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Case Report

# A Rare Case Report of an Extra Pulmonary Tuberculosis: Testicular Tuberculosis

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## Abstract

Testicular tuberculosis (TB) is a rare form of genitourinary TB. It presents as a painless or slightly painful scrotal swelling and so it is difficult to differentiate from typical epididymo-orchitis or other conditions such as tumor or infraction. Middle-aged males, especially of 20–40 years of age are most commonly affected, and presented with painful or painless scrotal swelling with or without discharging sinus. Epididymal involvement is usually seen in testicular TB. Ultrasound (USG) and USG-guided fine needle aspiration cytology of testicular swelling for the diagnosis was done, CBNAAT of aspirated fluid of testicular swelling confirm the diagnosis. Anti-TB chemotherapy is the mainstay of treatment to ensure the complete resolution of the lesion. However, in very few cases, surgical removal is required for both diagnosis and treatment. Here, we report a very rare case of left sided isolated testicular TB in a 60-year-old male who was completely cured with 6 months regimen of anti-TB chemotherapy.

**Keywords**: Fine needle aspiration cytology, genitourinary tuberculosis, scrotal swelling, ultrasound, CBNAAT.



## INTRODUCTION

*Mycobacterium tuberculosis* is the infective agent which leads to TB and is a part of the *Mycobacterium tuberculosis* complex; approximately 30% of the population are infected with a latent *Mycobacterium tuberculosis* infection (LTBI), with the largest rates of infection situated primarily in India accounting for 26% of global prevalence [1, 2]. Since transmission of the bacterium is through inhalation of respiratory droplets [3], pulmonary tuberculosis is the most common disease sub-type of TB. *Mycobacterium tuberculosis* has a proclivity to affect the lungs first, whereas extra-pulmonary TB comprises up to 15% of cases and occurs secondary to haematogenic or lymphatic dissemination of the bacterium; it can be re-activated at a later stage resulting in symptomatic presentation distal to the lungs [4]. Genitourinary tuberculosis is the second most common form of extra pulmonary tuberculosis. [5] It is more common in males. The most common site of genital TB is the epididymis in men, followed by the seminal vesicles, prostate, testis, and the vas deferens [10]. Commonly, it occurs during disseminated TB, but isolated testicular TB is extremely rare. Testicular TB presents as a painless or slightly painful scrotal mass and so it is difficult to differentiate from typical epididymo-orchitis or other conditions such as tumor or infraction. Middle-aged males, especially of 20–40 years of age are most commonly affected, and presented with painful or painless scrotal swelling with or without discharging sinus. Infertility may occur. Here, we report a rare case of isolated testicular TB in a 60-year-old male patient attending to tertiary care hospital, Rajkot.

## CASE REPORT

A 60-year-old male presented with a painful, left-sided scrotal swelling without any discharging sinus or scrotal ulceration for 2 months. There was no history of fever, anorexia, and significant weight loss. The patient having habit of chewing tobacco since 35 years. There was no history of DM and hypertension. Patient was known case of bronchial asthma and on medication since so many years.

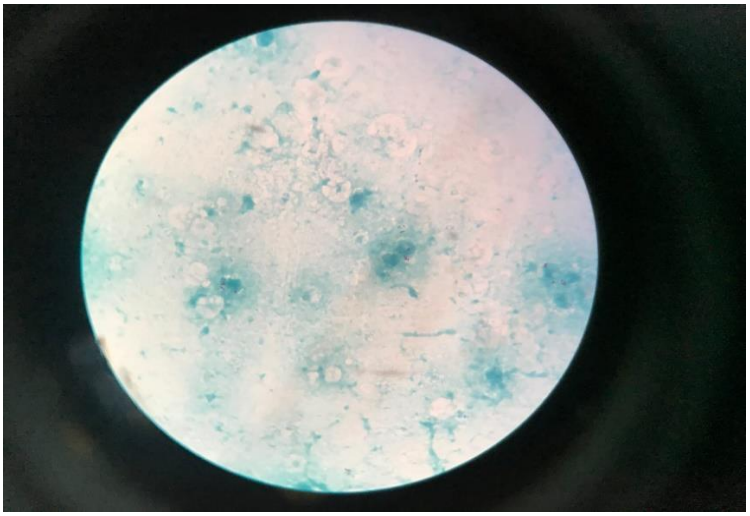
On examination, the general examination revealed no abnormality, except there were multiple, matted, non- tender, firm enlarged inguinal lymph nodes on the left side. His pulse rate was 80 beats/min, regular, respiratory rate, 20 breaths/min, temperature,

97°F, and blood pressure, 120/80 mmHg. Systemic examination revealed no abnormality.

The right scrotum was normal; whereas the left sided testicular swelling was 4 cm × 3 $cm^2$ in size with redness present over surrounding skin, swelling was gradually increasing. It was tender, hard, globular in shape with smooth surface and edges. Pulsation was not visible over swelling and no any movements on coughing. Fluctuation test was positive. The swelling was non-reducible. There was no discharging sinus or scrotal ulceration.

Complete hemogram and blood chemistry including fasting blood glucose were done. All these reports were normal except high ESR which was 36mm. Blood for anti-HIV types 1 and 2 antibodies was non-reactive and HBsAg and HCV were negative. Chest X-ray – posteroanterior view was normal. Mantoux test (5 TU) was positive (16 mm induration after 72 h). USG of scrotum and testes showed that the left epididymis was bulky and heterogeneous with size (38 mm × 16 mm) collection noted within it. Testicular margin appeared ill-defined at the lower pole. On Doppler, increased blood flow was seen within and periphery of the lesion. There was no hydrocele. Left epididymis, spermatic cord, and scrotal skin were normal. Right testis was normal. Multiple, enlarged lymph nodes were noted in the left inguinal region on USG. USG of the abdomen revealed no abnormality. USG-guided FNAC of the left testicular swelling showed occasional ill-formed epithelioid cell granulomas in a background of large amount necrosis and mixed inflammatory cells. Ziehl-Neelsen staining of pus and blood mixed particulate obtained by fine needle aspiration revealed acid-fast bacilli (AFB). CBNAAT of aspirated fluid of testicular swelling confirm the diagnosis of mycobacterium tuberculosis with no rifampicin resistance detected. FNAC of enlarged inguinal lymph nodes on left side showed granulomatous inflammation with caseation. Microscopic and biochemical examination of urine was normal. Hence, the diagnosis was left sided isolated testicular TB with ipsilateral inguinal lymphadenopathy.

As the patient had no past history of anti-TB chemotherapy, category I anti-TB treatment regimen was offered (as no rifampicin resistance detected), six months, short course of the four 1$^{st}$ line drugs to the patient -1. Isoniazid-H, Rifampicin-R, Pyrazinamide-Z, and Ethambutol-E. The Drugs are administered through daily weight band-based doses of fixed dose combinations, consisting of HRZE for intensive phase of 2 months and HRE for continuous phase of four months.



**Acid fast bacilli in ZN stain**

## DISCUSSION

Tuberculosis (TB) is a major health issue worldwide. The disease, caused by Mycobacterium tuberculosis (MTB), is responsible for 1.3 million deaths annually. Incidence of the disease is highest in the developing world. Though TB is less common outside of the developing world, its incidence in developed countries is increasing, especially in immigrant population [6, 7].

TB is a leading cause of death worldwide, especially in the developing countries which are TB endemic zone, like India. Emergence of drug resistance TB and rapid increase in incidence of HIV infection makes the world's scenario further critical. Genitourinary TB is an unusual presentation of TB and comprises 8–15% of EP-TB [8]. Isolated genital involvement is seen in 28% patients of genitourinary TB [9].

Epididymal TB is likely to have invaded surrounding tissues when signs such as epididymal beaded changes and ill-defined epididymis- testis border are present. It is difficult to diagnosis early stage

epididymal tuberculosis. Mechanism of dissemination of tubercle bacilli into the scrotal sac structures is controversial. It is Sbelieved that, in most cases, TB epididymo-orchitis is developed from retrograde spread of tubercle bacilli from the affected urinary tract into the prostate via reflux, followed by canalicular spread to the seminal vesicle, deferent duct, and epididymis [10, 11]. However, TB bacilli may also gain entry via the hematogenous and lymphatic spread. In most cases, testicular involvement is due to local spread or retrograde seeding from the epididymis, and rarely by hematogenous spread [10, 11]. Finding of the AFB on Ziehl-Neelsen staining and CBNAAT in the USG-guided FNAC materials obtained from the scrotal swelling confirms the diagnosis of TB. Surgical treatment combined with preoperative and postoperative chemotherapy is an effective approach to treating this condition.

## CONCLUSION

In isolated testicular tuberculosis, early symptoms are not obvious and cases are typically advanced at the time of diagnosis. Testicular tuberculosis has invaded surrounding tissue by the time it is discovered. Surgical treatment combined with preoperative and postoperative chemotherapy is an effective treatment approach.

## REFERENCES


1. Houben, R. M., & Dodd, P. J. (2016). The global burden of latent tuberculosis infection: a re-estimation using mathematical modelling. *PLoS Med*, 13, e1002152. 10.1371/journal.pmed.1002152
2. World Health Organization: Global tuberculosis report 2020. World Health Organization (ed): World Health Organisation, 2020.
3. Churchyard, G., Kim, P., Shah, N. S., Rustomjee, R., Gandhi, N., Mathema, B., ... & Cardenas, V. (2017). What we know about tuberculosis transmission: an overview. *The Journal of infectious diseases*, *216*(suppl_6), S629-S635. 10.1093/infdis/jix362
4. Viveiros, F., Tente, D., Espiridião, P., Carvalho, A., & Duarte, R. (2009). [Testicular tuberculosis: case report]. *Rev Port Pneumol*, 15, 1193-7. 10.1016/s0873-2159(15)30201-4
5. Wise, G. J., & Marella, V. K. (2003). Genitourinary manifestation of tuberculosis. *Urol Clin North Am*, 30, 111–21. [PubMed] [Google Scholar]
6. Dunn, R. N., & Husien, M. B. (2018). Spinal tuberculosis. *Bone Joint J*, 100-B, 425–31.
7. Rivas-Garcia, A., Sarria-Estrada, S., Torrents-Odin, C., Casas-Gomila, L., & Franquet, E. (2013). Imaging findings of Pott's disease. *Eur Spine J*, 22, S567–78.
8. Hadadi, A., Pourmand, G., & Mehdipour-Aghabagher, B. (2012). Unilateral testicular tuberculosis: Case report. *Andrologia*, 44, 70–2. [PubMed] [Google Scholar]
9. Shah, H., Shah, K., Dixit, R., & Shah, K. V. (2004). Isolated tuberculous epididymo-orchitis. *Indian J Tuberc*, 51, 159–62. [Google Scholar]
10. Wise, G. J., & Shteynshlyuger, A. (2008). An update on lower urinary tract tuberculosis. *Curr Urol Rep*., 9, 305–13. [PubMed] [Google Scholar]
11. Viswaroop, B. S., Kekre, N., & Gopalakrishnan, G. (2005). Isolated tuberculous epididymitis: A review of forty cases. *J Postgrad Med.*, 51, 109–11. [PubMed] [Google Scholar]