

Cystic Tuberculosis of Superior Lateral Part of the Left Thigh

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Abstract- As dissemination of Tuberculosis (TB) to soft tissue is not a usual finding, sometimes it is not considered for differential diagnosis and, if so, is overlooked by most health care professionals. Although rare, TB should be considered in the differential diagnosis of cysts of the thigh, especially in endemic areas. We report the case of an 80-year-old female presented with cyst with purulent discharge in her lateral left thigh that was persistent to other surgical and antibiotic treatments. Polymerase chain reaction (PCR) showed positive results for TB. Anti-tubercular therapy had promising results. Our case serves to highlight the importance of considering a reactivated TB infection in individuals with chronic discharge, especially if symptoms are not classic or fail to respond to conventional therapy. Histological study and MRI are useful tools to guide diagnosis, with confirmation provided by PCR.

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Introduction

Tuberculosis (TB) is a major public health problem in developing countries (1). Iran's ministry of health's plan for prevention and treatment of TB has succeeded, but Iran's long borders with two countries with a high prevalence of TB (Pakistan and Afghanistan) in the east changes the TB prevalence in Iran (2). TB is an infectious disease caused by the bacillus *Mycobacterium tuberculosis*. It typically affects the lungs, but it can also affect any organ of the body (extrapulmonary TB). Extrapulmonary involvement is seen in approximately 14% of patients. Also TB as a disease entity has diversified in its clinical presentations with emergence of rarer and unusual forms of extrapulmonary disease (3,4). As dissemination of TB to soft tissue is not a usual finding, sometimes it is not considered for differential diagnosis.

In this article, we would like to report an interesting case of TB involving the soft tissue. We report the case of an 80-year-old female presented with cyst with purulent discharge in her lateral left thigh that was persistent to other surgical and antibiotic treatments.

Case Report

An 80-year-old female patient was referred to our institute as a cyst with purulent discharge in the superior

lateral part of the left thigh. Our patient lived in a nursing home and had no complaint except hypertension under treatment with amlodipine 5 mg twice daily. Physical examination revealed normal vital signs, and chest and cardiovascular examination were unremarkable. According to the history taken from the patient, there was an old cyst in the same part, which was removed by surgery about 20 years ago. There was no data about the cyst pathology. Despite surgical and empirical antibiotic treatments during six years later, intermittently discharging sinus has persisted. In June 2016, due to the cyst recurrence, she received several.

She received courses of antibiotics before presenting to us, but her symptoms did not resolve. The patient was hospitalized in January 2018 in our institute. The cyst was debrided again, and usual antibiotics were prescribed. She complained of dry cough and chronic fatigue, but she denied any history of weight loss and night sweats.

Other than elevated erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP) (ESR=74 mm/hr, CRP=13 mg/L), the rest of the hematological parameters were within the normal range. Total white blood cell (WBC) count was $6500 \times 10^9/L$ (69% neutrophils and 17% lymphocytes) and Hb 12.1 g/L (MCV:88). Other laboratory values such as liver function tests (ALT, AST, and ALP), electrolyte (Na: 140 mEq/L and K: 6 mEq/L), blood urea nitrogen (BUN) and creatinine level (BUN: 20 mg/dL and Cr: 1.2 mg/dL) and urinalysis (UA) were all

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within normal limits. Rheumatoid Factor was negative, and the purified protein derivative (PPD) was 7 mm.

Magnetic resonance imaging (MRI) of the pelvis and thigh revealed a well-margined predominantly cystic lesion (hyperintense on T1-weighted [T1W] and markedly hyperintense on T2-weighted [T2W] images) in the superior lateral aspect of the left upper thigh involving the tensor fasciae latae (TFL) (Figure 1).

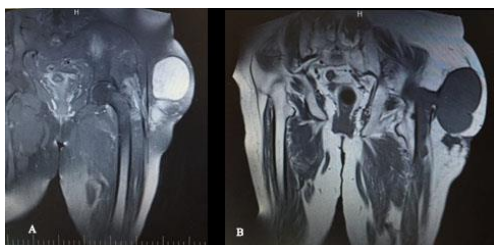


Figure 1. MRI of the left thigh demonstrating solitary cystic lesion with ring enhancement in the superior lateral part of the left thigh. A: T1-weighted [T1W] and B: T2-weighted [T2W] images

Microscopy of gram staining of the wound fluid revealed gram-positive cocci. No fungal element was found from the lesions by direct microscopy at this stage. Following the surgery, Vancomycin 1 gr twice daily was prescribed for her. Due to no recovery and a continuous discharge of the wound, the wound site was debrided by a surgeon, and the sample was sent for both pathological assessment and Rapid Molecular Tests (with polymerase chain reaction (PCR) method).

After the cyst drainage, a biopsy from the cyst wall was sent to the laboratory for pathology examination. Cytology from percutaneous needle aspiration of the cystic lesion showed amorphous eosinophilic material and necrotic tissue with calcium deposition and caseating granulomatous reaction, which were typical of TB infection. Ziehl-Neelsen staining for acid-fast bacillus (AFB) was negative, but PCR identified *Mycobacterium tuberculosis* DNA in the patient's purulent discharge. Hence, a diagnosis of mycobacterial infection of the soft tissue was made.

Anti TB regimen composed of isoniazid, rifampin, ethambutol, pyrazinamide was prescribed. Following the anti TB treatment, the wound site was closed. Subsequently. The blood inflammatory indices, such as ESR and plasma CRP, were normalized. Successful treatment by anti-TB drugs resulted in a small residue in the superior lateral part of the left thigh. The patient is still receiving anti-TB treatment and is asymptomatic on follow-up, and no relapse is noted since the anti TB treatment was started.

Discussion

The national TB statistics reported by the Centers for Disease Control and Prevention show that in 2017, a total of 9,051 new and relapse TB cases and incidence rates 14 (11-18) per 100000 populations were reported in the Islamic Republic of Iran. This was a decline of 1.7% from 2016. These statistics indicate that even though the rates of TB infection are downtrending, this infection is still a potential health concern (5).

TB of the soft tissue is a rare entity, and its occurrence in an immune-competent person is still rare (6,7). In fact, only a few cases of the tubercular cyst are described in literature until date, and such a presentation rarely brings TB into the spectrum of differential diagnosis (8-11). Accurate diagnosis of cystic TB is difficult due to its rare incidence, atypical clinical presentation, and nonspecific radiological findings. Soft tissue TB cyst can often be confused with hydatid cyst, pyogenic abscess, or synovitis (12).

Our case serves to highlight the importance of considering a reactivated TB infection in individuals with chronic discharge, especially if symptoms are not classic or fail to respond to conventional therapy. In other words, physicians must consider TB in the differential diagnosis of soft tissue swellings especially in the elderly. Timely diagnosis not only offers cure but also eliminates unnecessary surgical interventions (7). Delayed treatment can result in significant morbidity (arising from frequent antibiotics prescriptions and TB dissemination) and mortality (13).

In our patient, left thigh discharge had started 20 years prior to presentation. He had adequate contact with health care providers and was treated for chronic soft tissue infection with antibiotics and surgery. The absence of any other symptoms like some constitutional symptoms such as weight loss and night sweats further limited a timely diagnosis. The indolent nature of the disease and lack of constitutional symptoms causes late diagnosis.

Although rare, tuberculosis should be considered in the differential diagnosis of cysts of the thigh, especially in endemic areas. Our case serves to highlight the importance of considering a reactivated tuberculosis infection in individuals with chronic discharge, especially if symptoms are not classic or fail to respond to conventional therapy. Histological study and MRI are useful tools to guide diagnosis, with confirmation provided by PCR.

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Cystic tuberculosis of the thigh

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