

### A rare case of isolated tuberculous epididymitis in a young man

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#### Abstract

Genitourinary tuberculosis is the second most common extrapulmonary tuberculosis (ETB), after lymph nodes. Isolated tuberculous epididymitis (ITE) is a rare entity among genitourinary tuberculosis and is defined as epididymitis without clinical evidence of either renal or prostate involvement. We present a case of epididymal tuberculosis in a 26 year old male which presented as a right scrotal mass. We discussed this case to emphasize that tuberculous etiology should also be considered in the differential diagnosis of scrotal mass besides malignancy, and an image guided fine needle aspiration cytology (FNAC) and stain for acid fast bacilli (AFB) play crucial role in diagnosis and treatment.

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#### Introduction

Genitourinary tuberculosis (GUTB) contributes to 30% of extrapulmonary tuberculosis and is a major health problem in India. Epididymal involvement accounts for only about 20% of genitourinary TB. It has been postulated that TB epididymitis almost always results from a tuberculous lesion in the prostate, which is usually secondary to renal TB [1]. Isolated tuberculous epididymitis (ITE) without evidence of renal involvement is, therefore rare and difficult to diagnose. However, ITE may present with a clinical picture similar to that of a scrotal neoplasm [2].

Ultrasound guided FNAC has low risk of complications, performable in outpatient departments, repeatable and useful for multiple lesions [3]. Though ultrasound is able to differentiate neoplastic lesion from abscess but cannot differentiate tuberculous from non-tuberculous suppurative lesions. ITE, if diagnosed correctly, can potentially be cured by anti-TB medications, and surgical resection is usually reserved for those patients who do not respond to medical treatment [4]. Here, we present a case of isolated epididymal tuberculosis, which presented as a right scrotal mass in a 26 year old male.

#### Cases Report

A 26-year-old man presented to the outpatient Medicine department, Yashoda Hospital, Malakpet, Hyderabad (India), with a history of rapidly growing painful right sided scrotal mass over his right testicle for 6 weeks. The patient received treatment for non-specific epididymo-orchitis at another center, but regression was not observed and advised to do surgery.

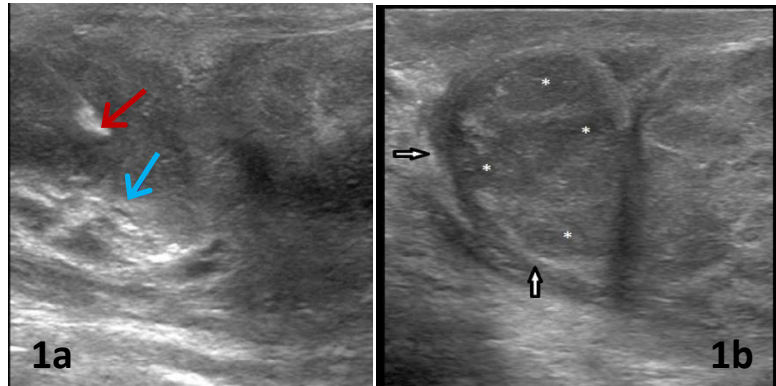
On physical examination, tender mass of the right epididymis; it is observed adhered to the testis with an irregular surface. The overlying skin was intact with no erythema. Examination revealed no signs of lymphadenopathy in the groin region. There were no signs of a direct or indirect hernia. The soft prostate was palpable by digital rectal examination, without any abnormal findings. The patient did not demonstrate any laboratory signs of inflammation. Laboratory tests namely complete blood and platelets counts, prothrombin time, partial and thromboplastin levels were within normal limits. ESR was elevated (58 mm) at the end of one hour. Urinalysis was normal. Prostate specific antigen (PSA), alphafetoprotein, beta-human chorionic gonadotropin and lactic dehydrogenase (LDH) were within normal ranges. Mantoux test was also negative. Chest X-ray was clear.

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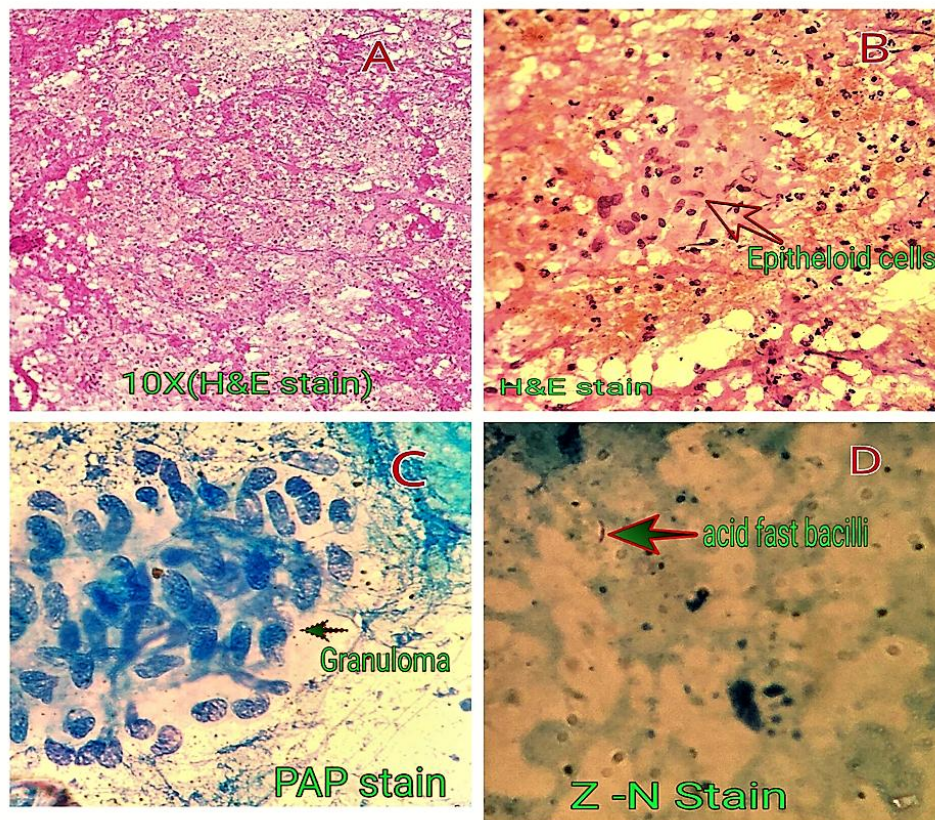
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Scrotal ultrasonography (USG) showed enlarged epididymis with marked heterogenous ecotexture.

Ultrasound guided FNAC was performed with needle no.23 (Figure 1a & 1b).



**Fig-1a.** Enlarged epididymis (blue arrow) with ultrasound guided needle within (red arrow); **1b.** Enlarged epididymis (arrow) with heterogenous echotexture (\*).



**Fig-2.** Photomicrograph of stained aspirated material obtained from right epididymal mass. A: H & E stain showing caseation necrosis, nuclear debris (10x); B: H&E stain showing epithelioid cells in loose clusters (red arrow) (10X); C: PAP stain showing granuloma (green arrow; 40x); D: ZN stain showing positive acid fast bacilli (green arrow).

Ultrasound guided fine needle aspiration of right epididymis was performed with needle number 23 and scanty yellowish pus like material was aspirated. Cytological examination of aspirated material by hematoxylin and eosin (H&E) and Pap stains revealed caseous necrotic material, nuclear debris, histiocytes and few granulomas consisting of epithelioid cells (Fig-2A, B & C). Ziehl-Neelson (ZN) stain showed many acid fast bacilli (Fig-2D). Therefore, it was diagnosed as a case of tuberculous epididymitis. The patient was treated initially with isoniazid (INH) 300mg, Rifampin (RMP) 600mg, Pyrazinamide (PZA) 2000mg and Ethambutol (EMB) 1200mg daily for two months. Then, INH and RMP continued for further 6 months.

### Discussion

Tuberculosis is a disease, which can involve any part of male reproductive system, including the epididymis, vas deference, seminal vesicle, prostate and least commonly the testis. ITE is more common in younger adults. Human immunodeficiency virus infection may increase the risk of genitourinary TB. Kidneys are often the primary organs infected by tubercule bacilli and then spread down the ureters into the bladder. The infecting organism, *M. tuberculosis*, reaches the epididymis by retrograde extension from the prostate and seminal vesicles, but lymphatic and hematogeneous spread are also possible [5].

The most common clinical presentation of ITE is painful scrotal swelling (40%), followed by scrotal sinus (20%), acute epididymo-orchitis (10%), infertility (10%), and hematospermia (5%) [6]. Interestingly, painless scrotal mass has been described as a common symptom in some case reports of tuberculous epididymitis (not ITE) Irritative voiding symptoms are not as commonly associated with ITE as they are with other genitourinary tuberculosis. ITE typically occurs unilaterally, but a rate of bilateral involvement of 12.5% has been reported. There is no specific laboratory investigation for genitourinary tuberculosis, especially for tuberculous epididymitis, where urine cultures can be negative for bacilli in half of the specimens and there are no clinical symptoms from other organs or systems. Therefore, its diagnosis is difficult [7].

Imaging studies may show diffuse or focal heterogeneous lesions in the enlarged epididymis, with or without hydrocele, septation, extra-testicular calcification, scrotal abscess, or scrotal sinus tract, which are also common findings of other chronic inflammatory processes or testicular tumor. A definitive diagnosis of ITE is usually based on examination of material obtained by fine needle aspiration or surgical resection of the epididymis [8].

In our case, ultrasound guided FNAC with smear for AFB played a crucial role in diagnosis. It is an outpatient minimal invasive procedure and helps in diagnosing the pathology and nature of epididymal masses without the complication of implantation. Therefore, all patients, especially young men with a suspected epididymo-testicular lesion where differential diagnosis between a scrotal tumor and GUTB is particularly difficult should be further investigated with a fine-needle aspiration.

ITE is potentially curable with anti-TB medications, consisting of RMP, INH, EMB, and PZA. The suggested duration of therapy varies from 2 months to 2 years, although a regimen of 9 to 12 months is generally accepted. Intratunical rifampin injection has been suggested as an effective alternative therapy that may enable the side effects of oral therapy to be avoided [9]. According to European Urology Guidelines, treatment of uncomplicated GUTB consists of the combination of either three anti-TB drugs (INH, RMP, EMB or streptomycin) given daily for a period of three months followed by two drugs (INH and RMP) for the next three months, or an initial four-drugs regimen (INH, RMP, EMB and PZA) for two months followed by INH and RMP for four more months [10]. However, some authors recommend surgical intervention if there is no sign of resolution within 2 months or if an intra-scrotal abscess is identified. Surgical resection is usually reserved for those patients who do not respond to medical therapy.

### Conclusion

Although the possibility of a scrotal neoplasm is high in young men presenting with swollen testicle, a careful diagnostic work-up like minimally invasive diagnostic approaches such as fine needle biopsy is important to avoid unnecessary and

inadvertent epididymo-orchectomy. Clinicians should also be aware of the case of ITE, an entity that can be cured by anti-tuberculous medications if diagnosed in an incipient phase.

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