

Forgotten Ureteral Stents - Still A Challenge For Urological Care- A Case Report

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Abstract

Ureteral stents or double J stents are mainly used for effective drainage from kidney to urinary bladder. Complications include stent migration, encrustation and infection among others. Forgotten stents for longer periods pose significant challenges to urologists as they require multiple procedures to remove them completely. We present a case of neglected stent for 6 years in a 35-yr old female, which developed encrustation over its entire length, 6cm stone in bladder engulfing its lower end while stones were present over its upper end. In our case, the patient was unaware that a stent was placed which may have contributed to this complication. Effective strategies include regular follow up, maintaining a Double J stent registry and proper counselling to prevent such complications in order to minimize significant burden on healthcare.

Keywords: Forgotten double J stent, Encrustation, Bladder stone, Ureteral stent, Case report

Date of Submission: 26-11-2024

Date of Acceptance: 06-12-2024

I. Introduction

Ureteral or Double J stent (DJS) is widely used in urology practice for effective drainage after any reconstructive surgery, before extra-corporeal lithotripsy for obstructive uropathy, after ureteroscopy for stone disease or in cases of obstructive anuria. [1] Usually it can be placed for 6 weeks, but can remain up to maximum of 6 months in certain conditions. [2] If the stent is not removed within a timely period, it can lead to migration, stone formation, encrustation or infection. Removal of a forgotten stent can pose a significant challenge, particularly if it is encrusted or formed stones over it. [3]

II. Case Presentation

A 35-year old female patient presented to our outpatient clinic with history of right flank pain, fever, hematuria and burning micturition for one week. On evaluation, ultrasound and X-ray of the kidney, ureter, and bladder (KUB) revealed a forgotten Double J stent which was placed 6 years post ureteric stone treatment in Kuwait. [Figure 1] The Ureteric stent was fully encrusted with approximately 6cm stone in bladder covering its lower end. Non-contrast KUB was done which showed thickened ureteric wall, renal pelvic mucosa and gross hydronephrosis. [Figure 2]

In laboratory examination, urine microscopy showed 31-50 red blood cells and 51-100 pus cells with positive leukocyte esterase while urine culture grew Staphylococcus aureus which was sensitive to the majority of antibiotics. Urine infection was treated with appropriate antibiotics. Her serum creatinine was 89 µmol/L which was slightly elevated above the normal range.

III. Operative Procedure

The patient was admitted for surgical treatment and received one session of extra-corporeal shock wave lithotripsy (ESWL) on upper coil with stones to release the stent from mucosa. However, this was unsuccessful due to composition of stones, adherence of stent with renal mucosa and large surface area. She was subsequently taken to operating room where the bladder stone engulfing the distal coil of Double J stent was fragmented by using Pneumatic lithoclast with 2mm probe introduced through 20Fr Nephroscope sheath. Procedure was done under general anesthesia. Even after making distal end stone free, DJ Stent wouldn't come out. Then 6 Fr Ureteroscope was introduced alongside encrusted stent in ureter. As entire length of stent was encrusted, Pneumatic lithotripsy was used to remove it. Ureteroscope was taken up to the upper coil of the stent which was placed in the renal pelvis. All stones were fragmented with pneumatic lithoclast and the upper end was freed from mucosa. Finally, the stent was removed in toto along with fragmented stones. Entire procedure took about 120 minutes due to multiple procedures involved while simple stent removal usually takes hardly few minutes to remove. [Figure 3]

IV. Discussion

Double J Stents are an integral part of urological procedures. If retained beyond the intended time period, it could pose severe complications to the patient and the clinical management. The reason behind neglected stents could be due to inadequate counselling and follow-up by physicians or poor compliance to follow-up by patients. [4] In our case, patient lost the job and had to go back to her home country without proper post-procedure follow up. Stent compositions and design have been transformed in recent years but are still associated with morbidity if not managed correctly. Various factors have been associated with encrustation which include prolong indwelling time, infection, stone disease, renal insufficiency, metabolic and congenital diseases. [5] One large case series of 22 patients, Monga et al [3] has reported various complications including stent migration, calcification and fragmentation alone or in combination of all. Another case series reported bladder mucosal changes after 3 months of stent placement. [6]

Management of forgotten stent depends upon the severity of stone burden/encrustation, stent migration, and pre-operative status of patient. Usually, a combination of different procedures is required either in one or multiple sessions including ESWL, cystolitholapaxy, ureteroscopy (URS) with internal lithotripsy and sometimes percutaneous nephrolithotomy (PCNL if the upper part of stent has significant stone burden or retrograde access is not possible. [7] In our case we removed the stent by performing ESWL, cystolithotripsy, ureteroscopy with internal lithotripsy.

V. Prevention Of Stent Related Complications

Patient should be fully informed and counselled prior to the placement of an intern stent. This should include educating them to attend follow-up appointments and to promptly report any untoward symptoms. Local hospital systems/computerized registries should be maintained to send reminders to patient about follow-ups and removal or replacement of stent if it is required for longer period of time, particularly in regions with an active migrating population. [8]

VI. Conclusion

Forgotten stents post potentially serious complications for patients as well and represent a significant challenge to treating doctors managing such cases. Additionally, the financial burden is considerable given the requirement for multiple procedures. Patient and family counselling plays an important role in preventing avoidable complications. Active follow-up methods should be implemented and maintained to ensure the timely removal of internal stents.

Consent

Consent was obtained from the patient for the case report to be published.

Compliance with ethical guidelines

There were no ethical considerations to be considered in this research.

Funding

This research did not receive any grant from funding agencies in the public, commercial, or non-profit sectors.

Author's contributions

All authors equally contributed in drafting the manuscript.

1. Dr. Jai Pal Paryani was the primary physician and lead author.
2. Murk Paryani was involved in data gathering and compilation.
3. Dr. Jan Kalyan was assistant in operative procedure.
4. Dr. Deepak N was involved in data analysis.

Conflict of interest

Authors declare that there is no conflict of interest.

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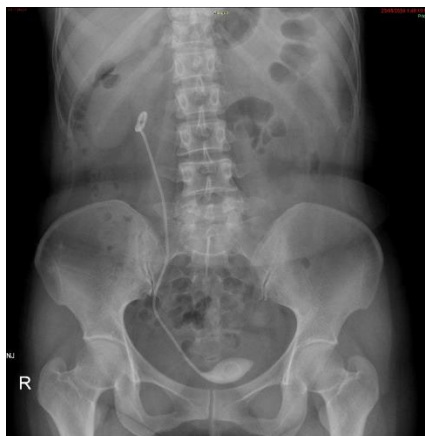


Figure 1. X-Ray of Kidney Ureter Bladder showing large Bladder stone with encrusted Double J stent



Figure 2: CT scan showed stones over upper coil, encrustation on entire length and large bladder stone



Figure 3: Encrusted Double J stent with removed stones