



## A RARE CASE OF STENTOLITH

## Surgery

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## ABSTRACT

The double J stent provides a convenient means of drainage for the upper urinary tract. It is a common procedure in daily urologic practice. The indications of double J catheter placement include the relief of ureteral obstruction secondary to diverse etiologies, accommodating adequate postoperative drainage, and preventing ureteral injuries during surgical procedures. However, serious complications such as migration, fragmentation, encrustation, and stone formation still occur, especially when stents are left in place for long periods of time. Herein we report a case of a forgotten double J ureteral stent complicated by stone formation.

## KEYWORDS

Forgotten DJ stent, stone, stentolith

## INTRODUCTION

Since the introduction of double J stents in 1978<sup>[1]</sup>, indwelling ureteral stents have been used in patients with calculus disease in order to bypass obstruction or for internal drainage. These stents may be placed prior to extracorporeal shock-wave lithotripsy (SWL) or after procedures for stone retrieval. They are often the first line of treatment in patients with obstructive uropathy. Nonetheless, their use can be accompanied by complications. Most complications occur after prolonged indwelling of stents<sup>[2]</sup>.

## CASE REPORT

This is a case of a 36 year old male who presented to the OPD with history of haematuria on and off since 6 months. Also complained of burning micturition on and off since 3 months. On USG abdomen and pelvis an opacity was noticed in the bladder s/o vesical calculus with left DJ stent in situ. On further inquiry patient gave history of some urological procedure done 4-5 years back. Details were not available. X ray KUB was done which showed a stentolith with left DJ stent in situ.

Opinion was taken with a urologist and patient was initially planned for ESWL for releasing all the encrustations around the DJ stent. After 1 cycle of ESWL, patient was planned for cystoscopic fragmentation of vesical calculus and DJ stent removal. A fresh 6/26 Fr DJ stent was placed which was removed after 3 weeks. Post operative recovery was uneventful.

## DISCUSSION

The double J stent is a double-edged weapon and, though it is regularly used, not always justified. Certain precautions and guidelines should be abided by for its appropriate use. When it is necessary, the patient and the patient's relatives should be thoroughly informed about the need, consequences, and complications, as well as its timely removal. The use of the double J stent should be documented (name, address, and contact information). The practice of such protocols will avoid unnecessary morbidity and, not to mention, legal problems.

Indwelling ureteral stents are an integral part of urologic practices. Ureteral stents have a diverse role in the management of urolithiasis, genitourinary trauma, renal transplantation, genitourinary oncology, genitourinary reconstructive surgery, and obstructive uropathy. Since the introduction of the double J ureteral stent in 1978<sup>[1]</sup>, many improvements have been made in stent composition and design, but complications were encountered frequently.

Zimskind et al reported the use of DJ stents in 1967.<sup>[3]</sup> Since then, ureteral stents are being used for maintaining ureteral patency during the management of ureteral obstruction. Various complications,

including migration, fragmentation and stone formation still occur, especially when stents have been left in situ for long-time.<sup>[4]</sup> The incidence of encrustation increases with the duration that the stent remains indwelling.<sup>[5]</sup>

Endourologic management of a forgotten double J stent is well established. However, it should be managed endoscopically only by those well trained and sufficiently advanced in endourology. Open surgery has a role when multimodal endourology fails or when such a facility is not available.<sup>[6]</sup> In case of severe encrustations, management modalities are more complex. Many investigators have employed ESWL, URSL, laser-lithotripsy, PCNL, chemolysis using various chemolytic agents administered via a percutaneous nephrostomy tube, and open surgery either alone or in combination with other procedures.<sup>[7]</sup> With widespread usage of endoscopic instruments, a tendency to use relatively noninvasive interventions has been observed. However, in the literature, frequent usage of multimodal treatment principles is remarkable.<sup>[8]</sup> especially in the presence of incrustated intrarenal segment of DJS, the use of PCNL and open procedures has been frequently reported.<sup>[9]</sup>

Management of complicated stents requires coordinated use of the latest in medical, lithotripsy, and endourologic techniques, or open surgery. Dissolution of struvite and carbonate apatite calcifications on ureteral catheters and ureteral stents using oral acetohydroxamic acid or hemiacridrin irrigation has been reported.<sup>[10]</sup> Lupu et al described ESWL as the noninvasive procedure of choice for calcified ureteral stents.<sup>[11]</sup> ESWL successfully fragmented calcifications on the renal end and ureteral segment of the stent, but electrohydraulic lithotripsy was necessary to fragment calcification on the bladder end. Smet et al successfully fragmented calcifications on both ends of a ureteral stent by applying ESWL to the bladder end of the stent, with the patient in a prone position, followed by ESWL to the renal end, with the patient in a supine position.<sup>[12]</sup> Due to the advent of surgical devices, endourologic techniques are used to retrieve stents more frequently. The use of a Fogarty catheter and Dormia stone basket have also been reported.<sup>[13]</sup>

## CONCLUSION

Forgotten or retained DJ stent is a source of severe morbidity and also financial strain to the patient. Factors such as education level of patients and counseling before and after the procedure regarding DJ stent placement and its removal plays a vital role to avoid the retained/forgotten stent and in turn avoiding the morbidity associated with the stent. Maintaining the stent registry is simple and feasible. Computer based stent registry with patient directed automated information system can also be used.



**Fig 1: X ray KUB showing stentolith**



**Fig 2: Forgotten DJ stent with multiple encrustations**

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