



Chronic Inflammation of the Tibiotalar Joint with a Lateral Malleolar Fistula: A Rare Presentation of Tuberculosis

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Authors' contributions

This work was carried out in collaboration between both authors. Author ZA designed the study, wrote the protocol, and wrote the first draft of the manuscript. Author FA managed the analyses of the study and the literature searches. Both authors read and approved the final manuscript.

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Case Study

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ABSTRACT

Skeletal tuberculosis accounts for 1-3% of all tuberculosis cases and 10-11% of extra-pulmonary tuberculosis. Ankle and foot involvement presents in less than 5% of all skeletal tuberculosis. Primary tuberculous pyomyositis, bursitis, and tenosynovitis are rare and account for about 1% of skeletal tuberculosis. Joint involvement of tuberculosis most commonly manifests as a monoarthritis of weight-bearing joints in the hip or the knee. Trauma has been associated with tuberculosis in 30-50% of cases. As the elderly population is growing, the rate of tuberculosis in particular extra-pulmonary and atypical forms of disease has increased among older adults. We report a 79-year-old woman complaining of chronic ankle pain, swelling and a lateral malleolar fistula. Her past medical and family histories revealed no previous tuberculosis. An ankle strain of her left ankle after slipping had occurred prior to her problem. There was no evidence of concomitant tuberculosis at other sites. The PPD test was negative. The combination of indolent

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onset of symptoms and compatible MRI findings strongly suggested the diagnosis. Ankle synovial biopsy showed necrotising granulomatous inflammation and PCR test detected mycobacterium tuberculosis genome in the synovial tissue. A careful suspicion of the diagnosis of tuberculosis is paramount in patients with chronic mono-articular arthritis, even in absence of a positive tuberculin test or abnormalities on chest radiograph.

Keywords: Joint tuberculosis; skeletal tuberculosis; extra-pulmonary tuberculosis; chronic arthritis.

1. INTRODUCTION

Worldwide, approximately 10% to 11% of extra pulmonary tuberculosis (TB) involves the bone and joint [1]. In endemic regions of the developing world, TB arthritis is mostly a disease of children and young adults, whereas in other regions, older adult and immune Compromised hosts are predominantly afflicted [2]. Risk Factor for TB arthritis include age older than 65 years, female sex, immigration from regions with high TB endemicity, a low socioeconomic class, incarceration, alcohol abuse, debilitating illness, intravenous drug use immunosuppressive drug therapy, HIV infection and pre-existing joint disease [2].

The microorganism usually spreads through the bloodstream to the synovium in TB arthritis [2].

Foot and ankle TB is quite rare with a frequency 5-10% of osteoarticular tuberculosis [3,4]. Here we report a case of TB arthritis involving the ankle joint.

2. CASE PRESENTATION

A 79-years-old female was admitted in the infection disease department with 4-month history of the left ankle pain and swelling. She had a history of recent ankle strain that was taking home remedies. She complained of the left swollen ankle. On exam, she was afebrile but a sinus fistula with purulent secretion in the lateral malleolus was present along with soft tissue swelling surrounding ankle. The motion range of her right ankle was decreased. The x-Ray showed sclerosis of the distal of tibia and decrease articular space in tibiotalar joint (Fig.1).

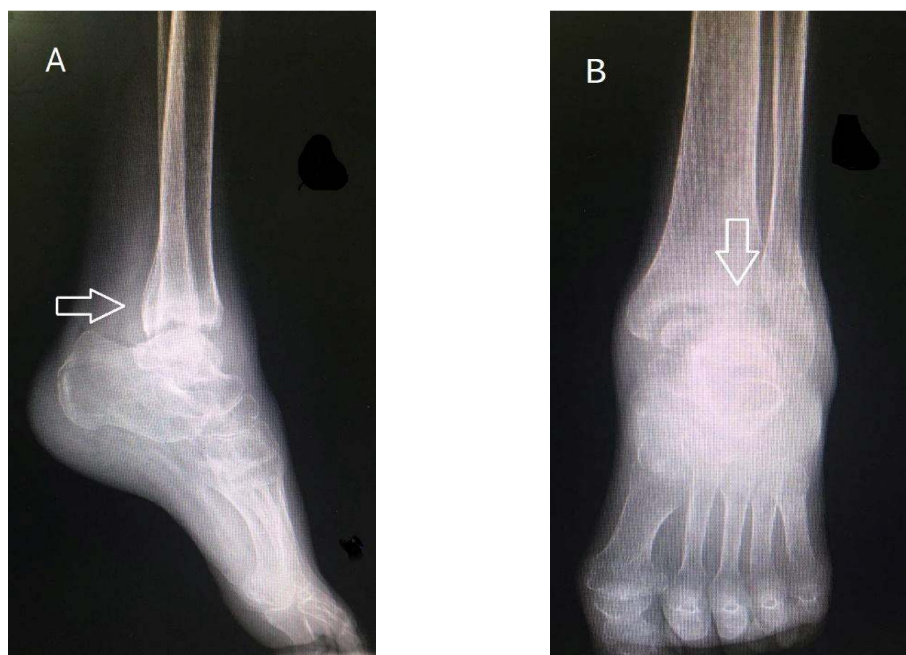


Fig. 1. Sclerosis of the distal of tibia and decrease articular space in tibiotalar joint. (A, B) X-Ray of left foot and ankle

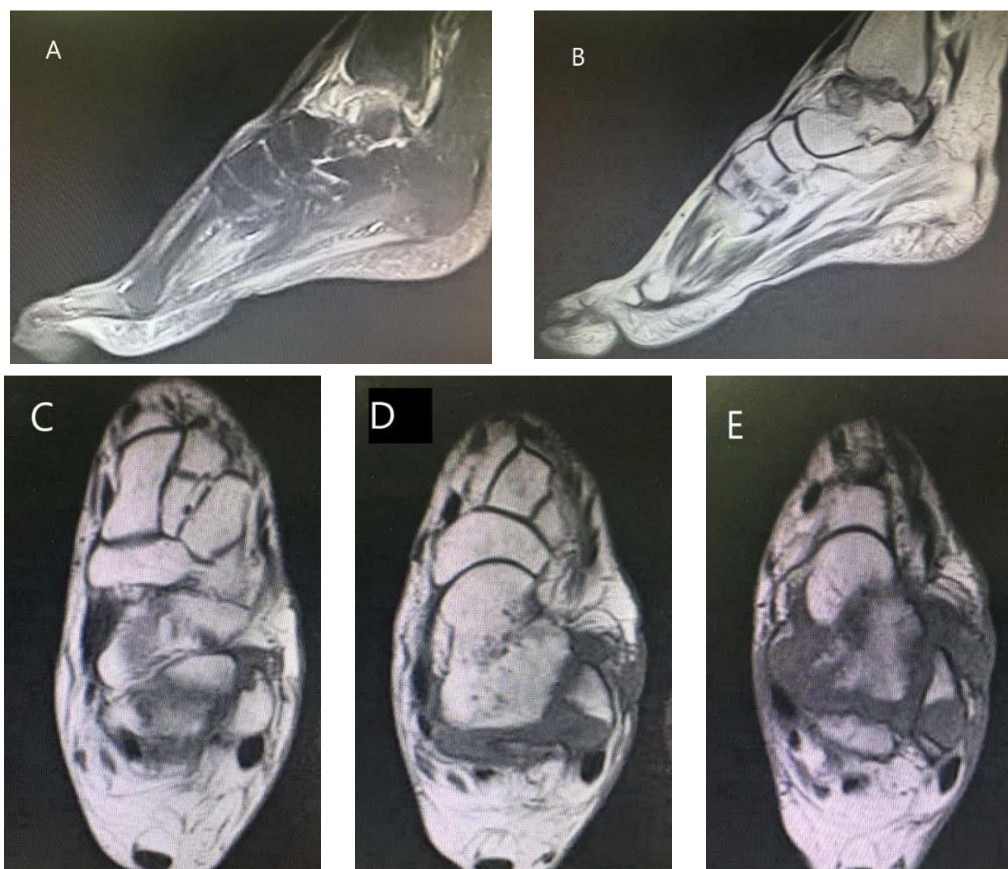


Fig. 2. MRI of left foot and ankle. (A, B, C, D, E) bone marrow signal changes in talus, tibia plafond and lateral malleolus and also destructive changes is seen in the tibiotalar joint and lateral malleolus

An magnetic resonance imaging (MRI) was ordered which revealed (Fig. 2) bone marrow signal changes in talus, tibia plafond and lateral malleolus and also destructive changes is seen in the tibiotalar joint and lateral malleolus (Fig. 2). This presentation was compatible with osteomyelitis and septic arthritis. More over the MRI showed fluid collection with connection to ankle joint and soft tissue surrounding of the ankle and lateral malleolus. Based on her symptoms and MRI findings, inflammatory or pyogenic arthritis or a malignancy such as osteoid osteoma were suggested as her differential diagnosis.

Laboratory findings were normal except an elevated erythrocyte sedimentation rate (ESR) (57 mm/hr). The synovial biopsy was revealed necrotizing granulomatous inflammation with Ziehl neelsen staining negative. The polymerase chain reaction (PCR) study detected mycobacterium tuberculosis.

The patient was under taken surgical debridement and discharge while the anti TB regimen was commenced include 2 month with rifampin, isoniazid, pyrazinamide and ethambutol and the association of rifampin and isoniazid for 10 months. On the follow up visit three months later she made a dramatic clinical improvement with no drug side effect.

3. DISCUSSION

Mycobacterium TB causes a chronic granulomatous monoarthritis that is usually spreads through the blood stream to the synovium [5]. Diagnosis of foot TB is difficult as it is detected in late stage. Most common symptoms include pain, swelling, and stiffness while swelling with fullness around malleolus and tendoachilis insertion, plantar flexion of ankle joint are the important sign of ankle-foot TB [6].

The most commonly involved bones are the calcaneum, metatarsi, cuboid and phalanges [3]. The diagnosis was suspected by x-ray and further supported by CT Scan. MRI is standard imaging modality in early stages when x-ray and CT Scan be normal [7]. Polymerase chain reaction is a useful method for early and rapid diagnosis of extrapulmonary tuberculosis with paucibacillary samples [8]. Current recommendations from CDC for the treatment of skeletal TB in adults without pulmonary TB are identical to that of extrapulmonary TB: isoniazid, rifampin, ethambutol, and pyrazinamide for 8 weeks, followed by Isoniazid and rifampin to complete 6 month of therapy [9].

4. CONCLUSION

TB diagnosis should be consider as an important cause of chronic arthritis. Early diagnosis would prevent future joint destruction. The imaging investigation, histopathological study and relevant laboratory test are recommended.

CONSENT

As per international standard or university standard, patient's written consent has been collected and preserved by the authors.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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