# **Tuberculosis of Calcaneum: A Rare Case Report**

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## Abstract

Tuberculosis is a leading cause of morbidity and mortality in developing countries including India. Skeletal tuberculosis accounts for 1-3%. Tuberculosis of bone may evade the diagnosis for a long time, as it usually remains silent till either involvement of a neighbouring joint or development of a soft tissue swelling due to cold abscess formation. Tuberculosis of bone mimics clinical conditions like Chronic Osteomyelitis, Madura mycosis and Actinomycosis. There have been few case reports of unusual sites being affected and with unusual presentation by this disease.

Key words: Extrapulmonary tuberculosis, Osteomyelitis, Calcaneum

# Background

Skeletal tuberculosis constitutes 1% to 3% of extrapulmonary cases and involvement of foot bones is even rare.<sup>1-2</sup> In foot, the lesion involves calcaneum, talus, 1st metatarsal and navicular bones in order of decreasing frequency.<sup>3-4</sup> Skeletal tuberculosis being extrapulmonary, usually presents more of a diagnostic challange than pulmonary tuberculosis as it is less common and, therefore, less familiar to most clinicians. It involves relatively in accessible sites. The paucibacillary nature of the

discharging sinus makes the bacteriological confirmation more difficult and warrants the use of invasive procedures to establish the diagnosis.<sup>5</sup>

## **Case Report**

Here we are reporting a 28 year female patient admitted to Orthopedics ward, Sri Siddhartha Medical College Hospital and Research Centre, Tumkur, India, presented with history of swelling, multiple discharging wound and pain in right ankle after a trauma for 6 months. She had a history of fever with chills for 3 weeks. On examination of her right ankle revealed swelling, tenderness and multiple discharging sinuses with serosanguinous fluid [Figure 1]. Her investigations were as follows- haemoglobin -7.8g%; Total Leucocyte Count -11,500 cells/cu.mm with polymorphs- 32%, lymphocytes -65% and eosinophils -3%; erythrocyte sedimentation rate - 68 mm in first hour; blood sugar -76 mg % and liver and kidney function tests were normal. The routine chest roentgenogram (PA view) was also normal. Her serum was negative for HIV antibodies and her sputum examination was negative for acid fast bacilli. The X-ray right ankle showed features suggestive of Chronic osteomyelitis of right calcaneum with diffuse osteoporotic changes of foot bones and soft tissue swelling around ankle joint [Figure 2]. The Ziehl-Neelsen staining of biopsy material from right ankle, showed presence of few acid fast bacilli [Figure 4]. Culture on Lowenstein Jensen medium, the biopsy material was positive for *M tuberculosis*. Histopathology report of biopsy was suggestive of granulomatous inflammatory lesion probably of tuberculous origin [Figure 3]. We treated this case conservatively and no surgical intervention was done as there was no evidence of extensive bone destruction. Patient was started on category-3 DOTS. The patient responded very well and swelling regressed completely.

### Discussion

Tuberculosis may involve virtually any organ, tissue or bone in the body. Osteoarticular tuberculosis, although rare, has shown resurgence in recent times.<sup>5</sup> The incidence of skeletal manifestation in tuberculosis is only 1-3%.<sup>1</sup> Bones generally involved are the spine (dorso-lumbar), skull, shoulder girdle and hip bones. Tuberculosis of the bone, in general usually begins in the cancellous portion of the bones involved. Involvement of the foot is infrequent. The route of infection in these cases is either direct inoculation or via blood stream.<sup>6-7</sup> Tuberculosis of bone mimics clinical conditions like chronic osteomyelitis, madura mycosis, actinomycosis, multiple

myeloma or secondary malignant deposits.<sup>3,8</sup> Hence, the lack of awareness and a confusing clinical and radiological picture often lead to a delay in diagnosis. Since the isolated osteomyelitis is usually seen only in the early stages of the disease process, early diagnosis and appropriate therapy are imperative to get good long-term results. Neither the concomitant extra skeletal lesions or evidence of primary pulmonary tuberculosis are always seen nor does the culture or smear give positive results in majority of the cases due to the paucibacillary nature of the biopsy material. Thus a high index of suspicion is mandatory. Clinical and radiologic features, along with histopathologic evidence of granulomatous pathology should be sufficient to initiate therapy.<sup>9</sup>

#### Conclusion

Skeletal tuberculosis occurs relatively infrequently, with a reported incidence of approximately 1 per cent of all patients hospitalized for tuberculosis.<sup>2</sup> To the best of our knowledge, no case of isolated calcaneal tuberculous osteomyelitis has been reported before from India. The diagnosis and treatment of calcaneal tuberculosis are often delayed because of the unawareness of the surgeon and less dramatic signs and symptoms of calcaneal osteomyelitis than osteomyelitis of long bones.<sup>10</sup> Thus a high index of suspicion is mandatory. The early diagnosis is of paramount importance for early prompt treatment and better clinical outcome.

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#### Conflicts of interest: None

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Figure 1: Multiple discharging sinus around right ankle.



Figure 2: X-ray of right foot showing diffuse osteoporotic changes in the calcaneum and other foot bones with extensive soft tissue swelling



Figure 3: Histopathology of biopsy material shows extensive granulomatous inflammatory lesion suggestive of tubercular origin



Figure 4: Acid fast bacilli seen in Ziehl-Neelen staining of biopsy material