

## Tuberculosis of Medial Cuneiform: A Case Report.

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### ABSTRACT

Isolated tuberculosis of cuneiform is rare in literature. Diagnosis of tuberculosis of cuneiform remains a dilemma because of its rarity in the lower limb. Chance of misdiagnosis and delay in diagnosis may add to morbidity. Presumptive diagnosis can be made on the basis of X-ray, MRI, histopathology of the pathological tissue, which reveals granulomatous inflammation with or without caseation. Here we are reporting a case of 15 year old girl with swelling and pain over a mid foot diagnosed as tuberculosis of cuneiform on subsequent X-ray, MRI and biopsy.

**Keywords:** Medial Cuneiform, Tuberculosis.

### INTRODUCTION

Tuberculosis is a challenging infectious health problem for both developed and developing countries. Skeletal tuberculosis accounts for 1 to 3% of extra pulmonary tuberculosis. The spine is most commonly affected, and foot and ankle involvement is rare, accounting for about 10%<sup>[1]</sup> in which Calcaneum is the most common bone involved.<sup>[2]</sup>

Diagnosis of tuberculosis of the foot remains a dilemma because of its rarity in lower limb, especially when confined to a single bone with or without articular involvement. Hence, the chance of misdiagnosis and delay in diagnosis may add to morbidity.<sup>[3]</sup>

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Some diseases like chronic pyogenic osteomyelitis, fungal osteomyelitis, Madura mycosis and some bone tumours may mimic tuberculosis of foot.<sup>[4]</sup> Presumptive diagnosis can be made on the basis of X-ray, MRI and histopathology of the pathological tissue.

Here we are reporting a case of 12 year old girl with swelling and pain over a mid foot diagnosed as tuberculosis of cuneiform on subsequent X-ray, MRI and biopsy.

### CASE REPORT

A 12 year old girl presented with complaints of swelling, pain and discharging sinus over right foot for last 3 months. Swelling and pain was progressive in nature. It has increased over the last 3 months such that the patient had difficulty in walking due to pain. There was no history of fever, weight loss, and loss of appetite, any chronic cough, any infective foci or any contact of tuberculosis.

On examination, there was swelling of dorsal aspect of the foot. There was a small sinus over dorsum of the foot, which had undermined edge with bluish discoloration around the margins. There was tenderness over mid foot. The temperature was mildly raised as compared to the other foot. There was inguinal lymphadenopathy.

On blood investigation, ESR was 70 mm after one hour. Montoux reaction was positive. Rest routine investigation was normal.

X-ray of right foot (anterior and oblique view) showed a lytic lesion of the medial cuneiform with the reduced joint space of 1<sup>st</sup> Tarso-metatarsal joint with mild patchy sclerosis. [Figure 1]. There was also sign of osteopenia and coarsened primary trabeculation.

Chest radiograph appeared normal. Gram staining, Ziehl Nielsen staining, wet KOH mount, and culture for fungi, pyogenic organisms and mycobacterium tuberculosis were negative.

Surgical intervention was done by debridement and curettage of the medial cuneiform. Intraoperatively soft tissue surrounding medial cuneiform was

unhealthy and the cavity inside it contained unhealthy granulation tissue. 1<sup>st</sup> tarso-metatarsal joints was destroyed.



**Figure 1: X-ray of right foot showing lytic lesion of the medial cuneiform with the reduced joint space of 1st Tarso-metatarsal with mild patchy sclerosis.**

Surgical intervention was done by debridement and curettage of the medial cuneiform. Intraoperatively soft tissue surrounding medial cuneiform was unhealthy and the cavity inside it contained unhealthy granulation tissue. 1<sup>st</sup> tarso-metatarsal joints was destroyed.

Tissue and pus was sent for Gram staining, Ziehl Nielsen staining, KOH mount, culture for fungi, pyogenic organisms, and mycobacterium tuberculosis and for histopathological examination. Ziehl Nielsen staining revealed acid fast bacilli and culture on Lowenstein Jensen media grew mycobacterium colonies. Histopathology revealed multinucleate giant cells, granulomatous inflammation, epitheloid cells, and plasma cells with caseous necrosis.

Diagnosis of tuberculosis of medial cuneiform was made and anti-tubercular therapy was advised for 18 months and below knee slab was applied. Non weight bearing walk was started. At 6 weeks follow up, the splint was removed and physiotherapy of ankle was started. Partial weight bearing was started when pain reduced and progressively increased as tolerated.

The patient was followed for one year and one and a half year. The sinus was healed and painless normal range of motion was present [Figure 2]. Radiograph showed sclerosis and mineralization of surrounding bones.

## DISCUSSION

Musculoskeletal tuberculosis is difficult to diagnose. The classic presentation of localised pain, fever and weight loss is rarely seen.

Radiological features of musculoskeletal tuberculosis may include bone marrow oedema,

osteoporosis, lytic lesions or may be nonspecific. The surrounding tissue may show synovitis, joint effusions, tenosynovitis or abscess.

Isolated tubercular involvement of foot bones with an osteolytic defect is a rare entity.<sup>[5]</sup> Dhillon MS, et al studied 92 cases of foot, tuberculosis over 20 years, 23 were of osteolytic variety out of which 2 had lesions in the cuneiform.<sup>[5]</sup>



**Figure 2: Clinical photograph showing healed sinus.**

Tuberculosis of cuneiform is rare and may mimic fungal osteomyelitis, Madura mycosis, chronic pyogenic osteomyelitis and bone tumours. ESR is almost always elevated in case of tuberculosis.<sup>[6]</sup>

In our case there was a positive Montoux test, raised ESR, histopathology of the tissue specimen, Ziehl Nielsen staining and isolation of Mycobacterium on Lowenstein Jensen media, which finally lead to diagnosis.

Treatment should not be delayed as delay in treatment may result in less than optimal outcome.<sup>[7]</sup> Short course anti-tubercular therapy has a high recurrence in osteoarticular tuberculosis, so should be given for an 18 months.

The aim of anti-tubercular treatment is to eradicate the organism and to obtain a supple, pain free weight bearing functional foot. With treatment radiological changes do take place and cavities may persist for years, which have no clinical significance.<sup>[7]</sup>

## CONCLUSION

It is concluded that isolated cystic tuberculosis of medial cuneiform is rare. Open biopsy, histopathology, Ziehl Nielson staining and culture for mycobacterium tuberculosis confirms the diagnosis. Anti-tubercular therapy for a period of 18 months should be given for better prognosis and to prevent recurrence.

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