

Introduction

Osteoarticular Tuberculosis (OATB) refers to tuberculosis (TB) involving the bones and the joints. In the United States, OATB is responsible for about 10% of extra-pulmonary cases [1]. The most commonly affected sites are weight-bearing joints, such as the spine, hip, and the knees. 10% of OATB involves the bones of the foot, where calcaneus is the most common followed by the tarsal and metatarsal bones [2]. Foot involvement accounts for less than 10% of all skeletal TB and up to 50% of patients do not show any pulmonary manifestation [3,4,5]. The patient's prognosis depends on whether the lesions are interosseous or involving a joint. Only a few cases have been reported in the involvement of isolated metatarsal. Here we present a case of tubercular osteomyelitis affecting the second metatarsal. The patient was treated with anti-tubercular therapy and responded well.

Case

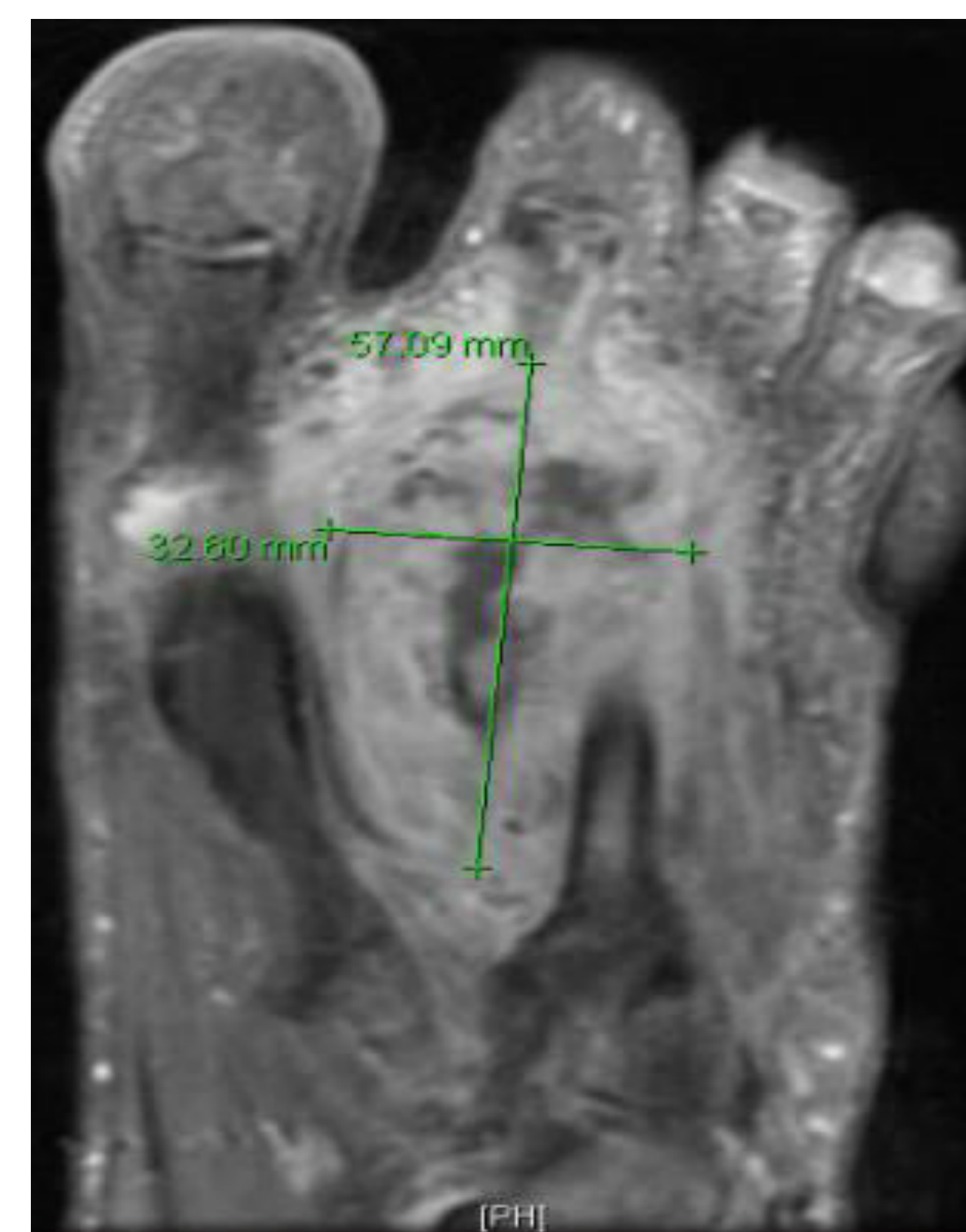
A 44-year-old male presented with non-traumatic left foot pain, swelling, and redness for 2 months. He had no significant past medical history. The patient denied drainage from the site or any constitutional symptoms. On examination, patient was found to have an abscess located on the dorsum of the left foot with localized erythema and edema without any open lesions. Sensation was intact and the pulses were non-palpable. All serological parameters were within the normal limits except for an elevated ESR of 125 (0-15 mm/hr). The x-ray of the foot showed diffuse soft tissue swelling of the metatarsal phalangeal joints with extensive erosive changes of the second metatarsal and proximal phalanx of the second ray (Figure 1). MRI showed an enhancing fluid collection with destruction of the mid/distal second metatarsal, consistent with an abscess (Figure 2). Abnormal enhancement in the base/proximal second metatarsal suggested osteomyelitis. An open biopsy and wound debridement was done and the patient was started on antibiotics. A deep wound pathology showed chronic granulomatous lesions with non-caseating necrosis (Figure 3) with a positive quantiferon test. Bone culture grew *Mycobacterium tuberculosis* complex and the patient was started on the usual anti-tubercular regimen. He was discharged home with a cane, a surgical shoe on the left foot and a follow up appointment with the department of health.

Figure 1.



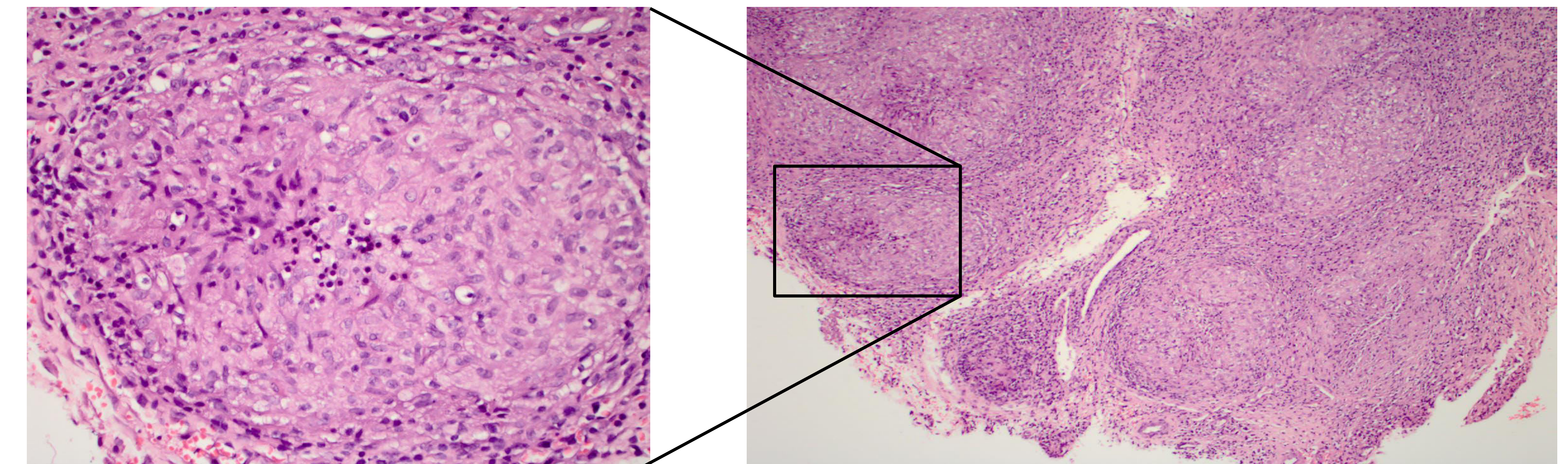
X-ray of the foot showing diffuse soft tissue swelling over the dorsum at the level of the metatarsal phalangeal joints. There are extensive erosive changes of the second metatarsal and to a lesser extent proximal phalanx of the second ray

Figure 2.



MRI of the left foot with and without gadolinium was done showing enhancing 5.7 x 5.0 x 4.3 cm fluid collection with destruction of the mid/distal 2nd metatarsal consistent with abscess. Abnormal signal/enhancement in the base/proximal 2nd metatarsal is consistent with osteomyelitis

Figure 3.



Wound biopsy from the left foot showing granulomatous lesions with non-caseating necrosis.

Discussion

The incidence of missed cases of TB is rising due to unusual presentations and non-specific findings on imaging. Diagnosis can be based on a MRI which is superior to an X-ray or a CT scan but histological findings from a surgical biopsy is the gold standard. The pathogenesis of TB involving the bony structures is related to the reactivation of hematogenous foci or a spread from the adjacent paravertebral lymph nodes. It is crucial to diagnose the patient when the disease is limited since medical treatment leads to very good outcomes. In advanced stages where the infection spreads to the joints or nearby structures, permanent residual deformity can occur.

Extrapulmonary tuberculosis, more commonly seen in immunocompromised patients, can involve any organ, including the pleura, lymph nodes, central nervous system, skeletal system, pericardium, larynx, peritoneum, and genitourinary system. Uncommon site, lack of awareness and ability to mimic other diseases clinically and radiologically leads to diagnostic and therapeutic delay. *Mycobacterium tuberculosis* is paucibacillary, a positive acid fast bacilli culture is rare and the diagnosis usually is confirmed by presence of granulomatous tissue on biopsy.

This case was presented because of its rare site of involvement and absence of other common risk factors. Osteoarticular tuberculosis can mimic other disease. No site or age group can be considered safe and we should maintain a high index of suspicion for such lesions as it can be easily misdiagnosed. Biopsy in such lesions avoids undue delay in diagnosis.

References:

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