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Research Article

A TALE OF PERSISTENCE: UROGENITAL TB IN CHALLENGING DIAGNOSIS

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A B S T R A C T

Tuberculosis (Tbc) is a granulomatous disease caused by *Mycobacterium tuberculosis* bacillus (*M. tuberculosis*). Although it is primarily seen in the lungs, other organs may also be affected with a lower prevalence. The second most common prevalence of extrapulmonary Tbc cases, nearly 27% of extrapulmonary Tbc cases, are seen in the urogenital system. The most important mechanism introduced in urogenital Tbc pathophysiology is the hematogenous spreading after primary lung infection. After the initial settlement of bacillary in kidney parenchyma, the bacillary may not cause an infection if the host defense is satisfactory or the virulence of bacillary is low. However, the presence of these factors (low host defense or increased bacillary virulence) may cause parenchymal infiltration and granulomatous infection resulting in fibrosis. In addition, caseous necrosis in papilla and calyxes and chronic abscesses in renal parenchyma may also occur as the disease progresses. In addition to stricture in the ureteropelvic junction and ureter, it may spread to the bladder and cause bladder fibrosis and caseous necrosis.

INTRODUCTION

Tuberculosis (TB) is the most common cause of infection-related death globally. Around 5 to 45% of TB cases have extra-pulmonary manifestations, and in those, 30 to 40% cases involve the urogenital tract. Genitourinary tuberculosis (GUTB) is defined as a urinary tract infection or genitalia by bacilli of the *Mycobacterium tuberculosis* (MTB) complex(1). The term genitourinary tuberculosis(2) was coined by a Swiss urologist, Hans Wildbolz, in 1937. Following pulmonary tuberculosis, around 2 to 20% of individuals may develop genitourinary tuberculosis after a latency of 5 to 40 years.

GUTB(2) can refer to TB affecting the urethra, bladder, ureters, or kidneys in both sexes, the scrotum, penis, testes, epididymis, or vas deferens in males, and vulva, vagina, cervix, uterus, ovaries, or fallopian tubes, in females. However, urinary tract TB occurs more frequently when compared to genital TB.GUTB(2) becomes important as it is often diagnosed late, and this delay can lead to complications such as urethral or ureteric strictures, renal failure, infertility, as well as a myriad of other complications which necessitate specialist care.

CASE REPORT

Our case was 38 year old male was admitted in general medicine department with complaints of abdominal pain, fever, dysuria, hematuria, generalised fatigue for 2 months. Pt was a k/c/o systemic hypertension not on regular medication. He had no additional diseases and surgical history. No pathological findings were observed on physical examination.

All necessary investigations were sent. Complete blood picture was normal. Kidney function tests showed urea- 43, serum creatinine-2.7. Urine analysis showed plenty of red blood cells and 2 to 3 pus cells. Urine culture was taken and antibiotic treatment was started and no growth showed in the urine culture. The HbsAg, anti-HIV, and anti-HCV were negative. Since the symptoms recurred, urinary system ultrasonography was taken. Thickened urinary bladder and increased cortical echoes in both kidneys suggestive of grade I medico renal disease. Contrasted abdominopelvic computed tomography (CT) was performed. There was bilateral kidney appears bulky with perinephric and periureteric fat stranding and mild edematous wall thickening of bilateral perirenal fascias suggestive of acute pyelonephritis. Therefore a urogenital TBc was investigated. Urine for AFB 8 samples sent out of which 2 came out to be positive. Interferon gamma assay was sent which came out to be positive. Nephrologist and urologist opinion obtained and diagnosed as urogenital TB. Afterwards the patient was consulted with pulmonary diseases department. Isoniazid, rifampicin, ethambutol, and pyrazinamide treatment was started. The patient has been followed with general medicine and pulmonary disease department.

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DISCUSSION

Urinary Tuberculosis (4) is a severe problem that can cause pathologies such as renal failure and chronic kidney disease. The diagnosis is difficult because there is no specific symptom, and a long time passes between the diagnosis and treatment. Some patients can be asymptomatic, but nonspecific symptoms such as dysuria, frequency, renal colic, hematuria, acidic urine pH, and sterile pyuria can be observed. If there is presence of these symptoms, this disease may imitate pyelonephritis(3) and kidney stone." The most important laboratory finding which may raise doubts about urinary tuberculosis is sterile pyuria. While sterile pyuria is concealed due to secondary infections in nearly 20% of the patients, microscopic hematuria(5) can be detected in nearly 50%. The presence of sterile pyuria and chronic lower urinary tract symptoms may be important findings for urinary Tuberculosis. Therefore, tuberculosis culture(6)should be performed at the first evaluation of the patient if there is presence of these symptoms. The diagnosis depends on the presence of bacillus in urine. After the cultivation of minimum three urine analysis in Löwenstein–Jensen medium(7), it was observed that *M. tuberculosis* bacillus provided a positive result in 90% of the patients after waiting for 6–8 weeks. In recent years, PCR and nucleic acid amplification tests are also used in Tbc diagnosis, and PCR was found as positive in 94% of genitourinary Tbc cases(8).

There are no specific findings in imaging methods for diagnosis. Perirenal abscess and hydronephrosis can be observed. Findings such as bladder wall thickening and asymmetrical appearance are among the detectable findings in bladder involvement cases. In case of renal failure, a nonfunctional kidney image may be present in intravenous pyelography(8). In our case, the left kidney had a nonfunctional appearance, and there was an asymmetrical wall thickening in the bladder. Systemic treatment should primarily be planned in urinary Tbc treatment. A combination of isoniazid, rifampicin, ethambutol, pyrazinamide, and streptomycin(11) is used in primary care. The minimum treatment is at 6 months. In case of resistance against first-line drugs, second-line antituberculosis drugs (9)are among the options to be used for treatment. In severe fibrosis, corticosteroid treatment(12)is among the options which can be added to antituberculosis treatment. Percutaneous nephrostomy opening, JJ catheter insertion, pyeloplasty(13), ureterostomy, (10)ureteroneocystostomy, partial nephrectomy, total nephrectomy, bladder augmentation, and urethral reconstruction (11)are among the applicable surgical treatments based on the affected organ and the severity.

CONCLUSION

Urinary Tuberculosis(1)is a rare but important disease that may cause severe problems. Diagnosis takes time because there is no specific finding. Severe complications may occur because of late diagnosis. Recurrent urinary tract infection should be considered for this distinctive diagnosis(3) in presence of persistent dysuria(3).

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