

## DJ stent –boon or curse

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### ABSTRACT

DJ stent is considered as a boon by the urologist but without proper knowledge it turns to be curse for the patient. We report a case of a 34 year old man who developed vesical calculus secondary to DJ stent in a short span of 6-8 months. He underwent cystolithotomy for removal of the vesical calculus along with the DJ stent.

**Key Words :** DJ stent, Vesical Calculus, Cystolithotomy

### INTRODUCTION

DJ stent constitute an important amaraterium in the hands of an urosurgeon. It is used to drain urine from the kidney to the bladder and is usually well tolerated by the patient.

The stent allows good uri-nary drainage from kidney to the bladder and is usually well tolerated by the patient. How-ever, different complications may occur with short or long-term use of these stents. These complications may be of minor nature such as hematuria, dysuria, frequency, low back ache and suprapubic pain or may be more major such as vesicoureteric reflux, migration, encrus-tation, urinary tract infection (UTI), stent frac-ture and secondary vesical calculus formation.<sup>1</sup> Herewith, we report on a rare case of for-mation of large secondary vesical calculus in a patient, in whom the DJ stent re-mained *in situ* for more than a year.

### CASE REPORT

A 34 year old male patient came to our OPD with complaint of recurrent suprapubic pain associated with dysuria, burning micturition and occasional haematuria. His past history revealed that he had undergone open surgery for calculus on left side 6-8 months back. Exact cause could not be ascertained as patient had lost all the old papers. Patient came from low socioeconomic strata and never returned back to the treating doctor for follow up. His general examination was unremarkable and he had no scar tenderness. His urine examination revealed 10-20 pus cells and few RBC's. Plain radiograph of kidney, ureter and bladder system (KUB) revealed presence of a DJ stent on the left side with radioopacity in the urinary bladder most likely vesical calculus. Ultrasonography confirmed the presence of vesical calculus. Other haematological and biochemical parameters were normal. Patient underwent cystolithotomy and the calculus alongwith the embedded DJ stent was removed.



## DISCUSSION

Complications with short-term DJ stent urinary drainage are not known. However, indwelling DJ stents can cause serious complications, such as migration, encrustation and fragmentation. DJ indwelling should be as short as possible. An ideal ureteral stent should be biocompatible, radio-opaque, cost-effective, relieve intra/extra ureteral obstruction, resist encrustation, resist infection and cause little discomfort however such an ideal stent does not exist. The DJ stents being used these days are made of vortek, bio-soft duo, pellethane or blended polymers of polyurethane. The plastic tubes (polyurethane) create problems due to the nonopacification on conventional radiography. However, all stents are prone to the degradational effects especially in the acid medium. Organic components in the urine crystallize on the bacterial bio film formed on the stent. The adherent bacteria hydrolyse urea to produce ammonia. The elevated urinary pH favours the precipitation of

magnesium and calcium in the form of struvite and hydroxyl apatite which results in formation of a calculus.<sup>2,3</sup>

Indwelling time increases prevalence and consequences of all complications. Serious complications, even death, may happen as a result of cases of forgotten stents that stay longer than initially planned or more than six months.<sup>4</sup> Although endourology can provide all necessary solutions for the management of forgotten indwelling stents, the best treatment remains prevention. In order to avoid encrustation, it has been reported that a time period of between 2 and 4 months is considered optimal for double-J stent removal or replacement.<sup>5,6</sup> Ather et al<sup>7</sup> have proposed a computerized tracking programme for removal stents.<sup>7</sup>

## CONCLUSION

Careful monitoring of patients could exclude any possibility of a stent being forgotten at all. In a short

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duration of 6-8 months this patient developed a vesical calculus. Such incidences are also provoking a thought as to whether they are beneficial or a bigger problem when used in patients who will not return back to healthcare centre owing to the loss of daily wages, poverty and ignorance.

## REFERENCES

1. El Khader K. Complications of double J ureteral stents. *J Urol (Paris)* 1996;102(4):173-5.
2. Wollin TA, Tieszer C, Riddell JV, Denstedt JD, Reid G. Bacterial biofilm formation, encrustation and antibiotic adsorption to ureteral stents indwelling in humans. *J Endourol* 1998;12:101-1.
3. Robert M, Boularan AM, El Sandid M, Grasset D. Double-J ureteric stent encrustations: Clinical study on crystal formation on polyurethane stents. *Urol Int* 1997;58:100-4.
4. Monga M, Klein E, Castañeda-Zúñiga WR, Thomas R.. The forgotten indwelling ureteral stent: a urological dilemma. *J Urol* 1995;153(6):1817-9.
5. Lam JS, Gupta M. Tips and tricks for the management of retained ureteral stents. *J Endourol.* 2002;16:733-741.
6. Borboroglu PG, Kane CJ. Current management of severely encrusted ureteral stents with a large associated stone burden. *J Urol.* 2000;164:648-650.
7. Ather MH, Talati J, Biyabani R. Physician responsibility for removal of implants The case for a computerized program for tracking overdue double-J stents. *Techn Urol* 2000;6:189-2.