

# Calcaneal Tuberculosis Osteomyelitis – A Rare Case Report

Stelphy Stephen<sup>1</sup>, Alwin Anilkumar<sup>2</sup>, Anisha Joy<sup>3</sup>, Riya Benny<sup>4</sup>, Sona Elsa E Alexander<sup>5</sup>

<sup>1,2,3,4,5</sup>Department of Pharmacy Practice, C.L Baid Metha College of Pharmacy, The Tamil Nadu Dr. MGR Medical University, Chennai, Tamil Nadu, India – 600097

Email address: stelphystephen@gmail.com<sup>1</sup>, alwinanilkumar@gmail.com<sup>2</sup>, anishajoy187@gmail.com<sup>3</sup>, riyabenny999@gmail.com<sup>4</sup>, sonaelsaealexander@gmail.com<sup>5</sup>

**Abstract**— *Mycobacterium tuberculosis* causes the deadly infectious infection known as tuberculosis, which is the major cause of morbidity and mortality. Calcaneal tuberculosis is a rare condition. Osteoarticular tuberculosis of the foot is uncommon and that of the calcaneum is very rare. We present the case of a 20-year-old female patient who presented with a history of back pain and sleeps disturbance. Her left heel had a sinus that was discharged when it was examined. The GeneXpert MTB/RIF showed the presence of mycobacterium tuberculosis complex and the gram stain showed many pus cells and occasional gram-positive bacilli. She was successfully treated for left calcaneum debridement and curettage stimulant pellets along with gentamicin inserted. The patient responded effectively to the antitubercular medication, and the wounds improved.

**Keywords**— Tuberculosis, osteomyelitis, Calcaneum, Mycobacterium.

## I. INTRODUCTION

**T**uberculosis is a serious contagious infection caused by mycobacterium tuberculosis that is a leading cause of morbidity and mortality. Tuberculosis of calcaneum is a rare entity. Osteoarticular tuberculosis of the foot is uncommon and that of the calcaneum is very rare.[1] Only 2% of all cases of tuberculosis are accounted for by osteoarticular tuberculosis.[2] The localization in the foot is rare and accounts for less than 10% of osteoarticular tuberculosis.[1] Skeletal tuberculosis being extra pulmonary usually presents more of a diagnostic challenge than pulmonary tuberculosis as it is less common.[3] Tuberculosis of the calcaneus can have a varied presentation and can be mimicked by other heel pathologies. This coupled with a lack of awareness on the part of the surgeon often delays the diagnosis and can hence lead to an unsatisfactory clinical outcome and residual function disability.[2]

## II. CASE REPORT

Here we report a 20-year female patient admitted to the orthopedics ward, in a tertiary care hospital, Chennai, India, who presented with a history of back pain for 4 months, and pain aggravates on sitting, standing, change in posture, night pain, and sleep disturbance present. She had a history of COVID -19 and right lacrimal gland surgery 1 year ago. On examination of her left heel, discharging sinus was present. Her investigations were as follows- Neutrophils 79.4%, Lymphocytes 16.0%, and other laboratory values were normal. The GeneXpert MTB/RIF showed the presence of mycobacterium tuberculosis complex and the gram stain showed many pus cells and occasional gram-positive bacilli. Her MRI showed marrow oedema, bony destruction inside calcaneal, abscess formation with extension into soft tissue. She was admitted and a pre-anesthesia evaluation was done. She underwent D10-L3 posterior stabilization, D12-L1

anterolateral decompression, and fusion with cage and deformity correction. For the left calcaneum, debridement and curettage stimulant pellets along with gentamicin were inserted. Antitubercular treatment was started based on microbiology and histopathological examination reports. The patient responded well and the wounds became healthy.

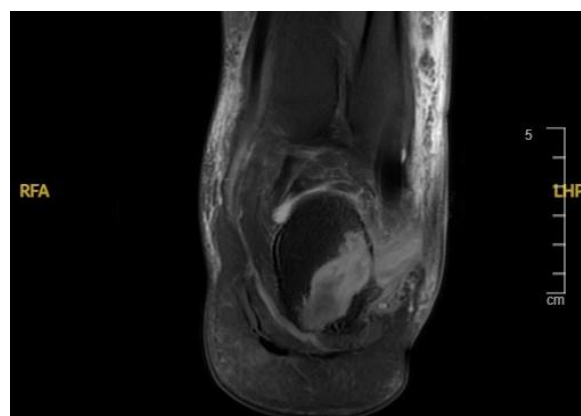


Fig. 1. MRI Left ankle

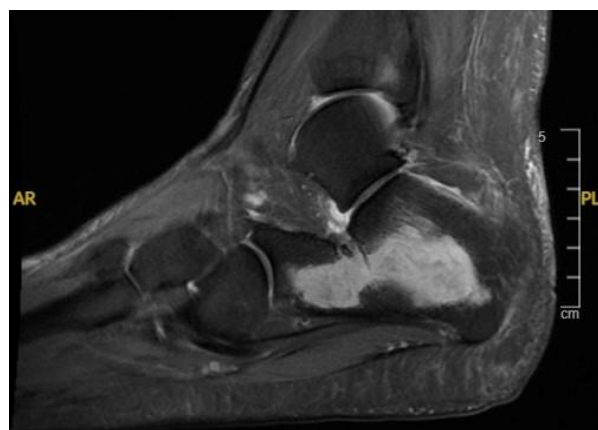


Fig. 2. MRI Left ankle

### III. DISCUSSION

Tuberculosis is a leading cause of morbidity and mortality in developing countries including India.[3] Osteoarticular tuberculosis constitutes 1-3% of cases and about 10% of osteoarticular TB affects the foot and ankle. In the foot, TB calcaneus is the most commonly affected bone.[4] In the present report, a rare case of 20 years old female reported with D12-L1 tubercular spondylodiscitis with kyphosis deformity, left calcaneal tuberculosis reported in the infant by SwapnilGadge et al. (2015) [5] The common sites of Skeletal Tuberculosis are the vertebral column, hip, and knee. Involvement of the foot and ankle is rare.[6] The present report showed that on examination of her left heel-discharging sinus was present and another study conducted by Zara Hayat et al (2014) reported that their study appears to be the first reported case of isolated calcaneal TB in a patient with no signs of constitutional illness.[6] In the present study, first-line antitubercular drugs were started based on microbiology and histopathological examination reports Varma H S et al (2016) reported Calcaneal Tuberculosis which had similar first-line antitubercular drugs.[7] In the present study GeneXpert MTB/RIF and gram stain reports showed the presence of bacteria and a study conducted by Yugalkarkhur et al (2017) reported a case where acid-fast staining and polymerase chain reaction examinations were done for Tuberculosis bacilli.[8]

### IV. CONCLUSION

Tuberculosis is a contagious serious infection caused by Mycobacterium tuberculosis. Calcaneal tuberculosis is uncommon. Due to the rarity of TB Calcaneus, a high index of clinical suspicion supported by favourable imaging findings,

GeneXpert results, and Gram stains may aid in the diagnosis. Early diagnosis is crucial to prevent disease progression to adjacent bones and joints. This patient had successfully undergone deformity correction surgery and antitubercular therapy (Ethambutol, Pyrazinamide, Isoniazid, Rifampicin).

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