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CASE REPORT

Forgotten DJ stent with calculus in a ectopic kidney: A rare case report

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Abstract

Urologists commonly make use of ureteral double J stents in endourology. If a DJ stent is forgotten to be removed, then complications happen in the form of encrustations, infection, migration, renal dysfunction and hydronephrosis. Ectopic pelvic Kidney is a relatively rare congenital anomaly caused by lack of ascent of the kidney. We report a very rare case of forgotten DJ stent in an ectopic kidney in a 55 years old patient with diabetes mellitus with history of left sided open pyelolithotomy done 21 months back. Redo open surgery was done to remove DJ stent along with stone removal.

Keywords: Ectopic kidney, retained DJ stent, CAKUT, calculus

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Introduction

Congenital anomalies of the kidney and urinary tract commonly designated as CAKUT are rare abnormalities and they include a wide spectrum from abnormal numbers, shape and positional anomalies to fusion, and urinary tract anomalies. Ectopic pelvic kidney is a congenital abnormality caused by lack of ascent of the kidney. Ureteral double J (DJ) stenting after stone surgery is done routinely in such kidneys. To our knowledge forgotten DJ stent in ectopic pelvic kidney has been scarcely described in literature. Here we present a case of forgotten DJ stent post left sided open pyelolithotomy which was removed by open surgery.

Case report

A 59-year-old male presented to the outpatient department of a tertiary care centre with complaints of left sided lower abdominal pain. The pain was intermittent colicky in nature. The patient reports history of left sided open pyelolithotomy done for left sided large renal pelvic calculus in the left sided ectopic pelvic kidney with DJ stenting. The DJ stent was forgotten to be removed post-surgery and has been retained in the left kidney since last 18 months. Patient was further evaluated using Xray KUB (Kidney, ureter and urinary bladder) which revealed ectopic left pelvic kidney with retained DJ stent in situ (Figure 1).

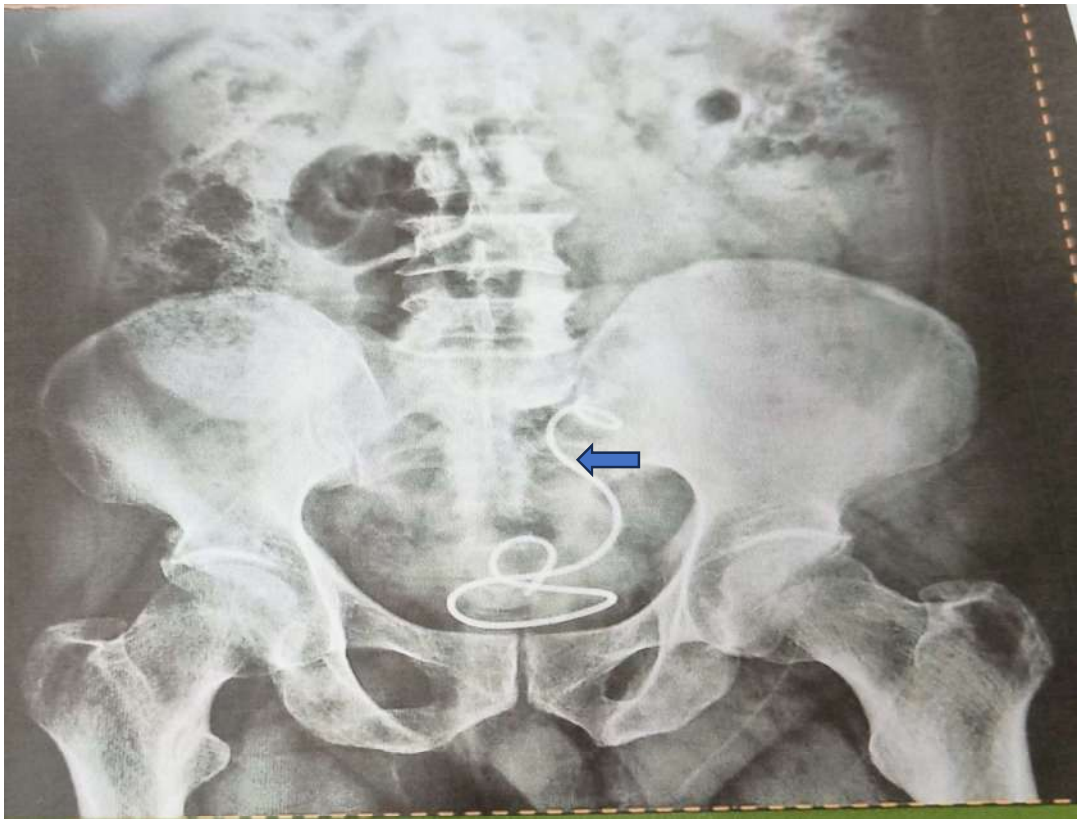

Figure 1. Xray KUB image of the patient showing the retained Double J stent in the left sided ectopic pelvic kidney.

Patient then underwent CT KUB (Computerised Tomography-Kidney ureter and Bladder) which revealed ectopic left sided kidney with retained DJ stent with encrustations all around along with 3.5 cm calculus with density of 500 Hounsefield units (HU) (Figure 2).

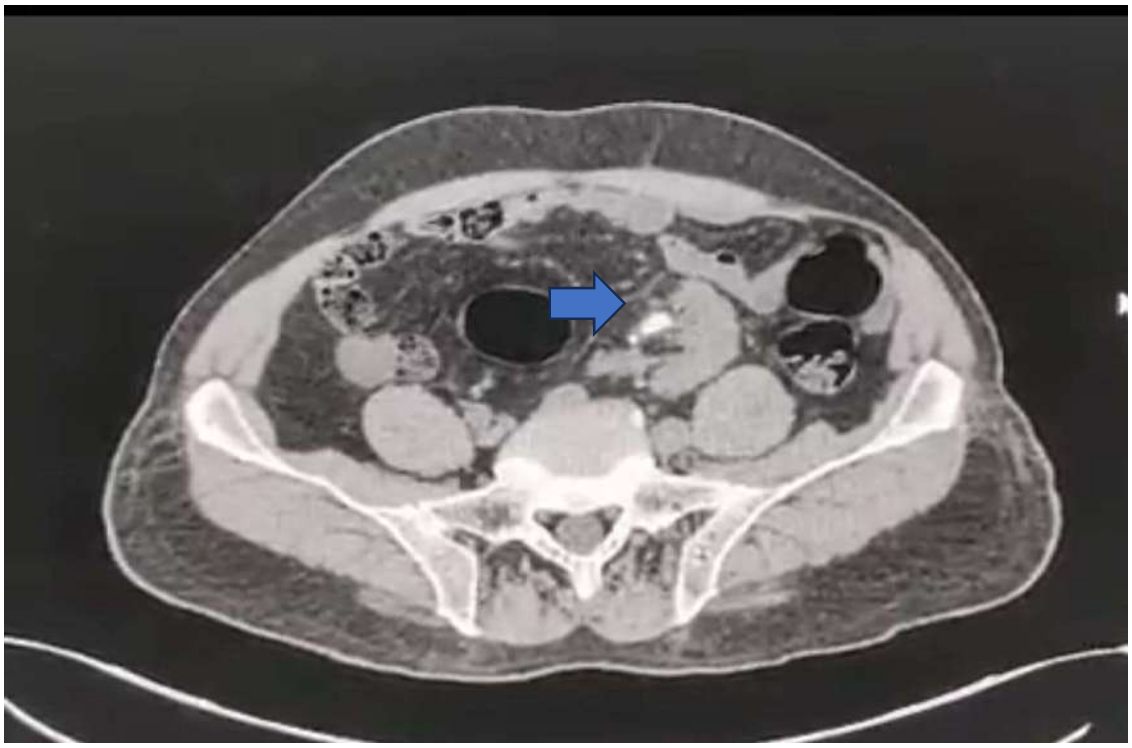

Figure 2. Plain CT-KUB image -axial section showing calculus in the left ectopic pelvic kidney.

In view of the large stone burden and the encrusted stent and the ectopic location of the left kidney, decision was made to go ahead with Left sided open pyelolithotomy with retrieval of the calculus and the DJ stent.

Preoperatively surface marking was done under fluoroscopic guidance to mark tge position of the stone in the left ectopic pelvic kidney (Figure 3).

Figure 3. Clinical picture of the patient showing surface marking of the stone done on table before the commencement of the surgery done under fluoroscopic guidance.

Through a lower midline incision, patient was explored. The left ectopic pelvic kidney was carefully exposed after dissecting the bowel and the peritoneum cranially. Then through a longitudinal pyelolithotomy, the retained DJ stent with encrustations was carefully removed along with the calculus in the left renal pelvis followed by placement of new double J stent and closure of the pyelolithotomy using 3-0 PDS and placement of abdominal drain. (Figures 4, 5 and 6).

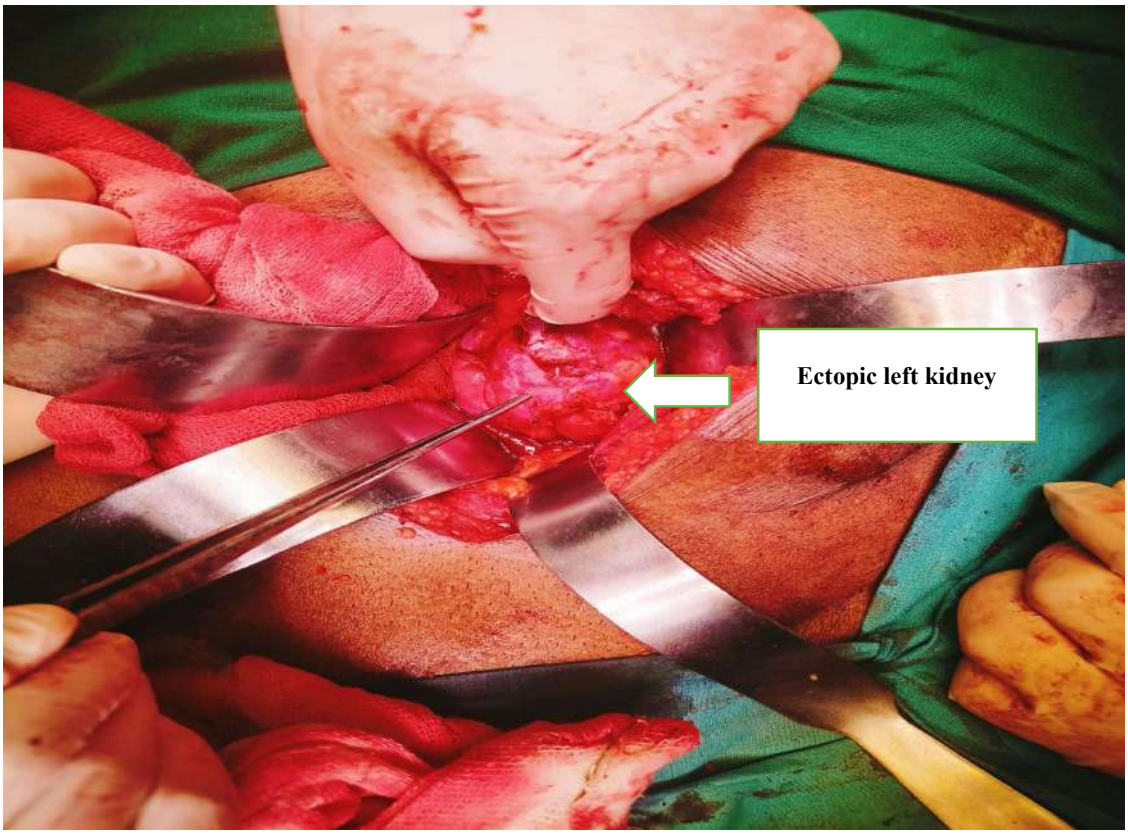

Figure 4. Intraoperative image showing the ectopic left pelvic kidney.

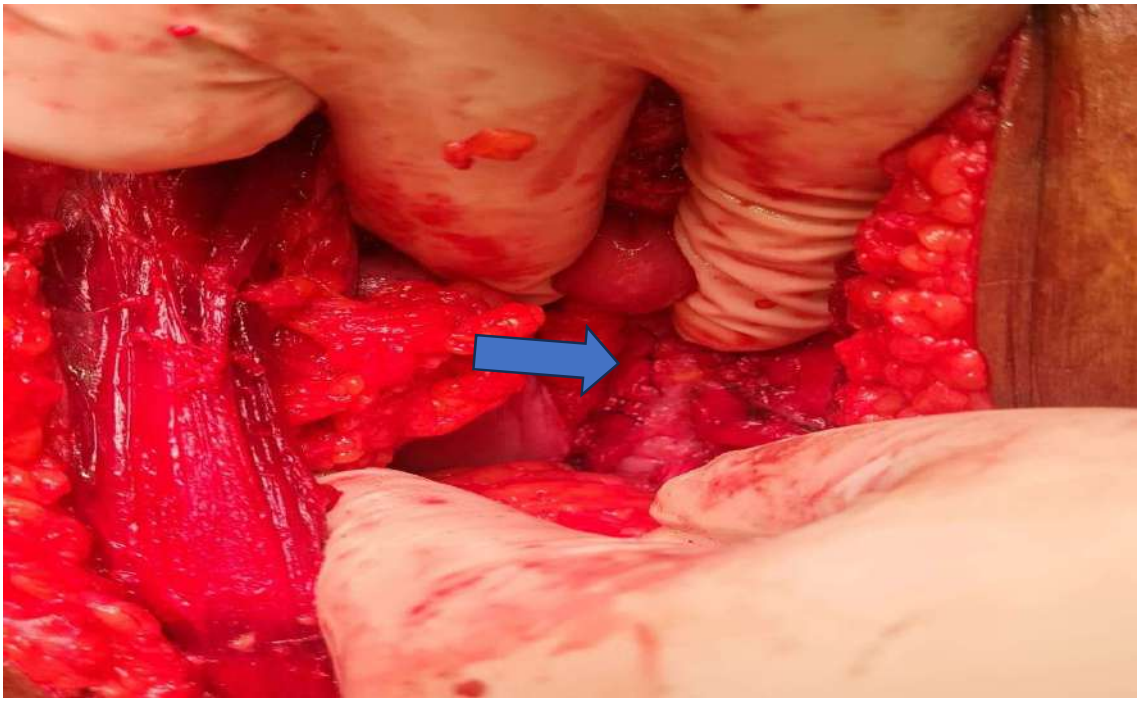

Figure 5. Intraoperative image showing sutured pyelolithotomy incision after retrieval of DJ stent and the calculus.

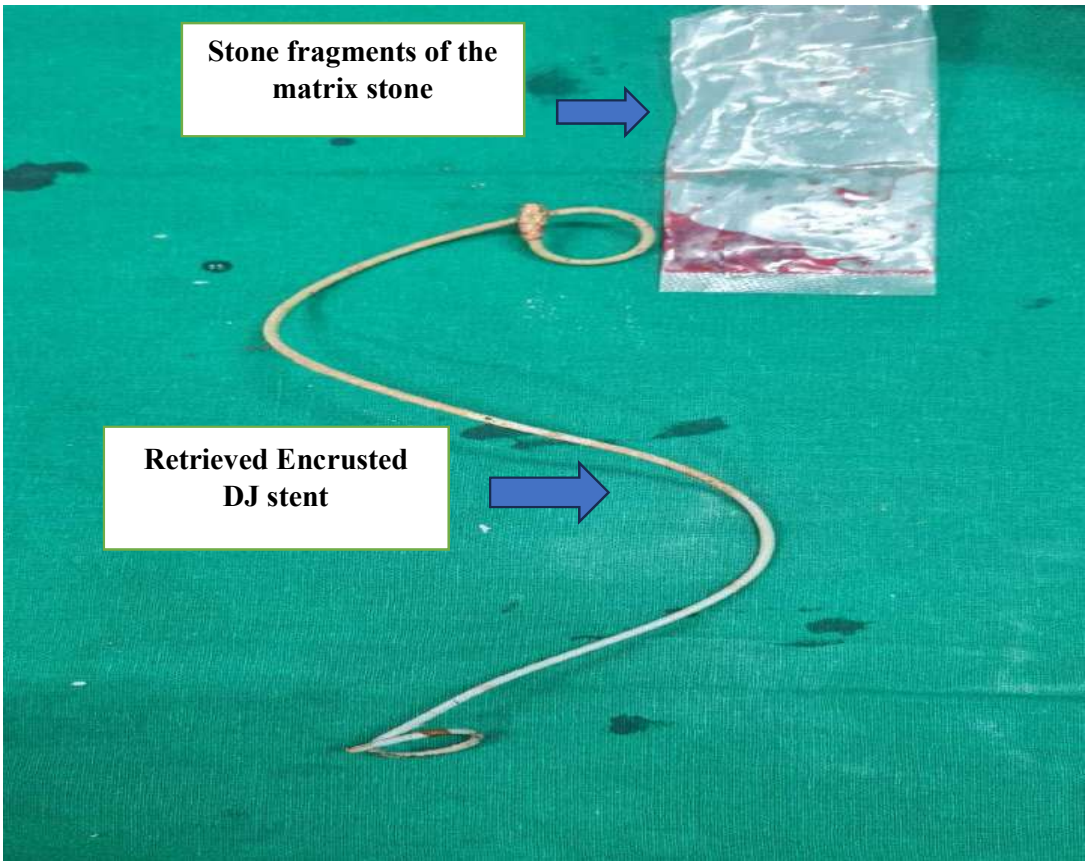

Figure 6. Final postoperative image showing the retrieved DJ stent along with the encrustations and the stone fragments of the matrix stone in the polythene bag.

The post-operative course was uneventful and the patient was discharged after removal of drain. The newly placed DJ stent was removed after 4 weeks. Patient's last follow up was after 3 months after surgery and he is doing well.

Discussion

Renal ectopia in the form of pelvic kidney is one of the described anomalies in the spectrum of the described term "CAKUT" (Congenital anomalies of the Kidney and Urinary Tract).

Thus, CAKUT presents with unique challenges and suprises for the practising urologist due to the variations in their anatomy. So, a careful planning after detailed study of the anatomy by using different available imaging techniques is advisable pre-operatively [1,2].

Double J stent is like a double edged sword and hence, precautions and guidelines should be followed for its appropriate use. Patient should be well counselled that they have double J stent inside their body and they will have to undergo procedure for its removal and or exchange depending on the clinical scenario after a particular period of time. Nowadays DJ stents are used as a therapeutic option for different urological conditions and allows urine to drain from from kidney to bladder and they are considered generally safe and well tolerated. However, if the DJ stent is kept for a prolonged period in situ, then they are

bound to develop hazardous complications in the form of encrustations, fragmentation, infection, migration and stone formation. Forgotten DJ stent presents differently. Damiano et al observed flank pain in 25 %, irritative bladder symptoms in 18.8%, hematuria in 18% of patients. It is believed that asymptomatic patients, poorly compliant patients are more prone to neglect or forget their stents [3]. A calcified forgotten stent or retained ureteral stent is defined as one that cannot be removed with cystoscopy in the first attempt without aid of other auxiliary measures due to encrustation or formation of a stone within the stent [4]. Among various mechanism of encrustation mostly Urinary tract infection (UTI), prolonged duration, urinary composition, congenital urinary tract anomaly is responsible.

At upper coil

Extracoproreal Shock wave Lithotripsy (ESWL), Ureteroscopy, Percutaneous nephrolithotomy (PCNL), Retrograde Intrarenal Surgery (RIRS) and open surgery are the various options available depending on the clinical situation.

At lower coil

Endovesical procedures (cystolithotripsy, cystolitholapaxy). In case of congenital anomalies, one should remember that there are certain precautions to be followed. Retained stent with stone or encrustations is a surgical challenge for urologists and if it occurs in congenital abnormal kidney as in our case, the challenge and the complexity increases further. Our case report presents ectopic pelvic kidney with retained DJ stent with stone formation which was managed by open pyelolithotomy. As per our review of literature, there are very few cases published with retained DJ stent in ectopic kidneys. Management of forgotten stent by endourological methods is well established and there are scoring systems and algorithms developed for management and predictability of clearance in retained DJ stent [5].

Conclusion

Retained DJ stent can be a challenge to remove in some cases especially if there is variation in the anatomy of the kidney and in case of stone formation within the stent. Open Surgery offers an effective approach in the scenario of Retained DJ stent with ectopic pelvic kidney as demonstrated by our case presented here.

Ethics declarations

Funding This study did not receive any funding.

Conflict of interest

The authors declare that they have no competing interests.

Ethics approval, Consent to participate, Consent to publish, Availability of data and material, Code availability

Not applicable

Author Contributions

Ojas Vijayanand Potdar: Design, patient history taking and writing the manuscript of the case report. Akash Shah: Writing the manuscript of the case report. Mohammed Ayub Karamnabi Siddiqui: Design of the case report. Kaustubh Vaidya- Images of the radiological investigations. Darshan Rathi: Patient history taking. Amrita Vikram Patkar: Writing the manuscript of the case report.

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