a half years back at IGMC Shimla. Post-operative period was uneventful according to the patient.

On examination general physical examination was within normal limits. Patient was afebrile. Pulse was 94 per minute and blood pressure was 112/74 mm of Hg. Per abdominal examination was within normal limits. Scar of previous surgery was present. Rest of the systemic examination was normal. Routine blood investigations were within normal limits. On urine routine examination multiple pus cells were present and on urine culture growth of Klebsiella was present. On ultrasound KUB right kidney showed presence of gross hydronephrosis with dilated ureter. Left kidney was normal. DJ stent had migrated into the urinary bladder. Echogenic densities were present in relation to the DJ stent suggestive of vesical calculi. X-ray KUB was suggestive of DJ stent in the urinary bladder and associated vesical calculi. (Fig1).

The patient was not aware of the DJ stent placed in her ureter during her previous surgery. The patient was hospitalized, given antibiotic treatment and was planned for cystolithotomy and DJ stent removal. On opening the urinary bladder, DJ stent was impacted in the urinary bladder and two calculi were present in relation to the DJ stent. DJ stent and the calculi were extracted (Fig 2). Drain was kept in the retropubic space of retzius.



**Fig 1: X-ray KUB showing DJ stent in urinary bladder and vesical Calculi.**



**Fig 2: Retrieved DJ Stent along with calculi.**

Post-operative period was uneventful. Drain was removed on 4<sup>th</sup> post operative day and patient was discharged. Patient was asymptomatic and in good condition on follow-up after 15 days. The urine culture became negative.



**Fig 3: Post-operative X-ray KUB with Drain in situ.**

## DISCUSSION

Double J stent is an effective means for improving the drainage from kidney to urinary bladder. It is a common procedure in the urological practice used to get relief from ureteral obstruction, preventing ureteric injuries

during the surgical procedures, accommodating adequate ureteric drainage and promoting ureteric healing in the post-operative period.

Double J stents need to be replaced or removed within 6 weeks to 6 months. Complications from forgotten ureteric stents can occur due to inadequate counseling by the urologist or poor patient compliance with instructions for stent removal.<sup>[5]</sup>

Complications include encrustation, stone formation, blockage, fragmentation, migration, urosepsis, hydronephrosis and renal failure.<sup>[5]</sup>

Bacteria form biofilm on the DJ stent and hydrolyze urea in the urine into ammonia. Alkaline pH favors the precipitation of calcium and magnesium leading to stone formation.<sup>6</sup> Encrustation rates are 9.2%, 47.5% and 76.3% if DJ stents are retained for 6 weeks, 6-12 weeks and more than 12 weeks respectively.<sup>[1]</sup>

Both ends of a DJ stent are looped to enhance retention. However, migration may still occur due to poor stent placement or ureteral peristalsis. Stent migration usually occurs in the upward direction.

These complications are challenging to the urologist as they are difficult to manage and they also pose legal implications.<sup>[7]</sup>

The management of ureteral stents depends on the site of encrustation, the stone burden, and the condition of the affected kidney.<sup>[8,9]</sup> Preoperative radiological imaging should be performed to assess the size of the stone and sites of encrustations. A non-contrast computed tomography scan increases the accuracy of predicting the stone burden associated with an encrusted ureteral stent.<sup>[5,9,10]</sup> Renal scan helps to determine the renal function and to plan further management.<sup>[9,11]</sup>

Endoscopic urological management should be done whenever the facility is available. However, stent removal must be performed by well-trained and experienced urologists. In the absence of the appropriate facilities, or if other techniques cannot be carried out, open surgery is an alternative. Depending on the severity of the encrustations, procedures such as ESWL, PCNL, URS lithotripsy, and open surgeries are the management options.<sup>[7]</sup>

The duration of an indwelling double-J stent should be as short as possible. When a longer duration of stenting is required it should be replaced well in time. The patient and patient's relatives should be informed regarding the indications and complications of stent placement and time of stent removal or replacement. The time of insertion of DJ stent and the instruction regarding the removal or replacement of stent should be documented both on the treatment record and on the discharge slip of the patient. Using ultrasound for careful monitoring of

the patient every 2 months can help limit the possibility of a forgotten stent left in situ.<sup>12</sup> A kidney, ureter and bladder (KUB) X-ray provides the patient a visual reminder of the presence of stents in situ, potentially improving the chances of their timely removal.<sup>[8]</sup>

In this case, the stent was “forgotten” because the patient did not return for routine clinical examinations. In order to prevent this, patients must be reminded of the need to have the stent removed at the appropriate time. The timely removal of indwelling stents is essential to reducing morbidity and preventing legal complications for physicians. For patients presenting with indwelling DJ stents forgotten or ignored for a long duration, removal appointments must be scheduled immediately.<sup>[12]</sup>

### CONCLUSION

DJ stent is an integral part of urological practice. However its use should be as short as possible as it is associated with lot of morbidity to the patient if forgotten or ignored for long time. It also brings management challenge and legal problems to the treating surgeons and burden on the resources. Proper education and counseling of the patients and the relatives of the patients is important. Equally important is to document the use of the stents and the timing of removal or replacement of stents.

### REFERENCES

1. Bultitude MF, Tiptaft RC, Glass JM, Dasgupta P Management of encrusted ureteral stents impacted in upper tract. *Urology*, 2003; 62: 622–626.
2. Borboroglu PG, Kane CJ Current management of severely encrusted ureteral stents with a large associated stone burden. *J Urol*, 2000; 164: 648–650.
3. Bukkapatnam R, Seigne J, Helal M 1-step removal of encrusted retained ureteral stents. *J Urol*, 2003; 170: 1111–1114.
4. Kawahara T, Ito H, Terao H, Yamagishi T, Ogawa T, Uemura H et al Ureteral stent retrieval using the crochet hook technique in females. *PLoS ONE*, 2012; 7: 29292.
5. Bas O, Sener NC, Ozgun S, Dede O, Basar H. Stone formation and fragmentation in forgotten ureteral double J stent. *J Clin Anal Med*, 2014; 5(suppl 1): 26–8.
6. Robert M, Boularam AM, El Sandid M, Grasset D. Double-J ureteric stent encrustations: clinical study on crystal formation on polyurethane stents. *Urol it*, 1997; 58: 100-4. *Renal pelvis. Cent european J urol*. 2012; 65/ 4: 238-41.
7. Kelkar V, Patil D. Management of forgotten double J stent and severe large encrusted stones in the bladder and renal pelvis. *Central European J Urol*, 2012; 65(4): 238–41.
8. Jhanwar A, Bansal A, Prakash G, Sankhwar S. Endourological management of forgotten double J ureteral stents: a single centre study. *JOJ Uro & Nephron*, 2017; 1(4): 555-566.
9. Sohrab A, Aneesh S, Sureka SK, Varun M1 Nitesh P, Manoj K, et al. Forgotten reminders: an experience with managing 28 forgotten double J stents and management of related complications. *Indian J Surg*, 2015; 77(Suppl3): 1165–71.
10. Murtaza B, Niaz WA, Akmal M, Ahmad H, Mahmood A. A rare complication of forgotten ureteral stent. *J Coll Physicians Surg Pak*, 2011; 21(3): 190–2.
11. Sancaktutar AA, Kilciler M, Tahmaz L, Dayanc M. Management of forgotten ureteral double J stents: report of two cases and review of the literature. *J Clin Exp Invest*, 2012; 3(2): 263–6.
12. Wani B, Upadhey R, Rathod V, Bhole A. Forgotten long-term indwelling double "J" stent. *Saudi J Kidney Dis Transpl*, 2012; 23(5): 1043–5.