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Case Report

Tubercular tenosynovitis of extensor tendons of foot--a rare presentation of musculoskeletal tuberculosis in an infant

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ABSTRACT: Tuberculosis of soft tissues as a result of spread from adjacent bone or joint is a well recognized entity. However isolated tuberculous pyomyositis, bursitis and tenosynovitis are rare, constituting about 1% of skeletal tuberculosis. Tubercular tenosynovitis commonly involves tendon sheaths of wrist and hand. Cases of tuberculous tenosynovitis of foot and ankle are rare. A rare case of tubercular tenosynovitis of extensor tendons in a one year child has been reported here with its clinical presentation, treatment and a brief review of literature.

KEY WORDS: ***Tuberculosis; Musculoskeletal; Tenosynovitis***

INTRODUCTION

Tuberculosis is a well recognized health problem plaguing mankind since time immemorial. Extra-pulmonary tuberculosis accounts for fifteen percent of all tubercular lesions, of which osteo-articular tuberculosis constitutes about nine persent[1]. Some of the literature reports that extra-pulmonary tuberculosis involvement of the musculoskeletal system accounts for only one to five percent of cases[2]. Huang J et al[3] reported the proportion of extra-pulmonary tuberculosis to pulmonary tuberculosis to be 9.7-11.8 percent. Tuberculosis of tendon sheath of hand is an established condition, but that of foot tendons is even rarer[4]. This article presents a rare case of tubercular tenosynovitis of extensor tendons of foot in a one year child.

CASE DETAILS

A one year old boy from Jaunpur, Uttar Pradesh presented to our OPD with history of trauma followed by pain and swelling on the left ankle and foot, which was more prominent on the medial side. Incision drainage was performed by a local practitioner. Despite the treatment, swelling continued to increase, and so the child reported to our OPD. There was no history of fever or massage. On examination, we found that the child was irritable, probably due to pain without any sign suggestive of toxaemia. There was an ill-defined soft to cystic swelling around medial side of the ankle and foot, which was pointing on the scar (**figure 1**). The local temperature of the swelling was not raised, but tenderness was present. The skin over the swelling was shiny. The swelling was not freely mobile in any direction. There was no evidence of any systemic involvement or any other joint involvement. The swelling was aspirated by aseptic technique, which revealed a few drops of straw coloured fluid, which was sent for culture sensitivity and AFB staining.

Figure 1: Clinical photo of lesion showing multiple sinuses

Haemogram revealed anaemia (Hb- 8.5gm %), leucocytosis (13,300/mm^3), lymphocytosis (78%)

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with elevated ESR (56 mm/hr). Mantoux test was not performed as the child was already immunized and there was the likelihood of a false negative test was high. AFB staining of the fluid from the swelling was negative. The fluid was sterile after 48 hours of culture and sensitivity. PCR test was performed from the fluid, which was positive for *Mycobacterium tuberculosis*.

AP and lateral radiographs (**figure 2**) of the ankle and foot revealed an area of rarefaction in talus, with normal calcaneum, distal tibia and malleoli. Posteroanterior view of chest radiograph was within normal limits.

Figure 2: AP and Lateral view of x-ray ankle

Magnetic resonance imaging (**figure 3a** and **3b**) of ankle and foot revealed an ill-defined lobulated lesion displaying signal intensity alterations hyperintense on T2W1 and hypointense on T1W1 involving the extensor compartment of the dorsal aspect of foot. The tendons involved were extensor hallucis brevis, extensor digitorum brevis and extensor digitorum longus. Similar signal intensities were also noted in the underlying bones namely epiphyseal ends of tibia, talus, navicular, cuneiform and base of first metatarsal. Joint cavity was normal with minimal fluid.

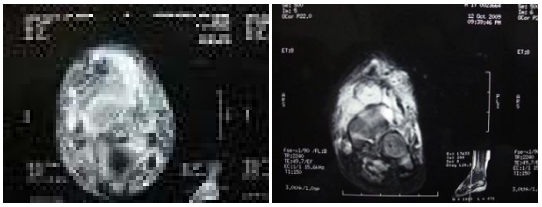

Figure 3a & b: MRI Picture showing the lesions

Under general anaesthesia, surgical decompression of the tenosynovial sheath was done. There was presence of thick blackish granulation surrounding the extensor tendons. This granulation tissue and synovial membrane from the ankle was sent for histopathological examination and were typical for tuberculosis. Under the supervision of a paediatrician, systemic antitubercular chemotherapy was started and the ankle was immobilized in below-ankle POP for six weeks. ATT was stopped after one year. The child is still on active follow up and was asymptomatic even eight months after stopping the drugs.

DISCUSSION

Farer et al reported the relative frequencies of extrapulmonary tuberculosis. They reported the incidence of osteoarticular tuberculosis to be even less than 2 cases/100000 population[1]. Dhillon et al reported calcaneal tuberculosis to be the most common site of involvement in a series of seventy four cases of ankle and foot tuberculosis[5]. Tubercular tenosynovitis was first described by Acrel in 1977[6]. A complete and detailed description of pathological and clinical features of tubercular tenosynovitis was done by Kanavel[7]. Tuberculosis of tendon sheaths and bursae is not very common, but amongst these the most frequent involvement was that of flexor tendons of forearm, accounting for about five percent of osteoarticular tuberculosis[8]. Involvement of extensor tendons is even rarer[4]. Two cases of tubercular tenosynovitis of extensor tendons of foot were reported in a series of forty five patients with fifty two lesions of tuberculosis of tendon sheath and bursae[9]. A series of twenty one cases of tubercular tenosynovitis involving tendoachilles, peroneal and extensor tendons of ankle and feet were reported[10]. Isolated reports of the involvement of peroneal, anterior tibial, posterior tibial and extensor hallucis longus tendons are available[11-14]. Tendons sheaths may be involved secondary to involvement of underlying bones or due to gravitational spread or there may be a primary haematogenous tubercular infection of sheaths, which may spread to the underlying bone[3].

As per literature, most of the patients of tubercular tenosynovitis were more than sixty years old[4]. The diagnosis is usually delayed because of lack of suspicion as there may be the same clinical presentation in rheumatological disease and/or absence of tubercular disease elsewhere or in the past. In our case the delay was not much as the clinical picture of the disease and its response to previous surgical treatment raised the suspicion of an unusual lesion.

In our case, primary involvement of extensor tendon sheaths leads to secondary spread to underlying bones and ankle joint as suggested by the short history of one month, simultaneous appearance of pain and swelling and MRI findings which document a greater involvement of the extensor compartment and tendon sheaths rather than underlying bones. We did not order Mantoux test as the child was already vaccinated and hence there was a possibility of false results. AFB staining of the joint fluid is reported to be positive in only 20-25 percent cases[15], but it was negative in

our case. The diagnosis in our case was confirmed by histopathological examination of the tissue taken from the sheath of extensor tendons of the foot.

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