



Case Report

Unusual Site of Tubercular Osteomyelitis of 5th Metatarsal

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ABSTRACT

Introduction: The prevalence of tuberculosis and musculoskeletal tuberculosis is increasing and may become an important problem. Very few cases of Tubercular osteomyelitis of the foot have been reported. Isolated osteomyelitis can be seen in the early stages of the disease, but early treatment is required to prevent possible sequelae, such as septic arthritis of adjacent joints. Here is a case of TB Osteomyelitis affecting the 5th metatarsal, with clinical manifestations, diagnostic images, and treatment of skeletal tuberculosis.

Case Report: A 25 years male presented with history of pain and swelling over lateral aspect of right foot. X ray was done and showed osteolytic lesion over the 5th metatarsal. We performed FNAC of the lesion. The histological examination of the necrotic tissue showed acid fast bacilli with granulomatous inflammation. The culture of the necrotic tissue grew mycobacterium tuberculosis. Anti-tuberculous therapy was stated as the diagnosis was made. The patient was given isoniazid, rifampicin, pyrazinamide and ethambutol along with B/K slab.

Results: After nine months of treatment, there was clinical and radiological resolution of Osteomyelitis of 5th metatarsal. General condition of the patient improved, no pain at the infective site and completes healing of the lesion.

Conclusion: Musculoskeletal tuberculosis can be difficult to diagnose as only about one third of patients have respiratory symptoms. Definitive diagnosis and a bone biopsy should always be taken for culture and histological examination.

Key Words: Tuberculous Osteomyelitis, 5th Metatarsal, Short long bone.

INTRODUCTION

Tuberculous osteomyelitis of short long bone itself is uncommon entity and may fail to be diagnosed. The incidence of tuberculous osteomyelitis is rare. Tuberculosis is a major health issue in developing countries and can affect any bone of the body. Patient treated with immunosuppressant agents, multiple drug resistance tuberculosis, Human

immunodeficiency virus (HIV), acquired immunodeficiency syndrome (AIDS), etc has resulted in changing epidemiology and has once again brought extrapulmonary tuberculosis (EPTB) affecting the joints and bones into focus. [1] The primary focus is always pulmonary, extra pulmonary involvement can occur in isolation or along with a pulmonary focus as in the case of

patients with disseminated tuberculosis (TB). Isolated involvement of short long bone by tuberculous infection is uncommon and isolated metatarsal involvement is rare. Tuberculous Osteomyelitis may present with variable clinical manifestation and radiological pictures which may mimic chronic pyogenic osteomyelitis, Brodie's abscess, granulomatous lesion, neoplasm such as (Aneurysmal bone cyst, Giant cell tumour). [2-4]

The clinical manifestation and symptoms are not specific in its early course. The only early symptoms are pain and swelling of the involved joint or bone. Later may present with diffuse swelling, discharging sinus, pathological fracture. Therefore it is often neglected or the diagnosis is delayed. In early stages plain radiographs are normal but MRI & CT may help to localize the lesions. [5] Fine needle aspiration cytology, Biopsy, ZN staining and culture sensitivity are mandatory to confirm the diagnosis.

CASE REPORT

25 years male, presented with chief complaints of evening rise of temperature, pain, and swelling over lateral and dorsum of Right foot since 3 months. There was no history of trauma. On examination tenderness over dorso-lateral aspect of right foot, swelling was diffuse in nature, no local

rise of temperature, no discharging sinus and surrounding skin was free dorso-laterally and stretched Radiography of right foot was performed. The foot radiograph revealed a patchy osteolytic area with surrounding osteopenia, break in cortex and cortical thinning of 5th metatarsal (fig 1 & fig 2). Routine blood investigation was done, TLC was raised 14500, ESR 70, CRP Positive. Differential leucocyte counts showed increase lymphocytosis. Differential diagnosis includes chronic pyogenic osteomyelitis, aneurysmal bone cyst, giant cell tumor and fungal osteomyelitis etc. FNAC was done using Jamshidi needle to rule out neoplasm and it showed granulomatous inflammatory infiltrate with epithelioid cells and langerhans type of giant cells (fig 3 & fig 4) conclusive of tuberculous osteomyelitis. Antituberculous drugs used for medical treatment included rifampicin (10 mg/kg in adults and 10 to 20 mg/kg in children), isoniazid (5 to 10 mg/kg in adults and 10 to 20 mg/kg in children), pyrazinamide (20 to 40 mg/kg), ethambutol (15 to 25 mg/kg), and streptomycin (15 mg/kg). Intensive phase consisted of HRZES regime for 2 months followed by continues phase HRE for 10 months. Patient was initially given below knee slab for 1 month and then started on partial weight bearing and physiotherapy.



Fig 1: X Ray before initiation of ATT



Fig 2: X Ray after initiation of ATT

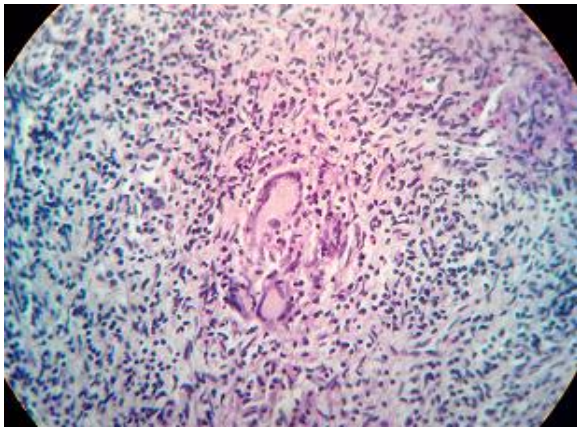


Fig 3: Microscopy

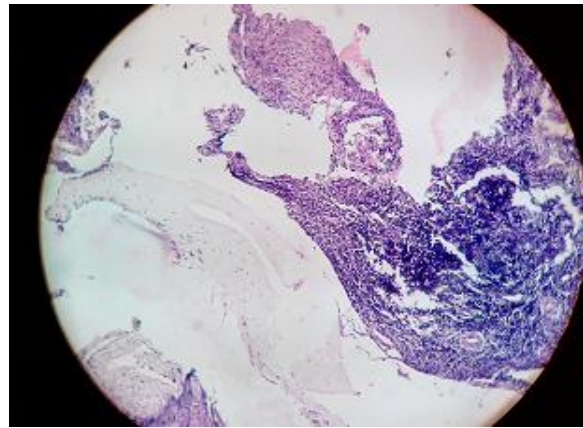


Fig 4: Microscopy

DISCUSSION

Tuberculous osteomyelitis runs an unusual course. Many of times diagnosis is delayed because of unusual presentation, signs and symptoms. [6]

Osteoarticular infection accounts for only 1% to 3% of all cases of tuberculosis reported worldwide; of these cases, only 8% to 10% involve the foot. [7] Only 20% to 30% cases may give a positive ZN stain or culture sensitive. With tuberculosis of the foot, the calcaneus is the most common bone to be affected and to the best of our knowledge very few cases of tuberculous osteomyelitis of the metatarsals have been reported in the literature.

The fifth metatarsal is rarely affected both by pyogenic and tubercular infections. The relatively exposed position of these metatarsals in the forefoot, combined with the increased weight-bearing stresses of the medial and lateral columns of the foot, likely make them more susceptible to repeated microtrauma and bacterial seeding or it may activate a latent tubercular focus. [8,9]

Isolated metatarsal involvement by tuberculosis usually presents with pain and swelling and the general symptoms are less pronounced. Diagnosis can easily be made by the presence of pain, swelling, tenderness and cold abscess/sinuses. The sinuses may be discharging serous or serosanguineous fluid. X-ray reveals osteoporosis, area of bone destruction and cavitation. In initial

active disease it may be difficult to localize the lesion because of extensive and intense osteoporosis. Comparative X-ray of both the feet may be of help. Tuberculous osteomyelitis of the metatarsals is usually secondary to lymphohematogenous spread from a pulmonary lesion, [10,11] but in some cases, the primary site of tuberculosis may not be discernible. Extensive tubercular destruction of a metatarsal may lead to pathological fracture, which may be the presenting feature in some cases. FNAC is done as it confirms the diagnosis [12] and cost of investigation is less than MRI and CT.

Antituberculous drugs remain the mainstay of treatment. Surgical excision of the isolated osseous lesion to prevent involvement of adjacent joints, or debridement and curettage may be indicated in non healing lesions. Once the disease is healed the normal activities and function are not restricted.

CONCLUSION

Patient was relieved of pain within 2 months of the initiation of treatment. Over a period of five months, the foot swelling subsided, the patient was able to bear weight without pain. Follow up radiograph showed bone healing through gradual disappearance of the radiolucencies involving the fifth metatarsal. The antitubercular medications were discontinued after twelve months.

There was no recurrence of osteomyelitis three year later.

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