

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

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 pyomyositis of tuberculosis, bursitis, and tenosynovitis are uncommon and account for almost 1% of skeletal tuberculosis. Joint involvement of tuberculosis most commonly manifests as a mono-arthritis 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 diseases 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 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

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 includes 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].

M.tuberculosis usually spreads through the bloodstream and reach to the synovium to cause arthritis [2]. Foot and ankle Tuberculosis is quite rare with a frequency 5-10% of osteoarticular tuberculosis [3,4]. Here we report a case of TB arthritis which was involved the ankle joint.

Case Presentation

A 79-years-old female was admitted in the Infection Disease Department with a 4-month history of the left ankle pain and swelling. Following her ankle strain, she was taking home remedies with no improvement. She admitted for the left swollen ankle. On examination, she was afebrile but a sinus fistula with purulent secretion in the lateral malleolus was present along with soft tissue swelling surrounding ankle. The range of her right ankle motion was decreased. The x-Ray showed sclerosis of the distal tibia and a decrease articular space of the tibiotalar joint (figure 1). A magnetic

resonance imaging (MRI) revealed (figure 2) bone marrow signal changes in talus, tibia plafond and lateral malleolus along with destructive changes in the tibiotalar joint and lateral malleolus (figure 2). This presentation was compatible with osteomyelitis and septic arthritis. Moreover, the MRI showed fluid collection connecting to the ankle joint and soft tissue surrounding of the ankle and lateral malleolus. Based on her symptoms and MRI findings, the differential diagnosis of inflammatory or pyogenic arthritis, or osteoid osteoma were considered.

Laboratory findings were normal except an elevated ESR (57). The synovial biopsy was indicated necrotizing granulomatous inflammation with negative Ziehl Nelson staining. The Polymerase Chain Reaction (PCR) study detected mycobacterium tuberculosis.

The patient was undertaken surgical debridement and was commenced on the anti-tuberculosis regimen. On the follow-up visit three months later, she made a dramatic clinical improvement with no drug side effects.



Figure 1

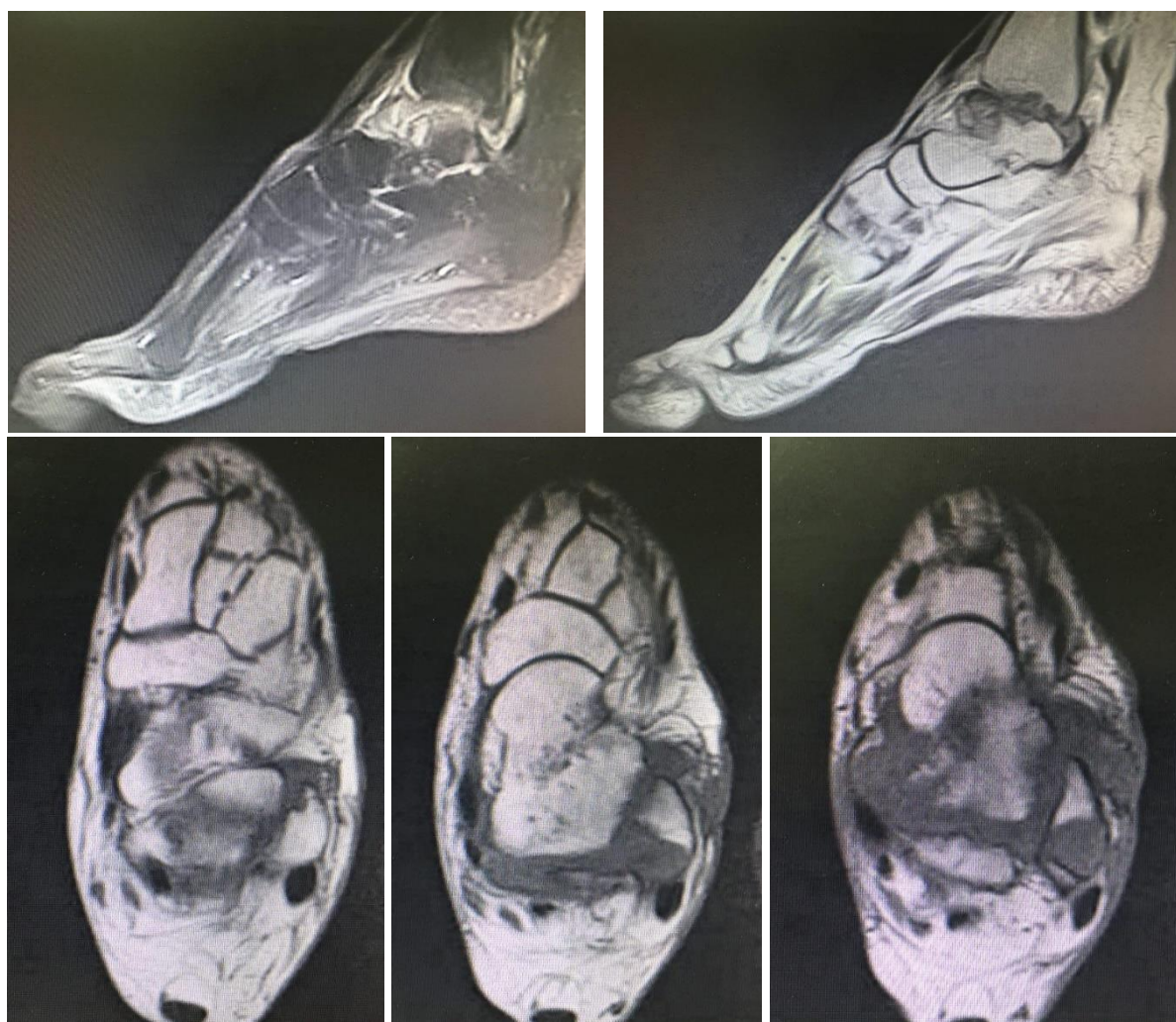


Figure 2

Discussion

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

The most commonly involved bones are the calcaneus, 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 are normal [7]. Polymerase chain reaction is a useful method for early and rapid diagnosis of extra-pulmonary tuberculosis with paucibacillary samples [8]. Current recommendations from CDC for the treatment of skeletal TB in adults without pulmonary tuberculosis are identical to that of extra pulmonary TB: isoniazid, rifampin, ethambutol, and pyrazinamide for 8 weeks, followed by Isoniazid and rifampin to complete 6 months of therapy [9].

Conclusion

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

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