

# Tubercular Tenosynovitis of Extensor Tendons of Ankle : A Case Report

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## Learning Point of the Article:

Whenever we are dealing with a case of chronic slow growing musculoskeletal mass its must to keep musculoskeletal TB as differential for early diagnosis and treatment of musculoskeletal TB to prevent morbidity and complications such as joint arthritis, ankylosis, rupture of tendons.

## Abstract

**Introduction:** India being an endemic region for Tuberculosis (TB) has a high incidence of musculoskeletal TB with various presentations. Tenosynovitis is a rare presentation and few cases have been reported involving the hand and wrist but isolated involvement of extensor tendons at the ankle is even rarer and unreported.

**Case Report:** Thirty-five-year-old female patient presenting with a dumbbell-shaped swelling over the anterolateral aspect of right ankle with mild dull aching pain. MRI revealed altered signal intensities surrounding the extensor tendons at the ankle without the involvement of the joint. Surgical debridement was done and six-month ATT was given. Gross specimen revealed rice bodies and histopathological examination showed caseous necrosis and epithelioid cell granulomas.

**Conclusion:** Tuberculosis TB being endemic can have varied presentations, early diagnosis can be made if clinical suspicion for TB is considered. ATT is the mainstay of treatment, but surgical debridement is necessary for extensive lesions with compressive symptoms.

**Keywords:** Tuberculosis, tenosynovitis, rice bodies, dumbbell dumbbell-shaped mass.

## Introduction

Tuberculosis (TB) in India is still a major health threat and accounts for 1/4th of the total global cases. In 2018, 2.15 million cases of tuberculosis TB were reported in India [1]. Extrapulmonary TB tuberculosis (EPTB) for 20% cases, the prevalence increases to 40-50% in HIV positive patients [12]. Musculoskeletal TB accounts for 1-5% of the total cases and 10-18% of EPTB. Of the musculoskeletal TB cases, spinal TB is the most commonest (50%), followed by septic arthritis (28.3%), osteomyelitis (10.1%), tenosynovitis (4%), bursitis (2%), and pyomyositis (2%) [23, 34]. RNTCP has stated comprehensive guidelines for the management of pulmonary TB tuberculosis, but no specific guidelines are mentioned for the management of EPTB.

In an endemic country like India cases of musculoskeletal TB is not uncommon in orthopaedics clinic. Isolated cases of tubercular tenosynovitis without the involvement of the joint is rare and cases involving the wrist and hand have been reported. Extensor tendons at the ankle joint are seldom involved and have not been reported. The pathology of tubercular infection can easily be overlooked as a cause of a chronic slow-growing mass. We present a case with an atypical presentation of dumbbell-shaped tubercular tenosynovitis of the extensor tendons at the right ankle with rice bodies formation.

## Case Report

Thirty-five-years-old female patient, from Northern India, came to us with the complaint of swelling at the right ankle joint for the

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## Author's Photo Gallery



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**Figure 1:** Swelling over the anterolateral aspect of the right ankle.



**Figure 2:** T1 and T2 weighted MRI showing altered signal intensities involving extensor tendons and no involvement of the nearby bones or joint.



**Figure 3:** Superficial peroneal nerve branch stretching over the lesion.

past 8 months.

The patient has a history of trauma to the right ankle 1 year back and 2 months later the swelling appeared at the right ankle. The swelling was gradually increasing in size and was associated with mild dull aching pain. Three months back another swelling had appeared at the dorsal lateral aspect of the right foot. And for the past few weeks, a tingling sensation was present over the dorsal aspect of the right foot on prolonged standing and walking. On examination, 2 swellings of size 8x6 cm and 5x4 cm were present at the anterolateral aspect of the right ankle and proximal right foot, respectively (Fig. 1). The swellings were mildly tender with normal overlying skin. The swellings had a smooth surface, smooth, and defined margins and were soft in consistency and not adhered to the overlying skin.

MRI revealed a lesion with altered signal intensity along with rice bodies and inflammatory changes along with the extensor compartment tendons at the right ankle (Fig. 2). No involvement of the nearby bones and joints were seen. Routine blood investigations were normal and ESR was raised (45 mm/hr). No evidence of pulmonary TB was seen in the chest X-ray.

A surgical excisional biopsy of the lesion was planned. After regional anaesthesia, the limb was betadine scrubbed, painted, and draped. Around 10 cm long skin incision was made over the swelling. Superficial peroneal nerve was dissected and the lesion was exposed (Fig. 3). The lesion extended beneath the

extensor retinaculum to the dorsum of the foot (Fig. 4). The Extensor retinaculum was cut and the lesion was thoroughly excised. The Extensor retinaculum was repaired and wound closure was done.

Macroscopically, the tissue excised contained rice bodies (Fig. 5). Histopathological examination revealed fibro collagenous tissue showing epithelioid granuloma with giant cells, caseous necrosis and lymphocytes, suggestive of the tubercular lesion (Fig. 6).

The patient was started on ATT and continued for 6 months. The patient had no symptoms and no signs of recurrence at 1-year follow-up (Fig. 7).

### Discussion

Musculoskeletal TB has been known to present as monoarthritis involving the large joints of the body, hip and knee joints, and less commonly other joints [45, 56]. Tendon involvement is rare and cases have been reported involving mostly the flexors tendons at the wrist and hand which can mimic de Quervain's disease, rheumatoid arthritis, gout or ganglion cyst and may be associated with compressive symptoms like CTS [67, 78, 89]. The involvement of tendons around the ankle is extremely rare.

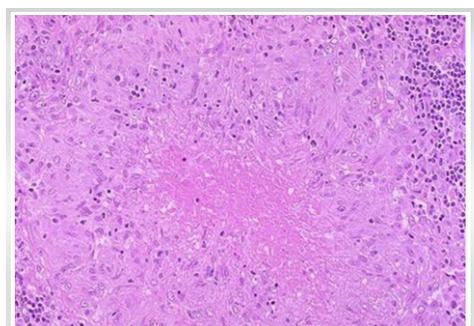
TB Tuberculosis being endemic in India should always be kept as a differential diagnosis. Thorough history taking, clinical examination and investigations aid in making a pre-op



**Figure 4:** Lesion extending beneath the extensor retinaculum to the dorsum of the proximal right foot.



**Figure 5:** Macroscopic appearance showing pearly white rice bodies in the lesion.



**Figure 6:** Epithelioid cells with lymphocytes and caseous necrosis.



Figure 7: Healed lesion at 1-year follow-up.

diagnosis. MRI is very helpful in making a diagnosis; in this case, hypointense rice bodies were seen in the T2 weighted image involving the extensor tendons at the ankle. Rice bodies formation is rare and is usually associated with rheumatoid arthritis and mainly found in the joints or bursae. It can also be seen in cases of SLE, seronegative arthritis and chronic non-specific arthritis [910]. The rice body formation in isolated tubercular tenosynovitis without the involvement of the neighbouring joint is very rare and has been seen in our case.

Dr. Tuli has recommended anti-tubercular chemotherapy for tubercular tenosynovitis and surgical debridement if no improvement by chemotherapy. But however, surgical debridement has been described as beneficial in extensive lesions [101]. Thorough debridement and excision decrease

the disease burden and also reduces the chance of recurrence and should be carefully opted for. Early diagnosis and appropriate treatment helped in the elimination of the disease with no recurrence at 1-year follow-up.

Some of the published TB tendon synovitis is tabulated in the below table.

### Conclusion

TB Tuberculosis, being a major health threat in developing countries, can have varied presentations and must be kept as a differential diagnosis in all cases of chronic tenosynovitis and chronic slow-growing mass. The wide arsenal of investigations aid in making a pre-operative diagnosis including MRI and USG. Treatment must include anti-tubercular chemotherapy combined with surgical debridement for extensive lesions if required.

### Clinical Message

Early diagnosis and treatment of musculoskeletal tb prevents morbidity and complications likesuch as joint arthritis, ankylosis, rupture of tendons, and must always be included as a differential while working up a case of chronic slow slow-growing musculoskeletal mass.

**Declaration of patient consent :** The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient's parents have given their consent for patient images and other clinical information to be reported in the journal. The patient's parents understand that his names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

**Conflict of interest:** Nil **Source of support:** None

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