Case Report

Forgotten double J stent in crossed renal fused ectopia: a rare case report

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ABSTRACT

Ureteral double J (DJ) stent has now become one of the most commonly used tools in endourology. Complications are bound to occur if forgotten to remove, such as encrustations, infection, migration, renal dysfunction, hydronephrosis. Crossed renal fused ectopia is a very rare congenital malformation due to abnormal kidney ascent with fusion during embryogenesis in the first trimester. we report a very rare case of forgotten DJ stent in crossed fused ectopia, in 66 years old diabetic patient post left ureterorenoscopy (URS) done 3 years back. Retrograde intrarenal surgery (RIRS) was done for DJ stent removal right.

Keywords: Forgotten stent, Crossed renal fused ectopia, Retrograde intrarenal surgery

INTRODUCTION

Congenital anomalies of the kidney are rare, which could include abnormal numbers, shape and positional anomalies, fusion, and urinary tract anomalies. Crossed renal ectopia is a rare congenital malformation with most cases it presents as a fusion of both kidney.¹ Ureteral double J (DJ) stenting after stone surgery is done routinely in such kidneys. To our knowledge forgotten DJ stent in crossed renal fused ectopia (CRFE) has never been reported to date. Here we present a case of forgotten stent post ureteric stone management in CRFE which was removed by retrograde intrarenal surgery (RIRS).

CASE REPORT

A 66 years old gentleman presented in Outpatient department (OPD) with left flank pain for 2 days. No history of fever, haematuria. History of Ureteroscopic lithotripsy (URSL) done 3 years back. On examination, vitals were normal, with no signs of pyelonephritis, other physical findings unremarkable. Blood investigation creatinine 2.4mg/dl, others were in normal range. Urine culture was suggestive of extensively drug resistant (XDR)

Enterobacter sp. Sensitive only to colistin. Extensively rug resistant tuberculosis (XDR) sensitive only to colistin. X-ray kidney, ureter, and bladder (KUB) showed retained left DJ stent. CT stone survey was done s/o crossed renal fused ectopia, right kidney located to left side fused with left kidney lower pole with separate pelvicalyceal system and DJ stent in situ (Figure 1). A 21×12 mm calculus of 400 HU in the upper coil of DJ stent (Figure 2). Preoperative investigation was done with an explanation of the course of disease and prognosis. Under General anaesthesia (GA), DJ stent removal was tried gently under fluoroscopic guidance but failed. RIRS was performed with 9 Fr access sheath over glide wire. Calculus was fragmented completely with laser and DJR performed (Figure 3). A new DJ stent (6/26FR) was inserted which was removed after 2 weeks.

DISCUSSION

Renal ectopia and fusion are congenital anomalies of the kidney and urinary tract. Crossed fused renal ectopia is a very rare congenital malformation. The exact incidence is unknown but around 1:1000. In this condition, one kidney migrates abnormally to the opposite side and fuses with

other kidneys during development. This abnormality arises as a consequence of abnormal renal ascent during embryogenesis with the fusion of a kidney within the pelvis. During the 4-8 weeks of fetal life, an abnormal development of ureteric bud and metanephric blastema occurs. Left to right is more common than right to left (3:1). In our patient, both kidney on the left side with right kidney fused to the inferior pole of the left kidney and two separate ureters.²

Figure 1: Reconstructed image showing right to left crossed renal fused ectopia with DJ stent in situ.

Figure 2: 3D image of stent in situ with stone in upper coil in Crossed renal fused ectopia.

Figure 3: Postoperative removed DJ stent and fragments of stone.

Double J stent is like a double edge sword, precaution and guidelines should be followed for its appropriate use. Nowadays it's a therapeutic option for different urological conditions and allows urinary drainage from kidney to bladder and that is considered generally safe and well-tolerated. Serious complication such as encrustations, fragmentation, infection, migration, stone formation can occur if placed for a long time. Forgotten 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.

Treatment options available based on the location of stone can be categorized as:

At upper coil

Extracorporeal shock wave lithotripsy (ESWL)- Localized, low volume (effective first-line therapy). Ureteroscopy (URS)- First line therapy or after failure of ESWL. Retrograde intrarenal surgery (RIRS)- In congenital anomalies. Percutaneous nephrolithotomy (PCNL) or open pyelolithotomy- In severely encrusted stent.

At lower coil

Endovesical procedures (cystolithotripsy, cystolitholapaxy). Certain precautions should be taken during procedures especially if there are associated congenital anomalies present:

Abnormal location, malrotation, and its relations with the vertebral column and small bowel. Crossed fused renal ectopia increases the risk of damaging the surrounding visceral and renal aberrant vessel injuries during surgery. Special auxiliary methods, such as laparoscopic-assisted approaches, may be necessary.

Retained stent with stone encrustations is a surgical challenge for urologists and whenever it occurs in congenital abnormal kidney as in our case complexity increases exponentially. In our case, it happened in crossed fused renal ectopic kidney with 3 years duration of forgotten stent post right URSL. As our knowledge, it has never been published before with such a presentation.

Endourological management of forgotten stent is well established and there are scoring systems and algorithms

developed for management and predictability of clearance in retained DJ stent. This may include an initial assessment of X-Ray KUB or assessment for renal dysfunction and sepsis.⁵

CONCLUSION

DJ stenting is the most commonly used procedure in urological practice. Forgotten stent can lead to morbidity and our case is very rare as it has occurred in crossed fused renal ectopia. Various modalities of treatment are available in today's era for such complex cases. Endourological management can achieve a safe and successful outcome in the treatment of forgotten stent. Proper education and counselling of patients and relatives before and after stenting with maintaining stent registry may help reduce incidence of forgotten stents.

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