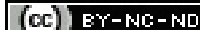


Scrofula Presenting as Tubercular Meningitis: A Neglected Sequelae

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ABSTRACT

Tuberculosis (TB) is a multiorgan disease that can affect any part of the body. Though it is thought to be affecting mainly the pulmonary system, genitourinary TB is a rare but important manifestation of TB. It has been reported in <0.5% of Extrapulmonary Tuberculosis (EPTB). Amongst instances of genitourinary TB, glandular TB is even scarcer. Maximum patients seek medical intervention later in the progression of ailment due to the attached stigma linked with tuberculosis and in view of affected site and part of the body and the reluctance on the patient's side. In the present case report, a 58-year-old male presented to Department of Medicine, with the complaint of a non healing wound on the scrotal region with excoriation since one month and irritability with altered sensorium since a week. Ultimately, it turned out to be a case of tubercular meningitis resulting from a neglected scrofula with neck rigidity, Kernig's and Brudzinski's sign positive. Though many case reports involving tubercular meningitis have been reported, a neglected scrofula remains a rare manifestation of tubercular meningitis.

Keywords: Complication, Extrapulmonary tuberculosis, Scrotal ulcer

CASE REPORT

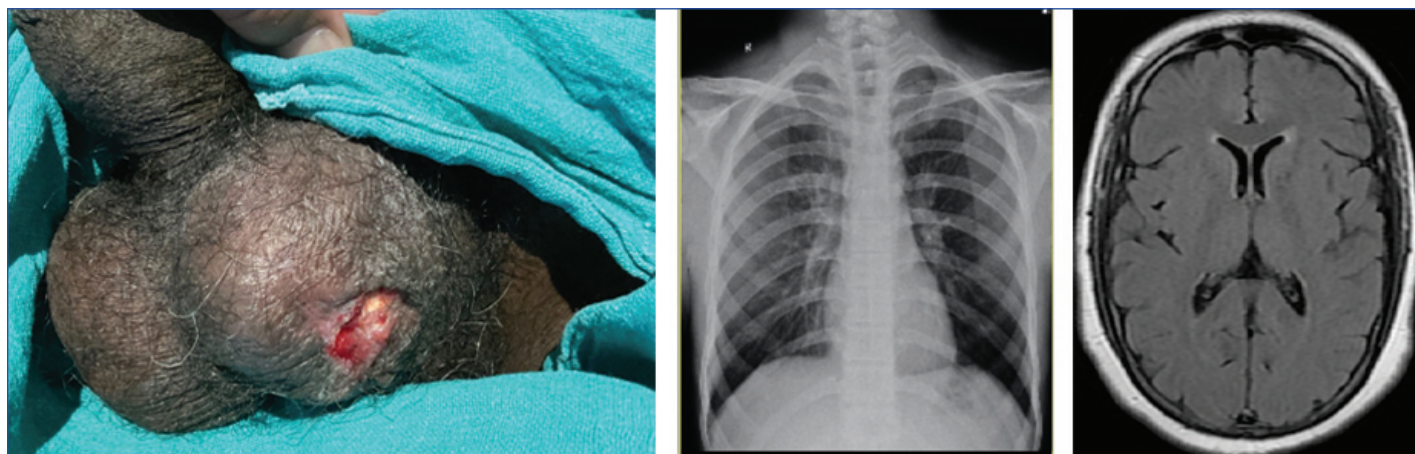
A 58-year-old male reported to Medicine Outpatient Department with the chief complaint of swelling over left scrotal region, a non healing wound with excoriation since one month. Patient also complained of altered sensorium and irritability since seven days. There was no history of fever, cough, cold, abdominal pain, vomiting or loose stool. No previous history of hypertension, diabetes, Tuberculosis (TB) or other chronic illness was reported. There was history of chronic smoking since 20 years with history of smoking one pack per day. There was no history of TB or any other significant illness in the family.

On general examination, patient was conscious but had altered sensorium as he became disoriented, pulse was 88 beats/min, regular in rhythm, blood pressure was 120/80 mmHg in right arm measured while in supine position and SpO₂ was 98% measured while in room air without any oxygen support.

Scrotal swelling was observed while doing palpation. Swelling was found to be rough, non tender, hard, was rising above the mass, not ascribed to the superimposing cutaneous layer, and not trans-illuminable. An ulcer over left side of scrotum measuring approximately 4x3 cm extending from lateral aspect of left scrotum

towards base of scrotum with sloping and undermined margins with inflamed edges and floor being slough with granulation tissue. Right side of appears to be normal on inspection and penis appears to be centrally placed and normal on inspection [Table/Fig-1]. On systemic examination neck rigidity was present, Kernig's and Brudzinski's sign was positive suggestive of meningitis [1]. Rest of the physical examination were unremarkable.

Patient was admitted in Intensive Care Unit (ICU) and further investigations including chest X-ray, Magnetic Resonance Imaging (MRI) brain and blood investigations were carried out. No obvious abnormality was detected in chest X-ray [Table/Fig-2]. Magnetic resonance imaging of brain revealed no obvious abnormality in brain parenchyma [Table/Fig-3]. The Erythrocyte Sedimentation Rate (ESR) was well above the normal levels confirmed by laboratory data (40 mm fall/hour). Full Blood Count (FBC) presented a haemoglobin (Hb) level of 12.7 gm/dL, a White Blood Cell (WBC) total of 38300/mm³ and platelets of 153000/μL count with a WBC disparity presenting 28 neutrophils, 69 lymphocytes, 1 monocyte, 2 eosinophils along with 0 basophils. The test for human immunodeficiency virus (HIV), also known as retroviral assessment test and Venereal Disease Research Laboratory (VDRL) tests were non reactive.



[Table/Fig-1]: Non healing ulcer on left scrotal part. **[Table/Fig-2]:** Chest radiograph showing no abnormality. **[Table/Fig-3]:** Magnetic Resonance Imaging (MRI) Brain showing no obvious abnormality. (Images from left to right).

Swab taken from local genital ulcer showed growth of *Mycobacterium tuberculosis* (MTB) and Cerebrospinal Fluid (CSF) analysis showed white blood cells of 670 cells/ μ m, with lymphocytes 70%, protein 4.6 mg/L, glucose 1.1 mmol with CSF/serum glucose ratio less than 0.5. The CSF tested positive for acid fast bacilli and showed growth of *Mycobacterium* TB on culture. Tzanck smear, Gram's stain, and potassium hydroxide mount, were negative for CSF and local ulcer.

Differential diagnoses of Behcet's ailments and genital tuberculosis were studied for the patient concerned. Patient was diagnosed with tubercular meningitis and was given Antitubercular Therapy (ATT) involving four drugs including rifampicin 600 mg OD pill, tablet isoniazid 300 mg OD, tablet pyrazinamide 1500 mg OD along with tablet ethambutol 800 mg OD administered on daily basis for two months followed by isoniazid 300 mg OD and rifampicin 600 mg OD for 10 months with sanitising and bandaging of the ulcers every alternate day. After 10 days of treatment, ulcer showed healing and patient became conscious and oriented. He was discharged with advice to follow-up in Directly Observed Treatment, Short-course (DOTS) centre for 12 months.

DISCUSSION

Tuberculosis is amongst the leading causes of death due to infectious disease worldwide. Though TB is considered to be a disease primarily of the respiratory system, it involves multiple organs, thus, leading to its wide range of complications. Tuberculosis occurring outside the pulmonary system is known as Extrapulmonary Tuberculosis (EPTB) which is an emerging cause of morbidity and mortality in the developing countries. Usual locations of EPTB are meninges, bones, pleura, lymph nodes and the primogenital tract [2]. Extrapulmonary tuberculosis comprises a little fraction of populace ailing from tuberculosis (TB) (10-15% of the cases) with lymph nodes being the most usual location involved in India [3].

Genitourinary TB is a rare manifestation and has been registered in less than 0.5% of EPTB [4]. It is interesting to note, that only 28% patients of genitourinary TB have secluded genital association [5]. Genitourinary tuberculosis is more prevalent in males with epididymis and scrotal region being the most usual location to be affected. Further various other parts implicated are testis, vas deferens, seminal vesicles and prostate in descending order [6].

Glandular TB is a very rare form of EPTB and is usually a diagnosis of exclusion as it can mimic various pathologies. Tubercular meningitis is a severe disease with high mortality and is thought to be caused due to haematogenous spread from the lungs [7]. It is a gradually progressive disease which involves three clinical stages the prodromal phase, the phase of neurological symptoms and finally the stage of paraesis. Investigations essential for concluding a diagnosis of tubercular meningitis are chest X-ray, CSF analysis and sputum culture. Prompt diagnosis and treatment can prevent mortality and morbidity caused by tubercular meningitis, which, otherwise can prove to be lethal [7].

Tuberculosis (previously known as consumption, phthisis, or wasting) is an contagious disease effected by the action of bacillus *Mycobacterium tuberculosis* (MTB) [8]. *Mycobacterium* TB infects about one third of the world population and kills about three million patients each year and so is the single most important infectious cause of death on Earth. There has being a dramatic increase in TB in the world and especially in Africa due to the emergence of Acquired Immune Deficiency Syndrome (AIDS) [8].

Tubercular meningitis initiates as a primary infection of the lungs which occurs though inhalational route [9]. In the following weeks, the bacteria infects the regional lymph nodes ultimately leading to bacteremia. Once bacteremia sets in, there is haematogenous spread leading to invasion of meninges or the brain parenchyma forming a rich focus where the bacteria remains as dormant form for a long time. In immunosuppressed conditions or with aging, there is reactivation of this rich focus which might result in number of complication's like meningitis, meningoencephalitis or a tuberculoma. There is formation of exudates settling at the base of the brain leading to hydrocephalus, vasculitis or entrapment of various cranial nerves [9].

The name "genitourinary tuberculosis" was first proposed by Hans Wildbolz in 1937 [10]. It is a widespread differed expression of prior pulmonary tuberculosis. The genitourinary path association in tuberculosis is uncommon. It might be owing to revival of acid-fast bacilli, allergic reaction to the bacterial antigens, direct immunisation from infected digits, or from a disease ridden partner via sexual contact [11]. The locations of involvement in downward order are epididymis, seminal vesicles, prostate, testis and vas deferens [12]. Tuberculosis of the scrotum and male genitalia is very uncommon.

In present case, the patient had no history of long term and persisting cough or weight loss. He did not work in a place that would incline him towards such ailments. Although, the patient was a smoker, but there was no pulmonary TB features such as apical infiltration visible on imaging.

In such a case, with no visible risk factors or signs for TB other than a neglected scrotal ulcer, the physicians vigilance is of paramount importance. Cerebrospinal fluid analysis and growth of *Mycobacterium* in the ulcer swab suggested TB as diagnosis and patient responded well to antitubercular therapy.

Hence, it is important to focus on neglected symptoms like the genital ulcer in the present case which might have been a tell-tale sign on tubercular meningitis.

CONCLUSION(S)

Even though it is very rare, tuberculosis should be taken into account in the differential diagnosis of a long term, chronic, persisting and non healing ulcer over the genital area, especially in endemic parts like India where tuberculosis is highly predominant. In the present case, the patient presented with a neglected scrofula which was a warning sign of TB overlooked by the patient since a month. Hence, the physicians should pay utmost importance to such neglected lesions which might be a tell-tale sign of TB, in the present case tubercular meningitis.

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