

Tubercular Osteomyelitis of Tibia: A Case Report

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ABSTRACT

Tubercular osteomyelitis of long bone is extremely rare and very few cases have been reported in literature. We are presenting a case of 43 years gentlemen presented with pain and swelling over lower half of leg for 5 months. There was associated pus discharging sinus and often low-grade fever but no history of weight loss or pulmonary symptoms. X-ray chest was normal. X-rays of involved leg was suggestive of osteomyelitis. Curettage and Biopsy was done, report was suggestive of tuberculous osteomyelitis. As tuberculosis is still common in developing countries like Nepal, for any osteolytic lesion in bone, tubercular osteomyelitis should always be considered in differential diagnosis.

Keywords: *extrapulmonary tuberculosis; osteolytic lesion in bone; tubercular osteomyelitis.*

INTRODUCTION

Every second, someone on the planet is newly affected by *Mycobacterium tuberculosis*. Worldwide TB is the top 10 causes of death and millions of people continue to fall sick with TB each year. World Health Organization reported that estimated 10 million new cases of tuberculosis were diagnosed worldwide and 1.3 million death occurred because of tuberculosis in 2017.¹ The incidence of skeletal manifestation in tuberculosis is very low, any bone can be affected, however spine is the most common site for skeletal TB, accounting more than 50% of all cases followed by femur, tibia and fibula.^{2,3} Primary diaphyseal TB of long bone is extremely rare and only few cases have been reported in literature.⁴ Clinical symptoms may be mild and the diagnosis of tuberculous osteomyelitis requires a high degree of suspicion for accurate and timely diagnosis. Identification of *mycobacterium tuberculosis* with culture is a lengthy process, causing delay in the accurate diagnosis. Biopsy and histopathology evaluation are more useful for early diagnosis.⁵ This case highlights the rare presentation of diaphyseal tuberculous

osteomyelitis of distal tibia without articular involvement.

CASE REPORT

A 43-year-old gentlemen presented in our hospital with the history of pain and swelling in the lower half of the right leg for last 5 months. There was pus discharging sinus for last 2 months. Pain was mild in intensity, increased during walking and relieved with rest. There was history of low grade fever. There was no history of trauma, cough or weight loss. His elder brother has got pulmonary Tuberculosis in his family



Figure 1a. Clinical Presentation **Figure 1b. X-ray at Presentation**

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for which completed ATT. BCG vaccination was performed in childhood. He belonged to lower middle-class family, ex. Policemen, and well-nourished. Examination of lower leg revealed diffuse, tender swelling 5x8 cm in size and local temperature was raised with pus discharging sinus (Figure 1a).

Routine laboratory workup revealed that the erythrocyte sedimentation rate (ESR) was 50 mm in the first hour. Hemoglobin level was 13 g/dl and a Normal total and differential cell count. The Mantoux test was normal. The renal and liver function tests were also normal. The fasting blood sugar level was 77 mg/dl. Serology for hepatitis B and C as well as HIV were negative. AFB stain was negative for 3 consecutive sputum samples. Radiograph of the chest was normal. X-ray lower tibia showed osteolytic lesion 1 cm in diameter, at junction of upper two third and lower one third of tibia (Figure 1b).

Chronic pyogenic osteomyelitis was provisionally diagnosed and after consent of patient, wound debridement along with curettage and biopsy was done. External Fixator was applied to prevent pathological fracture. Histopathology report showed granulomatous lesion with epithelioid macrophages and langhans giant cells along with lymphocytes, plasma cells, few PMN's, fibroblasts with collagen, and caseous necrosis in the center, suggestive of tuberculous osteomyelitis (Figure 2).

After curettage and biopsy report, anti-tuberculous therapy was started with four drugs regimen. Isoniazid 5 mg/kg/day, Rifampicin 10 mg/kg/day, Pyrazinamide 25mg/ kg/day, and Ethambutol 15 mg/kg/day along with vitamin B-6. Wound healing (Figure 3) was excellent and Rotational skin flap was done to cover up the wound. (Figure 5) Clinically patient was improved significantly after curettage and anti-tubercular drugs.

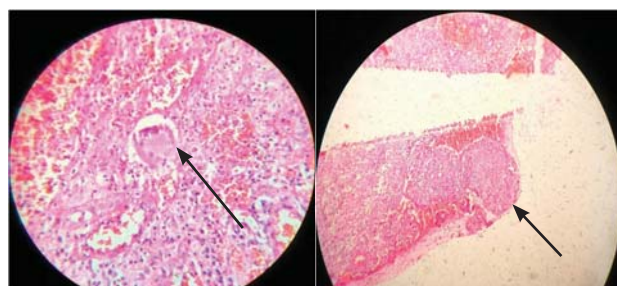


Fig 2a HPE:
Langhans' Giant Cell

Fig 2b HPE: Ill defined Granulomas



Fig 3. Clinical picture
of Healing wound after
ATT

Fig 4. X-ray after
curettage and
debridement



Fig 5. Picture after Flap
Coverage

Fig 6. X-ray after 4
months



Fig 7. Clinical Picture
after Ex Fix Removal

Fig 8. X-ray after Ex
Fix Removal

DISCUSSION

Diagnosis of musculoskeletal tuberculosis is difficult and often remained unnoticed for a long time due to its indolent course and versatile character of disease.⁶ Tuberculosis has been reported in all bones of the body. Up to 50% of the extrapulmonary

tubercular infections occur in the spine. Extrapulmonary tubercular osteomyelitis (ETO) is caused by a haematogenous spread from an active focus that is usually located in the lungs. The knee and tibia are reported to be involved in 10% of cases however tuberculosis of the shaft of tubular bones makes up less than 1% of all cases of skeletal tuberculosis. Isolated involvement of the bone without joint involvement is uncommon.^{7,8}

A solitary lesion in the diaphysis of the long tubular bone may mimic chronic pyogenic osteomyelitis, Brodie's abscess, cystic lesions, tumours or granulomatous lesions, either fungal or bacterial.⁷ Like in our case it was confused with Chronic pyogenic Osteomyelitis initially and was confirmed TB osteomyelitis

later on with histopathological report.

Primary diaphyseal TB of tibia without articular involvement is extremely rare and only few cases have been reported. Jacob⁹ in a series of 30 cases of atypical TB in immigrants reported only 2 cases involving tubular bones. Carino in his series of 15 cases reported 80% cases involving primarily the long bones (femur= 7, tibia= 3, humerus= 2).¹⁰

Another case of diaphyseal TB of tibia was reported in 1983 by Richter in a study of 27 years.¹¹

In our patient there was no previous history of pulmonary tuberculosis while in the literature one third of patients with skeletal tuberculosis reported to have pulmonary tuberculosis.^{10,12}

Tuberculosis is a wide spread problem in our country. High index of suspicion is required for early diagnosis of musculoskeletal tuberculosis. In any osteolytic diaphyseal lesion of long bone, biopsy should be done to rule out tuberculosis.

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