

A RARE CASE OF A CHILD WITH CALCANEAL TUBERCULOUS OSTEOMYELITIS WITH SUBTALAR JOINT INVOLVEMENT

Orthopaedic

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ABSTRACT

Osteoarticular tuberculosis represents ~2% of all tuberculosis (TB). The localization in the foot and ankle is rare and accounts for less than 10% of osteoarticular TB, i.e. effective 0.2% of all. The following report describes the case of a 11-year-old boy who presented with a gradually increasing non-inflammatory swelling over the lateral aspect of the right ankle. X-ray of his ankle showed an osteolytic image at the calcaneus, MRI showed evidence of Calcaneal osteomyelitis with subtalar joint involvement suggestive of Koch's which was confirmed on aspiration. Aggressive treatment in form of Arthrotomy, debridement and sequestrectomy along-with Anti Koch's therapy was started and the patient showed good clinical outcome.

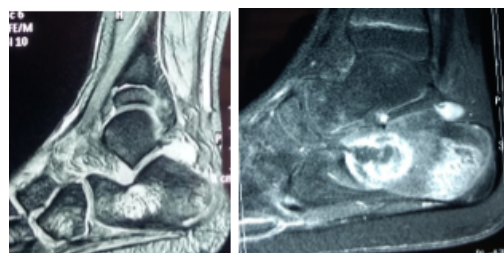
KEYWORDS

Case:

A 11-year-old boy presented with complaints of pain in his right foot associated with a gradually increasing non-inflammatory (cold) swelling over the lateral aspect of the right ankle. These symptoms began 2 months ago in the follow up of a trivial traumatic event. At presentation, the patient had consistent dull aching pain in the heel, walked in equinus (Heel-Up sign) and eversion inversion were painfully restricted (Inversion 10 Degrees, Eversion 5 Degrees) His past medical history did not reveal any repeated infections. Biologically, a hemogram showed leucocytosis and an erythrocyte sedimentation rate (ESR) that was found to be elevated with a value of 90 mm after one hour. Human immunodeficiency virus (HIV) was found to be negative. The tuberculin skin test (Mantoux) was positive. Radiographs of the right calcaneum showed an osteolytic lesion of the calcaneus (Figs. 1 and 2). The chest radiograph was normal. Considering the clinical picture a needle aspiration of the swelling was carried out which showed frank pus. Report of the same showed presence of Acid fast bacilli and CB-NAAT positive for *Mycobacterium tuberculosis*. MRI of the ankle was carried out which reported calcaneum tuberculous osteomyelitis with tuberculosis of the subtalar joint.



Arthrotomy, debridement and sequestrectomy was carried out under spinal anaesthesia and biopsy was sent. Following the operation Anti Koch's drug therapy under RNTCP category 1 protocol was started. Post operative patient was kept non weight bearing in a slab for 6 weeks, and partial weight bearing with cast till 10 weeks post op. Biopsy report showed epithelioid cell granuloma, few Langhans giant cell with caseous necrosis. At 3 months follow up, the bone showed remineralization of the bone on radiograph. Clinically, inversion and eversion were painless.



Introduction:

Tuberculosis of the foot is extremely rare and accounts for less than 10% of osteoarticular TB.^[1] Osteoarticular tuberculosis has remained a diagnostic enigma particularly when the disease affects rare sites^[2,3,4]. The prognosis is thus significantly worsened due to the tendency of TB to mimic other known diseases, leading to diagnostic and thereby treatment delays, resulting in poor functional outcomes. This study reports a rare example of a 11-year-old boy who presented with a rare localization of extra-pulmonary TB located at the foot involving the calcaneus with advanced progression involving the sub-talar joint and a presentation of a clinical observation.

Discussion:

Bone TB is a leading cause of morbidity and mortality in developing countries and actually in the entire world due to the increased incidence of TB in HIV-positive patients. In India, even more so because tuberculosis is endemic disease. Osteoarticular TB represents 1.7–2% of all forms of TB. It is the third amongst extra pulmonary TB after the peritoneal and lymph node forms of TB. It is a disease that must be diagnosed quickly before the disease progresses and injures or destroys the bone or joint^[5]. In osteoarticular TB, the spine and hip are the most commonly affected areas. The ankle and foot are rarely affected and represent only 1% of all infections of TB and about 10% of osteoarticular localizations^[5]. Skeletal TB being extrapulmonary is more challenging than pulmonary TB as it is less common and less familiar to surgeons. TB of calcaneum is very rare, and its incidence in children is extremely low. The calcaneus is most often affected, but only calcaneal localization without joint involvement is extremely rare, and diagnosis is often made at a late stage after involvement of the joint because osteoarticular TB is paucibacillary and it is difficult to isolate or cultivate the Koch bacillus.

Clinically, the symptoms are pain, stiffness and edema of the heel or whole foot. Sinuses and fistula occur very late^[6]. Radiologically, the common sign is a lytic lesion in the middle of the calcaneus with or without sequestrum, but a bone sclerotic appearance can be observed. CT and MRI play an important role in its early diagnosis^[7]. Biological examinations help in diagnosing the disease with elevated ESR and C-reactive protein (CRP). The tuberculin intradermal reaction (IDR) can be negative^[8,9]. The diagnosis of TB must be concluded in the face of a cystic lesion of the bone with blurred boundaries and sclerosis minimal peripherally. Biopsy of the cystic lesion is an essential step to make a

positive diagnosis. The only confirmatory test is isolation of the acid-fast bacillus (AFB). The search of other localizations of pulmonary and extra-pulmonary TB is systematic.

TB treatment is the basis of treatment for a period of 9–12 months. Surgery may be indicated as a debridement, curettage or excision of a sequestrum. A bone graft can be performed before the apparition of a loss of bone. The plaster immobilization is recommended^[10,11,12]. The course and prognosis depend on an early diagnosis and therapeutic management.

Conclusion

The location of TB at the calcaneus is rare. The diagnosis should be suspected in view of clinical and radiological signs, especially in endemic countries. The rarity of the lesion and its atypical presentation make the diagnosis of TB of the calcaneus very difficult based on clinical criteria. The clinical observations of this case highlight the unusual skeletal manifestations of TB and should be considered to prevent delay in diagnosis and therapeutic management. Surgical intervention is indicated in case of presence of complications and non-response to anti Koch's therapy.

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