

# Urogenital Tuberculosis - A case Report and Review

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## ABSTRACT

**Introduction:** Urogenital TB is a rare presentation of tuberculosis.

**Case report:** We present a case of urogenital Tuberculosis on account of unusual presentation. It results from hematogenous spread of latent pulmonary infection to the kidneys.

**Conclusion:** Urogenital Tuberculosis requires long-term anti tuberculous chemotherapy like pulmonary tuberculosis and other types of tuberculosis.

**Keywords:** Urogenital, Tuberculosis, Urine

## INTRODUCTION

Tuberculosis (TB) is the most common cause of death from infectious diseases worldwide. Total TB incidence 2.69 million in India according to the global tuberculosis report 2018 by WHO.<sup>1,8</sup> Urogenital tuberculosis (UGTB) is infection caused by *Mycobacterium tuberculosis* of the urinary tract or genitalia. Urinary TB refers to TB of ureter, kidneys and or bladder. Urogenital TB makes up approximately 4% of extra pulmonary TB in india.<sup>2</sup>

## CASE REPORT

A 37-year-old male patient presented with complaints of frequency, urgency of micturition and nocturia which was associated with dysuria and hematuria. There was loss of weight and appetite, intermittent rise of temperature in evening and abdominal pain since 3months. He did not have history of diabetes, hypertension, malignancies. He was regularly consuming minimum a quarter(180ml) of alcohol for more than 12 years indicating Chronic alcoholism. On physical examination, he had signs of pallor and no systemic abnormalities were detected Investigations:

- Complete Blood Count - Normal
- Liver Function Test - Normal
- Renal Function Test - Normal
- HIV1 and HIV2 by ELISA was negative,
- Chest radiograph was normal
- Urine routine examination showed presence of leucocytes in urine however urine for culture were sterile.

Patient was started on Injection Ceftriaxone 1gram IV 12 hourly for 7 days, with no improvement in symptoms, Early morning urine samples were collected for 4 consecutive days for CBNAAT was positive for mycobacterium tuberculosis (mtb) and showed sensitivity to Rifampicin.

CT scan Abdomen images indicated enlarged Left kidney (10.9cm x 6.2 cm) with dilatation of calyceal system and severe thinning of renal parenchyma.

Patient was started on with anti-tuberculosis therapy regimen

Isoniazid, Rifampicin, Pyrazinamide and Ethambutol according to weight for initial 2 months and shifted to Isoniazid, Rifampicin and Ethambutol for 4 months in continuation phase. Patient was non-compliant after 6 months of treatment despite best efforts.

## DISCUSSION

Renal tuberculosis has an atypical presentation with dysuria, pyuria, fever, loss of weight, and flank pain. Sometimes, It can show up as renal mass on imaging,<sup>4</sup> due to hydronephrosis of the involved kidney.<sup>3</sup> It results from hematogenous spread of latent pulmonary infection to the kidneys, epididymis, or fallopian tube, with rare involvement of prostate and other genitourinary organs

affected by local spread. The high oxygen tension in renal cortex favors colonization of *Mycobacterium Tuberculosis*.<sup>6</sup> When virulent bacteria get lodged in the kidney, a foci appears close to the glomeruli, which aggregate leading to small masses<sup>7</sup>. If the disease is left untreated, kidney gets compromised by 15 to 20 years. With involvement of the pelvic mucosa and the ureter, there is stricture leading to hydronephrosis. At times a complete ureteral stenosis may occur and result into auto nephrectomy. Fibrosis of the ureters leads to golf hole ureteric orifice. Caseous substance and fibrous tissue replaces the parenchyma in advanced stages of renal tuberculosis, which is closely followed by calcium deposits and calcification. The organisms in the tissue are detected by acid-fast stains. CT imaging is a must for determining extent of abdominal spread. Other findings of CT include global or focal cortical thinning, scarring of parenchyma, caliceal system dilatation and ureteral dilatation. Fibrotic strictures of the infundibula, renal pelvis, and ureters may be visualized in contrast-enhanced CT which is highly suggestive of tuberculosis.<sup>4,5</sup> Urogenital TB needs long-term compliant anti tuberculous chemotherapy similar to pulmonary tuberculosis and other types of tuberculosis. The diagnostic sensitivity and specificity of urine tuberculosis tests are not as high as pulmonary tuberculosis. The World

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Health Organization (WHO 9) recommends a treatment duration from a year to 6-9 months with four drugs (Isoniazid, Rifampicin, Pyrazinamide and Streptomycin or Ethambutol); in complications and disseminated cases the length of the therapy may be 12–14 months. For late-diagnosed complicated forms of UGTB Chemotherapy is not effective, hence at this stage surgery is indicated, which include nephrectomy and nephroureterectomy. An early decompression resulting from surgical procedure allows preservation of renal architecture through reconstructive surgery in 70.6% of cases. Surgery is an adjunctive method to pharmacotherapy for UGTB in case of complications.<sup>6</sup>

## CONCLUSION

Due to delayed onset and atypical presentation of UGTB symptoms, diagnosis is often delayed, which results in further morbidity. Therefore, high degree of suspicion must be exercised during an assessment.<sup>9</sup> A microbiological diagnosis is a must even if culture yield is low. Nucleic acid amplification tests are promising as they are helpful in early diagnosis and have a high sensitivity for extrapulmonary sites.<sup>10</sup>

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