

## Primary extrapulmonary tuberculosis of the testis- A case report

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### Abstract

Genitourinary tuberculosis (GT) constitutes 8-15% of extrapulmonary form of tuberculosis (TB). Genitourinary tuberculosis has predilection to affect epididymis, seminal vesicles, prostate and testis. Testicular involvement however is rare seen in about 3% of patients with genital tuberculosis. We are reporting a case of unilateral tubercular testicular swelling.

**Keywords:** Antitubercular therapy; Extrapulmonary; Genitourinary; Tuberculosis

### Introduction

Tuberculosis (TB) is a global health problem and it has potential to effects almost every part of our body. After lymph node and pleural involvement, genitourinary tuberculosis (GT) is the most common form of extrapulmonary TB contributing to up to 30% cases [1]. The spectrum of involved sites include adrenal gland, kidney, urinary collecting system, epididymis, seminal vesicles, prostate, male and even female pelvic organs [2,3]. GT initially affects kidney before spreading to other part of genitourinary system. Testis and prostate are commonly involved in males. An isolated testicular involvement can pose a diagnostic dilemma simulating malignancy. This case is unique because of isolated tubercular testicular swelling with no other tuberculous foci, elsewhere in the body.

### Case Report

A 19-year-old unmarried male student presented with a six months history of left scrotal swelling. He gave a history of increased scrotal pain for the last three months. The swelling was hard and increasing in size in spite of conservative management. He had also developed low grade fever and loss of weight for the last four months. There was no history of testicular trauma, back, flank or abdominal pain. He did not complain of any urinary symptoms either. There was no prior history of tuberculosis or anti-tubercular therapy (ATT). Also, there was no history of similar episode in family or in close contacts.

External genitalia examination revealed enlarged left testis and a mass was present over posterior side of testis. It was tender, non-fluctuant, hard, having an irregular surface, about 4x5 cm in size, not attached to the overlying skin, and not transilluminable [Fig. 1]. The rest of the systemic examination was normal. Routine hematological parameters were within normal limits too. The examination of right testis was within normal limit. Bilateral inguinal lymph nodes were not palpable.



**Fig. 1: External genital examination showed enlarged left testis and the mass was present over posterior aspect of testis**

High-resolution ultrasonography (HR-USG) [Fig. 2] demonstrated an irregular & ill-defined heterogeneous soft tissue mass in the left testis with central hypoechoic areas without any flow detection on color Doppler. The remaining tissue at the periphery and within the testis was more hyperechoic on ultrasonography (USG), with internal flow detection and a normal right testis.



**Fig. 2: High-resolution Ultrasonography showed irregular ill-defined in heterogeneous soft tissue mass in the left testis with central hypoechoic areas without any flow detection**

Patient was initially prescribed antibiotics, but his symptoms persisted, with increase in size of the swelling and pain. Suspecting malignancy, alpha fetoprotein (AFP), HCG and serum LDH were advised, which were negative. Urine routine and microscopic examination was normal. To rule out tuberculosis, the patient was referred to our side. Tuberculin skin test, chest X-ray, fine needle aspiration cytology (FNAC) and biopsy for histo-pathological examination (HPE) was advised to rule out tuberculosis. Tuberculin skin test was suggestive of 16X15 mm. induration. Histopathological examination from the mass lesion showed a walled fibro-collagenous cyst along with focal area of necrosis. The fibrous stroma is infiltrated with chronic lympho-mononuclear infiltrates along with granulomas comprising of epithelioid cells histiocytes and lymphocytes. Chest X-ray, kidney function test, liver function tests, semen analysis were found to be normal. Screening tests for Human Immuno deficiency virus and syphilis were negative. The laboratory data were normal except for slightly elevated ESR and CRP. Tubercular etiology was suspected based on clinical presentation, scrotal USG findings and histo-pathological examination of the biopsy material. All these features were corroborating with a diagnosis of TB. The biopsy sample was negative for acid-fast bacilli. There was no evidence of active pleuroparenchymal involvement on the chest radiograph.

Treatment was started under the Revised National Tuberculosis control programme (RNTCP) as extrapulmonary TB. The patient was treated with category-I ATT including Rifampicin (450 mg), Isoniazid (300 mg), Ethambutol (800 mg) and Pyrazinamide (1500 mg) for two months followed by a continuous phase with Rifampicin (450 mg) and Isoniazid (300 mg) for four months. On follow-up visit at six months of therapy HR-USG scrotum was done (Fig. 3) which was suggestive of bilateral normal testis in size, shape, and position with only few ill-defined hypoechoic area with calcifications were present. He improved clinically with reduction of local swelling and tenderness and had a clinical course of continuous improvement and ATT was stopped at the end of six months. Besides, he was advised to follow-up regularly in the OPD.



**Fig. 3: At six months of therapy HR-USG scrotum suggestive of bilateral normal testis in size only few ill-defined hypoechoic areas with calcification were seen**

### Discussion

GT is the third commonest manifestation of extrapulmonary TB. TB of the testis is rare; occurring in about 3-8% of patients with GT. Isolated TB of the testis without epididymal involvement, like in our case is very rare.

Primary extrapulmonary TB presenting as TB of testis being a rare form of TB could lead to a possible misdiagnosis and/or thus may result in delayed management. It requires a high index of suspicion in treating physicians to diagnose and treat such cases, especially in endemic countries [4]. With reports of drug resistant primary extrapulmonary cases, it is very important to promptly diagnose and treat such cases [4,5].

Testicular involvement usually is the result of direct extension from the epididymis, and scrotal involvement suggests local extra testicular extension of

the disease process [6]. Symptoms of the disease are usually insidious and progressive, often mimicking tumors, cyst and other infections. Male GT is also associated with pulmonary TB in about 34% cases and in renal tuberculosis about 64% cases [7]. There was no pulmonary and renal involvement in our case. The diagnosis of extrapulmonary TB can be quite challenging due to the lack of adequate sample amounts or volumes; the apportioning of the sample for various diagnostic tests (histology/cytology, biochemical analysis, microbiology, and PCR), resulting in non-uniform distribution of microorganisms; the paucibacillary nature of the specimens; and the presence of inhibitors that undermine the performance of nucleic acid amplification-based techniques.

In diagnosing extrapulmonary TB, it is necessary to perform comprehensive evaluations, including radiology, histology, cytology and microbiological investigations. Clinically patients with GT present with a painless or slightly painful testicular mass [8].

Hence, tubercular etiology should be one of the differential diagnoses in patients presenting with scrotal swelling. Early diagnosis followed by ATT will prevent further complications.

**Conflicts of interest:** None declared

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