



Case Report

Haematuria as an initial presentation of urinary bladder tuberculosis: A rare case report

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Abstract

We present the case of a 35-year-old gentleman who had intermittent haematuria and dysuria for six months. The patient did not present with any constitutional signs, such as fever or weight loss, even though she was known to have hypothyroidism. Early imaging tests, such as non-contrast CT and ultrasonography, showed thickening at the vesicoureteral junction and mild hydroureteronephrosis, which may indicate an obstructive process. The diagnostic procedure was complicated by the presence of considerable haematuria in the urine, but a sterile urine culture and negative results from tests for acid-fast bacilli. A biopsy demonstrated granulomatous inflammation, which is consistent with tuberculosis, and cystoscopy revealed erythematous and inflammatory regions at the bladder trigone. These results led to the diagnosis of urinary bladder tuberculosis (TB), an uncommon but dangerous kind of extrapulmonary tuberculosis, in the patient. After starting treatment for extrapulmonary tuberculosis (TB) in accordance with the National Tuberculosis Elimination Program (NTEP) recommendations, the patient has improved with anti-tubercular medication. This case highlights the difficulties in diagnosing genitourinary tuberculosis, especially when common techniques like urine microscopy and culture are unable to identify the illness. The diagnosis was confirmed with the use of cystoscopy-guided biopsy, which allowed for prompt treatment and underlined the significance of a comprehensive clinical evaluation in patients of suspected UG-TB.

Keywords: Urinary bladder tuberculosis, Haematuria, Extrapulmonary Tuberculosis, Hydroureteronephrosis.

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1. Introduction

Approximately 15-20% of instances of extrapulmonary tuberculosis are attributed to genital tuberculosis. Any portion of the genitourinary system, including the kidney, urethra, and penis, may be affected. Moving further down the path, however, results in a decrease in incidence. It is challenging to diagnose this illness because of the condition's late onset of symptoms and other clinical characteristics. The patient typically exhibits signs of urethritis and goes for extended periods of time without experiencing any symptoms. Due to the sterility of the urine culture, detection based solely on microscopy and culture is nearly impossible. Delays in diagnosis lead to chronic renal failure, irreversible damage to tissues and organs, and the advancement of the disease. Possible signs of UG-TB include infertility, irregular

menstruation, abnormal renal function tests, abdominal pain, abdominal mass, obstructive uropathy, and acute or chronic inflammation of the genital or urinary tract. Advanced UG-TB may result in renal scarring, distortion of the pelvic and renal calyces, ureteric strictures, stenosis, obstruction of the urine outflow tract, hydroureter, hydronephrosis, renal failure, and reduced bladder capacity. One of the most feared outcomes of renal TB is believed to be bladder tuberculosis. It is as common as 45% of all cases of genitourinary TB. Mycobacterium tuberculosis can be precisely diagnosed as UG-TB by either detecting its DNA or by culturing the bacteria from a suitable clinical sample. Planning the location, extent, and impact of the disease, acquiring tissue samples for testing, monitoring the patient's response to treatment, and organising medical or surgical management are all made easier by imaging. The WHO suggests standard

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treatment regimens for drug-sensitive TB last 6 to 9 months. TB that is resistant to treatment requires a 12- to 24-month course of dangerous drug therapy under close supervision. In some situations, surgery is required in addition to medical medication treatment. Current challenges in UG-TB management include developing sensitive and rapid TB diagnostic tests, raising clinical awareness, improving treatment results, and getting an early diagnosis.^{1,2}

2. Case Presentation

A 35 years old gentleman was referred to the Department of Respiratory Medicine by the Department of Urology, with complaints of on and off dysuria and haematuria for the last 6 months. Both the symptoms presented on and off. The haematuria was continuous during the entire stream of micturition. The patient was already a known case of hypothyroidism and was on medication for the same. The patient was evaluated in a retrospective manner. There were no constitutional symptoms of fever, weight loss, loss of appetite. His chest X-ray was normal, and there were no significant abnormalities in blood parameters.

Ultrasonography (USG) of the abdomen and pelvis was suggestive of mild right-sided hydroureteronephrosis and cystitis [Figure 1]. Non-Contrast Computerised Tomography (NCCT) of the Kidney Ureter Bladder (KUB) was suggestive of mild enlargement of the right kidney (120x60 mm) with mild mural thickening of the right vesicoureteral junction causing luminal narrowing with right-sided mild hydroureteronephrosis. Computerized Tomography (CT) Urogram [Figure 2] revealed mild irregular mural thickening in the bilateral terminal ureter and the vesicoureteral junction with minimal right hydroureteronephrosis. Urine routine microscopy showed the presence of red blood cells, suggestive of significant haematuria. The urine culture was sterile. Urine microscopy for acid-fast bacilli was negative (three consecutive samples). Urine routine microscopy revealed no significant findings. Cytopathological examination of urine for malignant cells was negative. Cystoscopy showed that the trigone was erythematous, with bilateral ureteric orifice inflamed [Figure 3]. Biopsy was taken from the erythematous and inflamed areas. Histopathological examination showed stroma infiltrated predominantly by lymphocytes and occasional ill-formed granulomas comprising giant cells and lymphohistiocytic cells. Occasionally, blood vessels showed fibrinoid necrosis with partial to complete obstruction, hence giving an impression of granulomatous inflammation.

The patient was finally diagnosed as a case of urinary bladder tuberculosis on the basis of findings of cystoscopy and histopathological examination. The anti-tubercular therapy was started on the basis of guidelines provided by the National Tuberculosis Elimination Program (NTEP) for extrapulmonary tuberculosis. The patient was started on

Rifampicin(R) 450 mg, ethambutol (E)600 mg, isoniazid (H)300mg, and pyrazinamide (Z)1000 mg, which was given for the first two months, followed by RHE for the next 4 months. A total of six months of therapy was given to the patient. The patient is on regular follow-up and is currently improving the symptoms.

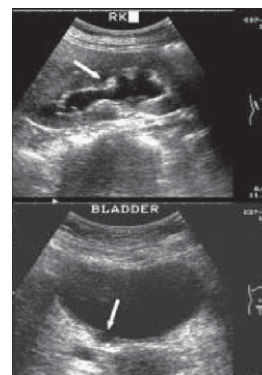


Figure 1: Ultrasound images depicting moderate right-sided hydronephrosis (arrow, upper frame) and an ulcer in the right posterior wall on transverse scan of the urinary bladder (arrow, lower frame). Note that the ulcer has a somewhat irregular, ragged, undermined edge.

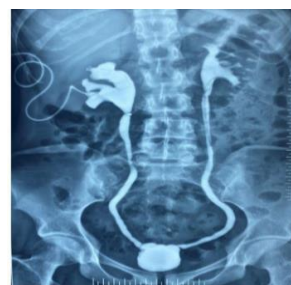


Figure 2: Revealed mild irregular mural thickening in bilateral terminal ureter and vesicoureteric junction with minimal right hydroureteronephrosis

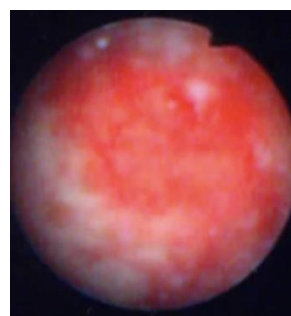


Figure 3: Cystoscopy of the patient showing erythematous mucosa.

3. Discussion

One of the prevalent types of extrapulmonary tuberculosis that is frequently seen in a clinical setting is genitourinary tuberculosis. After lymphadenopathies, it is the second most prevalent kind of extrapulmonary tuberculosis in the West. The kidney is the most often affected organ in genitourinary

TB, with hematogenous infection. Because symptoms of genitourinary tuberculosis take longer to manifest than infection, the incidence of the disease has not diminished despite the introduction of effective treatment regimens. In contrast to female genital TB, which only spreads hematogenously, male genital tuberculosis can occur through direct hematogenous transmission or seeding by contaminated urine. The kidney is the organ that is affected first.³

The most typical clinical manifestation of genitourinary TB is irritative voiding symptoms. Flank discomfort and urine storage may be present in over 50% of individuals. It appears that the most frequent physical finding is a scrotal anomaly. According to a study done in New Delhi, India, the average age at which genitourinary TB presents itself is 34.6 years. Unless renal TB affects the ureter and bladder, it typically does not cause any symptoms. The ureter becomes involved, causing constriction and thickening of the mural tissue, which results in hydronephrosis. The earliest involvement that results in stricture development is the vesicoureteric junction. The bladder may become further infected with the infection. Granulomatous inflammation is typically the result of initial involvement of the trigone.²

Usually, urine infection from renal tuberculosis leads to bladder TB. Additionally, it may happen by hematogenous dissemination from other body parts or the lymphatic system. It can also happen if the Bacillus Calmette Guérin vaccination is administered intravenously. The patient may exhibit dysuria, painful, frequent urination, and incontinence as voiding symptoms. It is essential to test for bladder TB in all individuals with acute cystitis in areas where the disease is endemic. Although it is an uncommon manifestation, bladder TB can also cause hematuria as a result of mucosal erosion. The four stages of bladder TB are as follows: Stages 1 through 3 are called infiltrative tubercle, erosive ulcerative, and spastic cystitis, which causes excessive contraction of the bladder, also known as the false microcystic stage, while Stage 4 is the true microcystitis stage, up to complete obliteration.³

Because the urine culture is typically sterile, diagnosing genitourinary tuberculosis is typically challenging. Renal tuberculosis is characterized by sterile pyuria.⁴ In the event that three consecutive samples are submitted, the sensitivity of the Ziehl Neelsen stain for acid fast bacilli (AFB) is increased. All three of the samples we sent to AFB, however, came back negative. This complicated the diagnosis. In these situations, as it was in ours, cystoscopy guided biopsy is beneficial. The lesion's histology typically demonstrates lymphocytic infiltration and persistent granulomatous inflammation.^{5,6} Additional radiological tests could be a pelvic and whole abdominal USG, a CT urogram, or an NCCT of the KUB. All of them, though, might merely be symptoms of the illness, making a conclusive diagnosis challenging.⁵

For genitourinary tuberculosis, a brief course of conventional antitubercular medication is thought to be sufficient, according to the most recent INDEX TB guidelines for extrapulmonary tuberculosis.⁷ Antitubercular treatment is initiated for all patients, regardless of their stage of tuberculosis and its aftereffects. Surgical techniques, however, may vary depending on the disease's stage and the affected spot. Bladder TB is a complications of genitourinary tuberculosis and requires standard anti tuberculosis treatment. Trosipium chloride is an anticholinergic drug can be used for overactive bladder symptoms (eg. Urgency, frequency, incontinence).⁸

4. Conclusion

When genitourinary tuberculosis is diagnosed early and effectively, therapy can be started sooner, decreasing the likelihood of complications and sequelae and necessitating fewer surgical operations. In cases like ours, a biopsy can be the only method to diagnose the patient, so it should not be postponed. Regardless of the disease's stage, antitubercular therapy needs to begin very away.

5. Source of Funding

None.

6. Conflict of Interest

None.

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