ORIGINAL RESEARCH PAPER

Volume-8 | Issue-7 | July - 2019 | PRINT ISSN No. 2277 - 8179

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

"PUTTY" KIDNEY WITH "THIMBLE" BLADDER, A DISASTROUS SEQUELA OF NEGLECTED GENITOURINARY TUBERCULOSIS: A CALL FOR SURGICAL INTERVENTION.

Urology

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ABSTRACT

Background: Tuberculosis remains a worldwide health problem despite tremendous improvements in diagnosis and management. Globally, 6.7 million cases of tuberculosis were reported to WHO in 2017 and India ranked for highest annual incidence. Extra-pulmonary tuberculosis comprises 15-20 % total burden of the disease in which Genito-urinary tuberculosis is nearly 4 to10% in various studies. Genito-urinary tuberculosis may result in nephron loss, ureteric stricture, bladder contraction, prostatitis, epididymitis, orchitis and even functional loss of these organs. Simultaneous end organ failure of kidney and bladder is rare, because disease is usually detected early, well before bladder involvement. Here we come across two neglected cases of Genitourinary Tuberculosis presented with putty kidney and thimble bladder in same patient.

Case details: 17 years old adolescent and 54 years old adult male, presented with history of intermittent ,mild, dull aching right flank pain and severe lower urinary tract symptoms since last two years. Presumptive diagnosis of genitourinary tuberculosis was made in view of prolong non-specific symptoms and multiple empirical course of antibiotic in suspicion of urinary tract infection. Disease Confirmed with TB PCR of urine . Category one Chemotherapy started. Imaging showed as small capacity bladder with right non-functioning kidney. Full details of disease and prognosis was explained to the patient . After completion of induction phase both patient underwent right nephrectomy. For small contracted bladder, one Patient opted augmentation ileo- cystoplasty and other cystectomy and ileal conduit. At 6 months follow up both the patients completed Anti-tubercular treatment course and doing well.

Conclusion: Impact of untreated tuberculosis on the genitor-urinary tract is devastating. Because of, non-specific symptoms, prolong subclinical course and low yield of current available investigations, chemotherapy is delayed that leads to dysfunctional anatomical changes. Therefore, Surgery continues to play a major role to decrease morbidity as well as to restore functional integrity of genitourinary system.

KEYWORDS

Genitourinary tuberculosis (GUTB) , Putty kidney(PK) , Thimble bladder (THB) ,Anti-tubercular treatment (ATT) ,Acid fast bacilli (AFB)

INTRODUCTION:

The term GUTB was first introduced by Willbolz et al**.** GUTB is the second most common form of extra pulmonary tuberculosis after lymph node (1). The usual frequency of organ involvement is kidney, bladder, fallopian tube and scrotum. It affects male and female equally and commonest in 4th decade of life (2). Spread to kidney usually occurs via haematogenous route, rest of urinary system is involve by direct spread via urine. Kidney may become non-functional either by extensive parenchymal destruction or following multiple calyceal destruction, infundibular stenosis, ureteral stricture or vesico-ureteric reflux (3). Bladder involvement is always secondary to renal TB and usually starts at the ureteral orifice, ranging from patchy cystitis to fibrosed contracted bladder. Despite the tremendous improvement in diagnosis, national reporting system and chemotherapy regimen, genitourinary tuberculosis is still a challenge to urologist .It is estimated that approximately 55% of patients with GUTB require surgical intervention (4).

Case 1:

A 17 years old male presented with intractable lower urinary tract symptoms, increased frequency (15-20 times) associated with urgency and urge incontinence since two years. Physical examination, external genitalia and urine culture were normal. Urine for AFB was negative for mycobacterium but Urine for TB- PCR was positive for mycobacterium tuberculosis. ATT was started. After intensive phase , CT urography [figure 1] showed right non excreting kidney with moderate hydronephrosis and retrograde cystogram [figure2] showed small capacity contracted bladder of about 20ml. Robotic assisted right nephrectomy with augmentation ileocystoplasty was done . Gross nephrectomy specimen exhibit Caseating lesion with thinned out parenchyma. Microscopic examination showed Epitheloid Granuloma with Langhans giant cell consistent of tuberculosis (figure 3). Follow up at 6 weeks, Bladder capacity was 200ml [figure 4] and frequency of voiding decreased to 5-6 times a day.

Case 2: A 54 years old male presented with severe dysuria, frequency, urgency and urge incontinence since one and half years. Physical examination, external genitelia , per rectal examination and blood parameters were within normal limit. Routine urine suggestive of sterile pyuria. Urine for AFB , two out of five sample were positive for mycobacterium tuberculosis. Urine for Cartridge based nucleic acid amplification (CBBNAT) test detected mycobacterium which was sensitive to rifampicin. Thereafter Induction phase of category one ATT started. CT urography (figure 4) showed right non excreting kidney , small contracted bladder and vesicoureteric reflux on right side. Voiding cysto-urethrogram confirm the diagnosis of small bladder , capacity of 20ml with bilateral vesicoureteric reflux (figure 5). Prognosis of disease explained to the patient and he underwent robotic assisted right nephrectomy, cystecto-prostectomy and ileal conduit diversion. Microscopy of specimens revealed epetheloid granuloma and langhans giant cell confirmatory of GUTB . After six months he is doing well and completed the continuation phase of category one ATT.

DISCUSSION:

GUTB is usually a sequelae of pulmonary tuberculosis that had occurred 5-10 years earlier. Bacilli first get lodged in cortico-medullary junction, forms a cortical granuloma and spread to medulla later on. In medulla Pathogenesis start with papillitis and progressed to frank abscess cavities and even total destruction of parenchyma (5).

As disease advance scarring of cortex may leads to papillary and infundibular stenosis and partial or total anatomical or functional loss of kidneys .

Nephrectomy is strongly indicated in patients with a non-functioning tuberculous kidney with complications like hypertension, haematuria, fistula formation or severe flank pain. Wechsler M et al recommend non-surgical management of asymptomatic incidentally diagnosed non-functioning kidney (6) . In contrast to that Kerr W and associate recommends nephrectomy in all the patients with non-functioning kidney, because about 30%-50% of histopathological specimen showed active bacilli even after ATT (7,8). So author strongly recommend nephrectomy in all tubercular non functioning kidney in view of live bacilli in histo-pathological examination and possible future reactivation.

As disease progress it may involve to colleting system and Bacilluria occurs, so absence of bacilluria does not exclude GUTB.

Ureteral and bladder involvement almost always after renal tuberculosis. Vesicoureteric junction is commonest site , followed by mid and upper ureter. In one series, incidence of ureteral stricture in distal ureter was 56%, in mid ureter was 13% and in 17.19% had the multiple strictures (9).

Involvement of bladder starts with focal cystitis to granulomatous inflammation, caseation necrosis, and final healing by fibrosis may lead to marked contracture. Bladder capacity may become 20- 50ml and has no value as a urinary reservoir (7). Contracted bladder is a cause of intractable frequency, urgency and urge incontinence leads to significant morbidity.

Contracted non-compliant bladder with intractable lower urinary tract symptoms warrants surgical reconstruction, either bladder augmentation (for capacity <100ml) or orthotropic neobladder (for capacity <15-20ml). Compromised renal function is no longer a contraindication for surgery unless the creatinine clearance of < 15 ml/minute (10).

Non-functioning kidney and small capacity contracted bladder in same patient is quite rare in GUTB. Only few cases has been reported till date. Case reported by Mohit mathur et al reflect the same scenario, but they did not address the management of thimble bladder (11). Present study successfully managed the both complications of GUTB in same sitting in single admission.

CONCLUSION:

GU TB Can lead to dreaded complications which may require nephrectomy and bladder augmentation to restore normal urinary function, which can be effectively prevented by early diagnosis and treatment by anti-tubercular drugs. Ileo-cystoplasty offer a successful solution for patient with small contracted bladder, however require long term follow up.

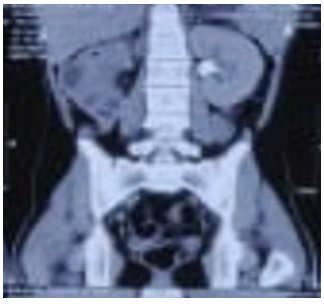


Figure 1. CT Urography, Right non excreting kidney with hydronephrosis



Figure 2. Retrograde cystogram ,Small capacity contracted bladder

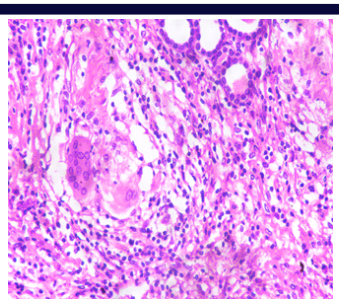


Figure 3 . Microscopy ,Epitheloid granuloma with langhans giant cell

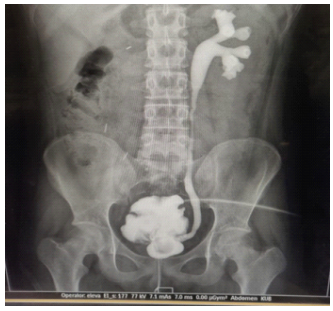


Figure 4- postop bladder capacity about 200ml.

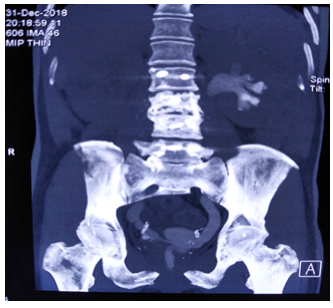


Figure 5. CT Urography, Right non-functioning kidney and small capacity bladder



Figure 6. VCUG, small capacity bladder with bilateral VUR and stricture urethra

REFERENCES :

1. Sharma SK, Mohan A. Extra-pulmonary tuberculosis. Indian J Med Res , 2004;120:316-53.
2. World Health Organization. Report on Tuberculosis Epidemic. Geneva: WHO; 2001.
3. Pal DK et al., Sch. J. App. Med. Sci., 2015; 3(3H):1608-1611.
4. Figueiredo AA, Lucon AM; Urogenital Tuberculosis: Update and Review of 8961 Cases from the World Literature. Rev Urol, 2008; 10: 207–217.
5. Krishnamoorthy S, Gopalakrishnan G. Surgical management of renal tuberculosis. Indian J Urol. 2008 Jul-Sep;24(3):369-75. doi: 10.4103/0970-1591.42620. PubMed PMID: 19468471; PubMed Central PMCID: PMC2684360.
6. Wechsler M, Lattimer JK. An evaluation of the current therapeutic regimen for renal tuberculosis. J Urol. 1975;113:760. [PubMed] [Google Scholar]
7. Kerr W, Gale G, Peterson KS. Reconstructive surgery for genitourinary tuberculosis. J Urol. 1969;10:254. [PubMed] [Google Scholar]
8. Gupta NP, Kumar R, Mundada OP, Aron M, Hemal AK, Dogra PN, et al. Reconstructive surgery for the management of genitourinary tuberculosis: A single center experience. J Urol. 2006;175:2150–4.[PubMed] [Google Scholar].
9. Suleman A; Tuberculosis of genito urinary system. Ind J Radiol Imag, 1993; 3: 253-274.
10. Gupta NP, Kumar A, Sharma S. Reconstructive bladder surgery in genitourinary tuberculosis. Indian J Urol. 2008 Jul-Sep;24(3):382-7. doi: 10.4103/0970-1591.42622. PubMed PMID: 19468473; PubMed Central PMCID: PMC2684349.
11. Mathur DM, Kayal DA, Beniwal DP, Agarwal DD, Malhotra DV. A neglected case of Genito-urinary tuberculosis ; presenting with " Putty " Kidney and " Thimble " bladder. 2014;3(2).