Case Report

Forgotten DJ Stent: A Rare Case Report of Stone Formation around Neglected Stent

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Abstract

Double J (DJ) ureteral stents are widely used in urological practice; however, neglected stents can result in serious complications. We present a case of a 51-year-old male with bilateral flank pain, urinary discomfort, and intermittent haematuria. He had a history of percutaneous nephrolithotomy with left-sided DJ stent placement 10 years prior, which was not removed. Investigations revealed urosepsis, acute kidney injury, and a fragmented, heavily encrusted stent with multiple renal calculi. The patient was successfully treated with cystolitholapaxy and ureteroscopic laser lithotripsy, followed by complete stent removal. This case underscores the importance of timely stent removal, patient education, and proper follow-up to prevent severe complications associated with forgotten DJ stents.

Keywords: Double J stent, Forgotten ureteral stent, Stent encrustation, Stent fragmentation, Nephrolithiasis, Urosepsis.

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Introduction

Ureteral stents are one of the most sought-after tools in the surgical management of genitourinary diseases.[1] Double J stents (DJ stents) have been used for a multitude of indications, including therapeutic and prophylactic uses.[2] Renal and ureteral stones causing obstruction are the most common indication for DJ stenting, pivotal in providing symptomatic relief.[3] They facilitate the drainage of the upper urinary tract in cases of ureteral oedema and obstruction.[3] Strictures, tumours, fibrosis, hydroureteronephrosis, pyonephrosis, and obstruction at the vesicoureteral junction are other uses of the DJ stent.[4] They have also made their way in the management of post-operative care of renal transplant and other major renal surgeries.[4] Benefits of placing a DJ stent in situ clearly outweigh the associated complications, including vesicoureteral reflux, lower urinary tract symptoms (LUTS), stent discomfort and the like.[5] The number of days it stays in situ varies, from days to several weeks, depending on the indication, patients' symptoms, and resolution of the placement cause.[5] Neglected cases rarely surface once in a blue moon when the forgotten stent becomes the epicentre of symptoms far out of proportion, prone to infections, and a core of renal or bladder stones per se.[6] Complex clinical features develop in settings of prolonged indwelling.[6] Encrustation, fragmentation and migration are other major complications reported in neglected DJ stents.[7]

Case Report

A 51-year-old male presented to the nephrology OPD with complaints of bilateral flank pain and urinary discomfort, from one month on and off, aggravated for the last week. The patient had experienced two previous episodes of haematuria in the last two weeks, which were self-limiting. The symptoms resolved earlier, and thus the patient delayed the hospital visit. For the excruciating bouts of pain experienced earlier, the patient had taken multiple intramuscular painkiller injections at a local facility in his village, but remained uninvestigated for the cause. It was only when the flank pain became unbearable, and the severity of the symptoms increased, that the patient had to seek medical help. There was no history of diabetes, hypertension, or any other comorbidities. The patient was an occasional smoker and alcoholic. On further probing, he revealed a history of percutaneous nephrolithotomy in view of left pyelonephritis and post-procedural left DJ stent placement a decade earlier. The patient had poor compliance and didn't follow through. There was no history of any other illness for which the patient had sought long-term treatment or hospitalisation. The history of tubercular contacts was also negative.

On presentation, the patient was vitally stable, with a pulse rate of 92/min, and blood pressure of 132/80 mmHg measured in the right arm, a respiratory rate of 15/min, and afebrile to the touch, maintaining oxygen saturation at room air. Cardiac and

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respiratory examination revealed no other abnormality. The abdomen was tender to touch over the flanks and on bimanual palpation of the beans. Routine investigations were conducted [Table 1 & 2], which were suggestive of urosepsis with acute kidney injury (AKI).

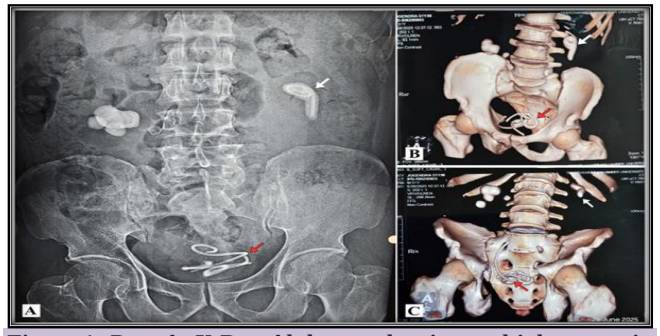

Figure 1: Part A. X-Ray Abdomen showing multiple stones in bilateral kidneys. White arrow depicts the stone formation around fragmented proximal head of DJ Stent. Red arrow points the rest of the coiled loop with distal head of DJ Stent. Parts B., & C. CT Urogram shows the stone fragments in 3D imaging.

Plain radiographs of the kidneys were obtained to look for renal stones. Interestingly, the Chest X-rays obtained revealed a fragmented right DJ stent that had remained in situ for the past 10 years. On lost to follow up, the patient never underwent DJ stent removal. Later, an abdominal X-ray [Figure 1-A] and a CT Urogram [Figure 1-B & C] were obtained, which revealed multiple stones in the bilateral kidneys and a fragmented left DJ stent left in situ with encrustations around it, likely causing flank discomfort. Fragmented parts of the other end could also be visualised in the bladder, giving rise to other symptoms experienced by the patient on and off. The broken and estranged parts of the stent acted as foci for stony buildup and an infection nidus. The right kidney was also shown to harbour a large kidney stone in the right renal pelvis.

Patient was further referred to Urology, where the stone fragments and broken DJ stent in parts were removed using cystolitholapaxy for the part that remained in the urinary bladder, and laser lithotripsy in ureteroscopic guidance for the left renal stone formation around the proximal head, which allowed gradual freeing of the proximal loop of the DJ stent, followed by successful retrieval.

Table 1: Routine Blood Investigations.

S. No.	Investigation	Observed Values	Reference values
1.	Haemoglobin	13.6 g/dL	12 – 15 g/Dl
2.	Total Leucocyte Count	17,200 cells/mm3	4000 – 11000 cells/mm3
3.	Total Bilirubin	0.8 mg/dL	0.2 – 1 mg/dL
4.	Total Protein	6.3 g/dL	6.6 – 8.3 g/dL
5.	Albumin	3.5 g/dL	3.5 – 5.5 g/dL
6.	S. Urea	108 mg/dL	13 – 45 mg/dL
7.	S. Creatinine	2.3 mg/dL	0.5 – 1.2 mg/dL
8.	S. Uric acid	7.3 mg/dL	3.5 – 7.2 mg/dL
9.	Sodium	137 mEq/L	135 – 155 mEq/L
10.	Potassium	5.3 mEq/L	3.5 – 5.5 mEq/L
11.	Chloride	101 mEq/L	90 – 120 mEq/L
12.	ESR	24 mm/hr	0 – 15 mm/hr

Table 2: Urine analysis

S. No.	Investigation	
1.	Physical characteristics	20 ml, pale yellow in colour, clear
2.	pH	6 (range: 4.6 – 8)
3.	Albumin	Trace
4.	Sugar	Negative
5.	RBCs	3-4 /hpf
7.	Pus cells	15-16/hpf
8.	Urine culture	Escherichia coli

Discussion

DJ stenting has found its way in the management of several urological issues and is a handy tool.[1] Its relatively easy handling and manipulation under imaging guidance is what makes it apt for use even after years of introduction.[2] Placement can be done in view of obstructed ureteric or renal stones, or severe hydrouretero- or pyonephrosis- the most common form of indications.[3] Its use in postoperative cases or in tumour management has also been highlighted in previous literature.[4] Complications arising from DJ stent placement have been reported, including but not limited to haemorrhage, infection, migration, and even renal perforation, further complicating the dissemination of infection.[5] It is to be removed once the treatment goals are achieved.[5] However, when they remain in situ for months or years, they become a hospice for infection, encrustations, and stone cores.[6] Forgotten in place, they may remain asymptomatic for years and years- the Houdini magic master, but the possibility of giving rise to severe symptoms, at times life-threatening, always remains.[6]

The present case study also reports such a case where a 51-year-old man had forgotten about the DJ stent placed in his left kidney for years and presented late with symptoms of flank pain and urinary discomfort, seeking help for his unbearable symptoms. Although rare, some authors have previously

reported such presentations of fragmented DJ stents.[7] Urological intervention plays a priority role in management.[8] The study highlights the delayed seeking behaviour of the majority of the Indian population, rural or urban, which often complicates the initial disease. Not only did this patient not follow through with his DJ stent removal at his previous treatment centre, but he also postponed seeking medical help for his new symptoms at his own will, until the situation compulsorily warranted it. The fragmented DJ stent giving rise to nephrolithiasis to be referred to as a complication of the procedure itself or to be attributed to faulty treatment compliance and delayed medical seeking behaviour is the big question that remains. This also reinforces the role of counselling at the treating physician's end and thoughts to ponder for encouraging follow-up.

Conclusion

orgotten DJ stents, although rare, represent a preventable yet potentially serious complication in urological practice. This case highlights how prolonged indwelling of a stent can lead to encrustation, fragmentation, stone formation, infection, and even renal dysfunction, significantly increasing patient morbidity and complexity of management. Timely removal of DJ stents after achieving therapeutic goals is therefore essential.

Equally important is patient education and strict follow-up protocols to prevent such occurrences. Poor compliance, lack of awareness, and delayed healthcare-seeking behavior, as seen in this case, play a crucial role in the progression of otherwise manageable conditions into complicated clinical scenarios.

This report underscores the need for robust tracking systems, effective counselling, and improved patient-doctor communication to ensure adherence to follow-up schedules. Early intervention and vigilant monitoring can significantly reduce the risk of complications associated with forgotten DJ stents and improve overall patient outcomes.

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Conflicts of interest

There are no conflicts of interest.

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