Ileal Ureter for Panureteral Stricture of Tubercular Origin

1Parth Nathwani, 2Nitin S Joshi, 3Sengol Joseph, 4Rajpal Lamba, 5Nandan Pujari, 6Dheeraj Shamsukha

ABSTRACT

Genitourinary tuberculosis (GUTB) is the second most common extrapulmonary tuberculosis (TB) after tubercular lymphadenitis. About 8 to 15% of TB patients suffer from GUTB.1 The most common age of GUTB presentation is the fourth decade and the commonest organ involved is kidney. We report here an unusual case of 20-year-old male patient with panureteral tuberculous stricture for which he underwent successful ileal ureter replacement.

Keywords: Genitourinary tuberculosis, Ileum, Panureteral stricture.


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INTRODUCTION

Tuberculosis (TB) has been a leading public health problem, especially in the developing countries of Asia, causing approximately 3 million new cases and 7 lakh deaths every year.2 Genitourinary tuberculosis (GUTB), the second commonest extrapulmonary form of TB, caused by hematogenous spread of organism through blood stream. It affects males and females equally and is commonest in the fourth decade of life. The kidney is usually the primary organ affected in the urinary system, and most other parts of the urinary tract are involved due to direct extension. Insidious onset and difficulty in diagnosis may lead to delay in treatment. This may result in serious complications, such as destruction of kidney or severe involvement of the urinary bladder. Management of ureteral stricture poses both a diagnostic dilemma as well as taxes the surgical skills of the reconstructive surgeon as it is long segment, multiple and associated with fibrosis. If not properly managed, the kidney may be lost. Similarly, the clinician should be careful in declaring the prognosis of these cases as the outcome of ureteral involvement is also dependent on the extent of renal involvement.2,3 The purpose of this case report is to discuss the investigations and management for tuberculous panureteric stricture at unusual age.

CASE REPORT

A 20-year-old male patient was presented as a diagnosed case of left-sided panureteral stricture with left-sided percutaneous nephrostomy (PCN) in situ since 9 months. There was history of repeated urinary tract infection (UTI), requiring hospitalization and intensive care unit (ICU) management due to urosepsis secondary to blocked PCN. Previously, the patient was admitted to a private hospital, with history of repeated UTI, painful hematuria without clots, dysuria, and left flank pain on and off for 1.5 years. There is no past history of Koch’s or Koch’s contact. In the private hospital, he was evaluated with revealed microscopic hematuria and pyuria with Mantoux test positive. Complete blood count (CBC) and renal function test was normal, erythrocyte sedimentation rate (ESR) was 20. Urine culture for acid-fast bacillus was negative. Chest and abdomen X-rays were normal. On ultrasound of the abdomen, there was mild-to-moderate hydrenephrosis on left side with ureteric thickening and thickened irregular bladder wall s/o infective etiology. Computed tomography and intravenous urography (CT-IVU) revealed left-sided delayed excretion with diffuse left ureteral wall thickening and luminal irregularity in the entire course with diffuse narrowing of left lower ureter and pelvi-ureteric junction (PUJ). There were multiple enlarged left renal hilar, para aortic, and small aorto caval lymph nodes (Fig. 1). So the patient was subjected for diagnostic cystoscopy and bladder biopsy which showed presence of tuberculous granuloma on histopathology.

The patient was started on four drug antitubercular treatment (ATT), and after completion of 1 month of ATT the patient was subjected to intravenous urography (IVU) examination, which showed left-sided moderate hydrenephrosis with PUJ obstruction. After 2 months of ATT, the patient developed left flank pain with fever for which Ultrasonography (USG) abdomen was done, revealing progression of left hydrenephrosis with internal echoes s/o pyonephrosis. Double J (DJ) stenting was attempted twice but failed so following this PCN was done on left side. On follow-up percutaneous nephrostogram was done which showed, abrupt cut-off at renal pelvis, with no visualization of PUJ or distal ureter. The patient...
was on PCN for 1 year which was getting blocked by developing pyonephrosis and sepsis, requiring admission for IV antibiotics on and off (Fig. 2). To see the salvagibility of left kidney diuretic Diethylenetriamine Pentaacetic Acid (DTPA) scan was done which showed left kidney with moderately impaired function and obstructed drainage pattern (36%) with mild impairment in glomerular filtration rate. Urodynamic study was performed for capacity, compliance, and outlet obstruction, which were normal. So ileal ureter was planned in view of salvageable kidney and panureteral stricture after confirming normal ileum on barium meal follow through.

The patient underwent left polar guillotine type of partial nephrectomy with ureterocalicostomy (ileo-ureterostomy) as even renal pelvis was fibrosed, through 11th rib bed incision using 25-cm-long ileal segment with nephrostomy and DJ stenting. Postoperative period was uneventful, and the patient was subjected to sodium bicarbonate irrigation. On 10th postoperative day, cystogram revealed no extravasation. On the 14th day, IVU revealed left-sided good renal function and excretion with no extravasation at both anastomosis sites (Fig. 3).

DISCUSSION

The purpose of presenting this case is that the mainstay or cornerstone in treatment of genitourinary Koch’s is antituberculous drugs. However, with successful treatment with ATT, healing process results in fibrosis. Thus tuberculous healing process can lead to disastrous complications. There are ample studies which have emphasized that if there is any suspicion of involvement of ureter by TB process, before starting ATT ureter should be stented. Stenting causes passive dilatation and prevents further worsening of pathological narrowing by acting as a splint. So if the previously treating doctor would have stented the ureter before starting ATT may be this disastrous complication could have been avoided.

Commonest site of tubercular ureteric stricture is UVJ > PUJ > middle third. Length of stricture varies but commonest < 5 cm. Panureteral stricture is very rare. Ureteric stricture resulting obstructive uropathy can lead to renal function loss. Cornerstone in the treatment of GUTB is medical line of treatment by ATT. Unfortunately, as healing starts with ATT, fibrotic changes develops resulting into devastating complications like ureteric stricture. By definition, complex ureteric stricture is a long segment, extensive/bilateral, nonpassable stricture with or without
Ileal Ureter for Panureteral Stricture of Tubercular Origin

salvageable kidney and bladder. Commonest indication of ileal ureter is long ureteric stricture from secondary to TB, schistosomiasis, radiation, or traumatic ureteral loss. Review literature states that management of ureteral stricture of tubercular origin poses both a diagnostic dilemma as well as taxes the surgical skills of the reconstructive surgeon. Literature states that ileal ureter should be performed in very selected parts if no other modality is possible. This procedure involves significant peri- and postoperative morbidity and long-term follow-up.

The few contraindication for ileal ureter are impaired renal functions (creatinine > 2 mg/dl), untreated bladder outlet obstruction, incontinence, neurogenic bladder, ileal disease, and hepatic dysfunction. In some patients, metabolic complications are encountered after surgery. These are: Hyperchloremic acidosis, osteomalacia, abnormal drug metabolism and altered sensorium. Other complications that can occur, arise from removal of portions of gut from the intestinal tract like items, intestinal obstruction stricture, bowel or urinary leakage and abdominal abscess. Other reported complication are urothelial and bowel malignancies, stone formation and renal failure.

CONCLUSION

Genitourinary tuberculosis remains a cause of morbidity, particularly in developing countries, where the incidence of TB is very high. Also the delay in diagnosis leads to further increase in morbidity. Early DJ stenting should be done after 4 to 6 weeks of ATT whenever structural changes in ureter is suspected to salvage the kidney and prevent renal failure. With improved multidrug therapy and reconstructive surgery satisfactory outcome is possible.

REFERENCES