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CASE REPORT

Tubercular Tenosynovitis of Extensor Tendon of Ankle: An Incidental Finding of a Rare Case

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ABSTRACT

BACKGROUND

Tuberculosis (TB) remains a significant global health issue, with both pulmonary and extrapulmonary forms. This report highlights a rare case of tuberculous tenosynovitis affecting the extensor tendons of the ankle in a 13-year-old boy who presented with progressively painful swelling following contact with a neighbour suffering from pulmonary TB. Initial assessments, including ultrasound, suggested a ganglionic cyst. Multiple rice bodies were discovered during surgical excision, and histopathology confirmed the diagnosis of tuberculous tenosynovitis. The patient was treated with antitubercular therapy for nine months, resulting in complete recovery without recurrence at a one-year follow-up. This case emphasizes the importance of considering TB in differential diagnoses of atypical musculoskeletal presentations, particularly in endemic regions like Nepal.

KEYWORDS

extensor tendons; musculoskeletal infection; rare case; tubercular tenosynovitis

INTRODUCTION

Tuberculosis (TB) has been a serious health issue for centuries, persisting as a challenge to humanity across generations. Despite advancements in modern medicine, TB remains a tough challenge even today and is still impacting the lives of people. Extra-pulmonary tuberculosis (EPTB) accounts for approximately 15% to 20% of all TB cases among immunocompetent adults[1], with osteoarticular tuberculosis representing about 9% of these cases.[2] Musculoskeletal TB accounts for about 18% of EPTB, with spinal TB or tuberculous spondylodiscitis being the most common (50%) followed by septic arthritis (28.3%), osteomyelitis (10.1%), tenosynovitis (4%), bursitis (2%), and pyomyositis (2%).[3, 4] Even in the orthopaedic clinics of endemic countries like Nepal, cases of musculoskeletal TB are not very common.

Tuberculous tenosynovitis is an uncommon manifestation, predominantly affecting the flexor tendons of the hand and wrist, while the involvement of the extensor tendons on the ankle is exceedingly rare.[5] The involvement of the ankle tendons has been sporadically reported, with cases involving the achilles tendon, anterior tibial tendon, extensor hallucis longus, extensor digitorum brevis, extensor digitorum longus and peroneal tendons.[3, 6-10]

The pathogenesis of the disease suggests two distinct hypotheses: direct invasion and hematogenous spread from the primary focus.[11] Tuberculous tenosynovitis progresses through three distinct stages. In the hygromatous stage, the tendon sheath is filled with serous fluid, while the tendon remains unaffected. Moving to the serofibrinous stage, granulation tissue develops along the tendon. Finally, in the fungoid stage, the condition escalates to caseous necrosis, abscess formation, and potential tendon rupture.[12,13,14]

This report presents a rare case of tubercular tenosynovitis affecting extensor compartment tendons at the ankle joint. This condition is not frequently encountered and has rarely been reported, which emphasizes the importance of considering TB tenosynovitis in differential diagnoses by clinicians, especially in endemic countries like Nepal, where TB remains a significant health problem.

CASE REPORT

A 13-year-old boy presented to our OPD with a 9-month history of swelling on his left ankle, which was progressive, initially

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painless and later mild painful, dull aching and increasing with movement of the ankle, decreasing with some medications. There was no history of trauma, fever, night sweats, loss of appetite, loss of weight, or any other joint involvement. The patient had no history of tuberculosis, but he had a contact history of pulmonary tuberculosis with neighbours.

Figure 1. Multiple rice bodies around the extensor tendon of the ankle.

He had a full range of plantar flexion, dorsiflexion, inversion and eversion. The pain was exacerbated by plantar flexion. There was no neurovascular deficit and muscle wasting.

Figure 3. Healed wound on follow-up following excision of TB Cyst

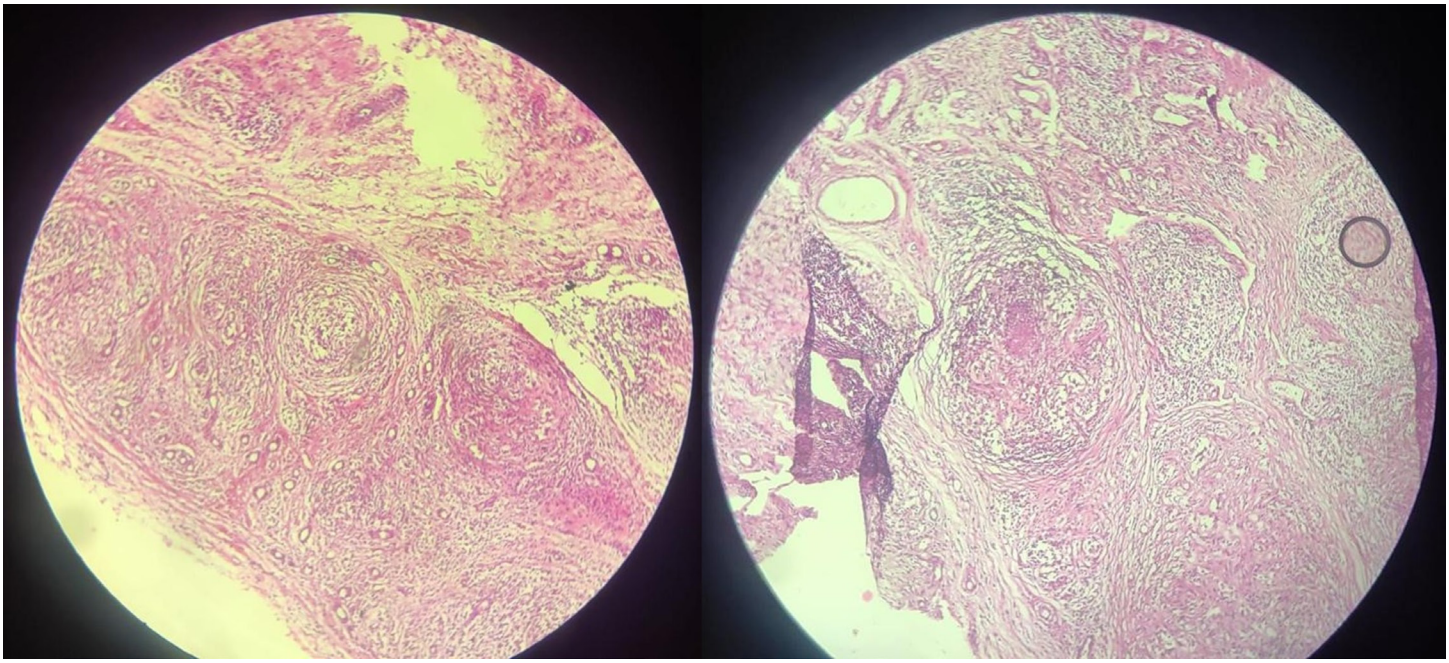

Figure 2A & 2B. Photomicrograph of histopathological section of the rice bodies/synovium stained with hematoxylin-eosin (x100) showing granuloma formation, typical of tuberculosis infection.

Clinical findings

On examination, there was a dumbbell-shaped swelling of 8×6 cm^2 over the anterolateral aspect of the left ankle. The swelling was mildly tender with normal overlying skin. The swelling had a smooth surface and a smooth and defined margin. It was soft and consistent and did not adhere to the overlying skin.

Diagnostic assessment and interpretation

Lab findings showed normal blood count, ESR, and CRP; no evidence of pulmonary tuberculosis was seen in the chest x-ray. Sputum for AFB was negative. Ultrasound of the ankle showed multiloculated cystic swelling surrounding the tendon-like features of a ganglionic cyst.

Therapeutic Intervention

Under spinal anesthesia, an excisional biopsy was done. When we opened the surgical site, we were amazed to observe the thickening of the tendon sheaths with yellowish fluid containing multiple small, scattered white rice-like objects representing typical rice body appearance. (Figure 1) The cyst was excised, tenosynovectomy was performed, and the specimen was sent for histopathology examination and AFB staining. Histopathology showed epithelial granuloma with Langhans giant cells (Figure 2A & 2B). The patient was started on ATT and continued for 9 months. The patient had no symptoms and no signs of recurrence at the one-year follow-up.

On follow-up after 1 year, the wound appeared healed with no discharge or signs of inflammation. (Figure 3)

DISCUSSION

Musculoskeletal TB mostly presents as monoarthritis, usually involving large joints of the body like hip and knee with rare involvement of tendons, but, when it occurs, mostly affects the flexor tendons in wrist and hands mimicking conditions such as de Quervain's disease, rheumatoid arthritis, gout, ganglion cyst or malignancy associated with compressive symptoms like carpal tunnel syndrome as a result of thickened and edematous tendon sheath. The rarity of tendon involvement in TB further complicates diagnosis. [3,15]

Along with this fact, insidious onset of the disease, slow progression, concomitant pulmonary TB not always being present combined with indolent symptoms often delay the diagnosis and due to the same reasons, infectious causes are not typically considered early on. Thus, tubercular tenosynovitis might not be an initial consideration in the differential diagnosis.[3,15] Our patient had no significant history that would directly point towards tubercular tenosynovitis. He only presented with a painless swelling that gradually increased in size, without any history of trauma, based on which it was challenging to suspect TB. However, in Nepal, where TB is endemic, clinicians should maintain a high index of suspicion in such presentations.

Despite common risk factors for tubercular tenosynovitis, such as previous trauma, corticosteroid injections, age over 60, low socioeconomic status, alcoholism, and immunosuppression[16], our patient exhibited no clear association with these factors.

Thorough history taking, physical examination and appropriate investigations are crucial for accurately diagnosing any disease. Initial investigations, including CBC and ESR, were within normal limits in our case. An ultrasound (USG) of the affected ankle revealed a hypoechoic lesion with features suggestive of a ganglionic cyst, leading to a plan for surgical excision. Upon incision, we encountered the cyst, but beyond our expectations, we discovered some whitish shiny bodies, which we suspected to be rice bodies. Rice bodies are not a peculiar feature of TB tenosynovitis, as they can be seen in rheumatoid arthritis as well.[12] Rice bodies or melon seeds are found to be present in approximately 50% of the cases of tubercular synovitis and formed due to micro-infarction after intra-articular synovial inflammation and progressed by fibrin.[17]

When the biopsy report of the excised cyst confirmed tubercular tenosynovitis, a chest X-ray was performed to check for pulmonary tuberculosis. However, no cavitary lesions were found. Rice body formation in isolated tubercular tenosynovitis without any involvement of the surrounding joints is extremely rare, as demonstrated in our case.

To diagnose tubercular tenosynovitis, imaging modalities play an important role as USG and MRI can show tendon thickening, fluid within the tendon sheath, thickening in synovial membrane and active inflammation around a tendon.[8] Rice bodies seen in Tubercular tenosynovitis are visible on USG and MRI, but small ones may be missed on USG and detected on MRI.[8] This might be why the USG report did not show features of rice bodies in our case. Computed tomography is not used for primary diagnosis of Tubercular tenosynovitis but is useful for showing associated bone destruction.[8]

Studies show that anti-tubercular therapy (ATT) along with tenosynovectomy provides remarkable results with low recurrence while we performed complete debridement of the involved tissue along with ATT.[17]

Recurrence of tubercular tenosynovitis is not uncommon, emphasizing the importance of completing a full course of anti-tubercular drugs to prevent recurrence, and long-term follow-up is necessary to monitor any signs of recurrence, ensuring optimal treatment outcome.[18,19]

CONCLUSION

This case report shows the importance of the very rare presentation of tubercular tenosynovitis in the ankle with a typical rice body appearance. Features of such a condition may be very nonspecific and often misdiagnosed for ganglionic and other cysts, so a high index of suspicion by radiologists and orthopaedics may be needed.

CONSENT

The patient signed the case report consent form; the original article is attached to the patient's chart.

CONFLICT OF INTEREST

None

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