

Skin, ear and testis – unusual sites of tuberculosis

Localizari rare ale tuberculozei extrapulmonare: cutanată, auriculară și testiculară

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Abstract

Pulmonary localization is the most common site of tuberculosis (TB) and the most contagious form. Extrapulmonary tuberculosis with the rarest and most unexpected localizations represents a significant proportion of all cases of tuberculosis and remains an important public health problem. We report three unusual TB locations: skin, ear and testis occurred in three immunocompetent patients. In the case of skin and testicular lesions, diagnosis was based on pathological confirmation of granulomas with caseous necrosis. In the third case the diagnosis was made possible by identification of positive Acid-Fast Bacilli smear and positive culture from othc drainage fluid. The outcome at all three patients was good with antituberculous treatment. These unusual localization of tuberculosis also highlight the possibility of extrapulmonary tuberculosis as a differential diagnosis in many common diseases.
Keywords: extrapulmonary tuberculosis, immunocompetent host, unusual sites

Rezumat

Tuberculoza pulmonară este cea mai întâlnită formă de tuberculoză dar și cea mai contagioasă. Tuberculoza extrapulmonară incluzând localizări din cele mai rare și mai neașteptate, încă reprezintă o proporție semnificativă din totalitatea cazurilor de tuberculoză și rămâne astfel o problemă importantă de sănătate publică. Descriem trei localizări neobișnuite ale tuberculozei: cutanată, auriculară și testiculară la trei gazde imunocompetente. În cazul afectării cutanate și testiculare diagnosticul a fost posibil datorită confirmării histopatologice prin evidențierea granuloamelor cu necroză caseoasă centrală. În cel de-al treilea caz diagnosticul a fost posibil prin identificarea bacililor acid-alcoolorezistenți în microscopie și ulterior culturi pozitive din secrețiile otice. Evoluția sub tratament antituberculos standard a fost favorabilă în toate cele trei cazuri. Aceste localizări neobișnuite ale tuberculozei evidențiază posibilitatea tuberculozei extrapulmonare ca și diagnostic diferențial în multe alte afecțiuni.
Cuvinte-cheie: tuberculoză extrapulmonară, imunocompetent, forme atipice

Introduction

According to the World Health Organization (WHO) there were 9 million new cases of tuberculosis and 1.5 million deaths from this disease in 2013. About one-third of world's population has latent tuberculosis, this means that people have been infected by Mycobacterium tuberculosis but are not ill at current time⁽¹⁾. People infected with TB bacteria have a lifetime risk of falling ill with tuberculosis of 10%⁽²⁾. Tuberculosis is a multisystemic disease with various symptoms and manifestations and can affect any organ or tissue. Lung involvement is the most common and highly contagious form. Extrapulmonary tuberculosis with its rarest and most unexpected localizations is still a significant proportion of all cases of tuberculosis with difficult positive diagnosis and remains an important public health problem.

Cases Report:

Case 1. A 51-years-old man, former smoker – 20 Packs-Year, with a medical history of hand trauma (left hand laceration), developed painless skin lesion on the back of the left hand. Apart from the skin lesion, physical examination and other tests were normal (chest X-ray, negative sputum culture for M. Tuberculosis, complete blood count and blood chemistry). The skin lesion evolved with vesicle-blister formation. Skin biopsy showed granulomatous lesions with central caseous

necrosis, which confirms the diagnosis of cutaneous tuberculosis. The outcome was favorable with disappearance of the skin lesion under antituberculosis treatment for a total of six months. No side effects to treatment were noted.

Discussion

Cutaneous tuberculosis is a rare form of TB that require biopsy for positive diagnosis due to the fact that the lesion pattern is not specific for TB occurs rarely despite high prevalence of tuberculosis and present various presentations. According to the route of infection, cutaneous TB is classified in exogenous infection and endogenous reactivations⁽³⁾. Exogenous infection occurs after the direct inoculation of Mycobacterium tuberculosis into the skin of a person susceptible to infection. The particular form of skin tuberculosis due to exogenous infections are tuberculous chancre, tuberculosis verrucosa cutis and lupus vulgaris^(4,5). Endogenous reactivation occurs in patients who were previously infected and M. Tuberculosis spread into the body by lymphatic spread, hematogenous spread, or contiguous extension^(4,5).

Case 2. A 39 years old woman, non-smoker, with no occupational exposure to respiratory hazards, experienced mucopurulent otorrhea, left ear pain and hearing loss, which did not improve after successive antibiotic



Figure 1. TB skin lesion before treatment

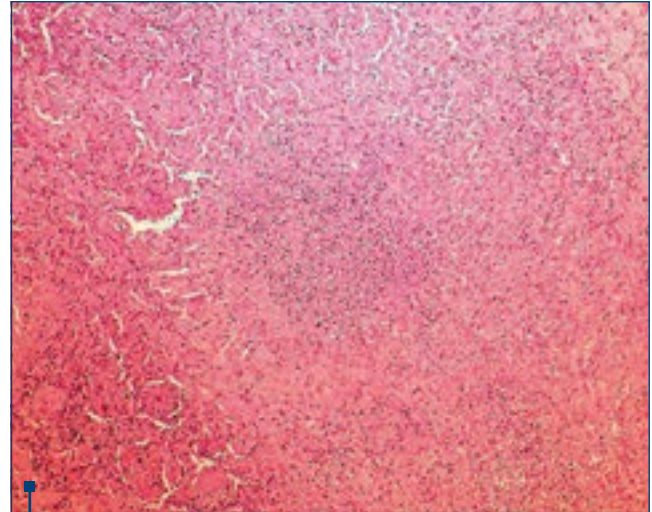


Figure 2. Skin biopsy with central caseous necrosis

regimens for 3 months. The patient had moderate anemia (Hgb = 9.5 g / dL) and inflammatory syndrome (ERS = 40 mmHg); all other biological parameters were normal. The chest X-ray was normal and the sputum culture for *M. Tuberculosis* was negative. Bacteriological examination of ear secretions showed Acid Fast Bacilli on smears. The cultures were positive. Shortly after initiating standard antituberculous treatment, the patient developed hepatic cytolysis. Pyrazinamide was withdrawn, and after patient was switched to Streptomycin. During treatment with Streptomycin, right ear hearing loss occurred (confirmed by the audiogram), and the patient was switched to Ofloxacin, therefore leading to prolonged TB treatment (up to 8 months). The clinical outcome was favorable (otorrhea and ear pain remission), however with permanent sequelae (bilateral hearing loss).

Discussion

Because TB otomastoiditis is extremely rare, positive diagnosis is seldom considered in chronic otitis media. Often, it evolves for long periods of time and is treated with various antibiotics. Given the possible progression towards irreversible destructive lesions, this condition requires an early and accurate diagnosis, as well as rapid start of specific TB therapy ⁽⁶⁾.

Case 3. A 47 years old male, former smoker, with a medical history of respiratory bronchiolitis associated to interstitial lung disease diagnosed after lung biopsy and treated with corticotherapy and chronic respiratory failure, on long term ambulatory oxygenotherapy, experienced right testicle pain for 6 months, followed by swelling but with no adjacent skin involvement. Due to possible testicle tumour, right orchidectomy was performed. Histopathology examination from the resected yellow necrotic piece (of approximately 6.5 cm/4.5 cm) showed multiple granulomas with central caseous necrosis, therefore suggesting testicle and epididymary tuberculosis. Six months standard TB treatment was started with a good clinical outcome.



Figure 3. Skin after treatment

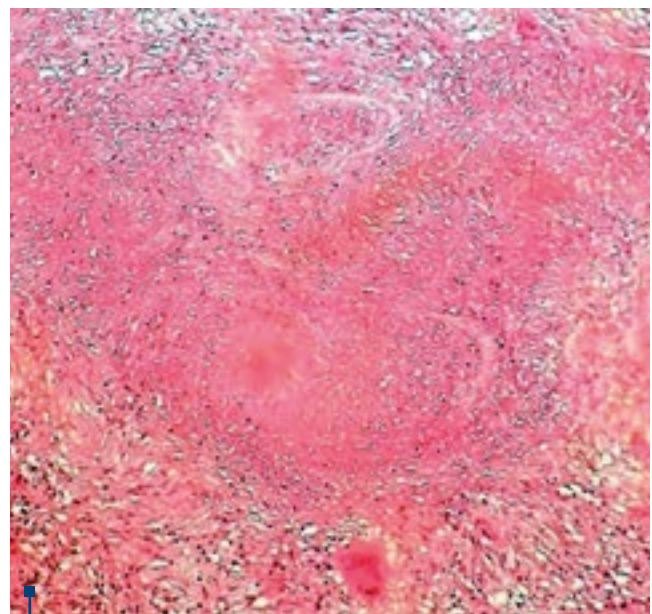


Figure 3. Testicular biopsy with granulomas lesion and caseous necrosis

Discussion

Testicular tuberculosis is rare, occurring in approximately 3% of patients with genital TB. It is often clinically indistinguishable from testicular tumors or infarction and may even mimic testicular torsion. Men aged 20 to 50 years old are most commonly affected and often present with painful or painless scrotum enlargement. TB post-primary dissemination to the testis may result in secondary epididymis infection ^(7,8).

Conclusions

Worldwide, it is estimated that between 10 and 25% of tuberculosis infections are located in extrapulmonary sites in immunocompetent hosts and also accounts for more than 50% of the TB cases in HIV-positive persons ⁽¹⁾. These rare infection locations are especially common in immunocompromised hosts (particularly HIV infected people – therefore being much more common in countries with high HIV prevalence), or in children. The risk of extrapulmonary TB increases with advanced immunosuppression. While extrapulmonary TB cases are rare,

they are increasing over the years despite the falling of TB incidence. This is seen both globally and in our country ^(9,10). All the patients described above were immunocompetent, with no medical history of signs of TB infection (no fever, no night sweats, cough or weight loss). In addition, they denied any personal history of M. Tuberculosis infection and also they didn't have any known contact with people suffering from pulmonary TB. All of them had normal chest X-ray, with no signs of active TB and negative Acid-Fast Bacilli smear and sputum culture from sputum. After positive diagnosis (by biopsy or bacteriological exams), standard TB treatment approved by the National Tuberculosis Control Program was quickly initiated. After the treatment was completed they all were declared cured with complete regression and no disease relapse.

Although extrapulmonary TB localizations are rare, considering the high incidence of this infection, clinicians should consider tuberculosis as differential diagnosis. This would increase the opportunity of early diagnosis and adequate early management. ■

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