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Isolated tuberculosis of ankle joint: A rare report

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ABSTRACT

Isolated tuberculosis of any joint is a rare entity and often mimics other conditions. Thus, diagnosis and timely treatment is often delayed in these cases. We here report a case of tuberculosis of synovial tissue of ankle in a 46 year old female. She had suffered for ten years prior to the diagnosis. The diagnosis was confirmed by MRI study of the joint and needle biopsy from the thickened synovium. Relevant literature pertaining to tubercular arthritis has also been reviewed at length.

INTRODUCTION

Tuberculosis is a very common disease in the developing world and this disease may have diverse presentations. Overall in India, there is a recent trend of increasing incidence of extra-pulmonary tuberculosis, especially bone and joint tuberculosis [1]. A large number of tuberculosis cases occurs in the economically productive age group and this leads to significant public health burden for any society [1].

While commoner presentations of the disease like hemoptysis or ascites are comparatively easier to diagnose, bone and joint tuberculosis often presents a diagnostic and therapeutic challenge. Especially tuberculosis of single joints are notorious for their chronic course and delay in diagnosis [2]. We here present a case of isolated tuberculosis of the ankle joint from Eastern India.

THE CASE REPORT

A 46 year old female housewife presented with gradually progressive swelling and pain in her left ankle for the last ten years. She was unable to bear weight on that ankle for the last two years. When she presented to this hospital, the left ankle was found to be swollen (figure 1), tender with normal local temperature. Attempt to stand on that leg led to shooting pain. Both active and passive range of motion of the left ankle joint was limited to 20º. Joint fluctuation was negative. There was no other arthropathy anywhere else in her body. There was no skin rash, oral ulcer, dysuria, lymphadenopathy or fever. Vital signs were stable. Neurological examination of lower limbs was completely normal. There was no bleeding manifestation. She did not have a history of diabetes or any rheumatological disorder. Also, there was no history of trauma or any surgery to that joint or in the vicinity. She had never had any contact with a tuberculosis patient.

The patient had been treated for this joint disease for a long time with analgesics. She had also received various indigenous therapies like local heat application and massage. However, she denied taking any steroids or other immunosuppressive drugs, either locally or systemically.

Initial laboratory examinations revealed hemoglobin of 8 gm/dl with total leukocyte count of 9000/µL (N: 70; L: 22) and platelet count of 145000/ µL. ESR was 67 mm in the 1st hour. CRP was 23 mg/L (N< 6). X ray of the feet revealed (Figure 2) gross osteoporosis of the bones of left feet around ankle. However, the joint margins were maintained. Mantoux test was 6 mm. Serum Anti-nuclear factor and rheumatoid factor were negative. Serum uric acid was 4.8 mg/dl. A chest X ray did not reveal any abnormality. MRI scan of the left ankle revealed (Figure 3) massively thickened synovium of the left ankle with intense contrast enhancement. T1 images showed signal changes in the periarticular bones too. There was minimal collection in the joint space. Thus, joint aspiration was not attempted. Finally, a USG-guided needle biopsy was taken from the synovium which showed (figure 4) frank caseous granuloma in the synovial tissue with Langhans giant cells. This was suggestive of tuberculosis.

The patient was started on 4-drug anti-tubercular therapy

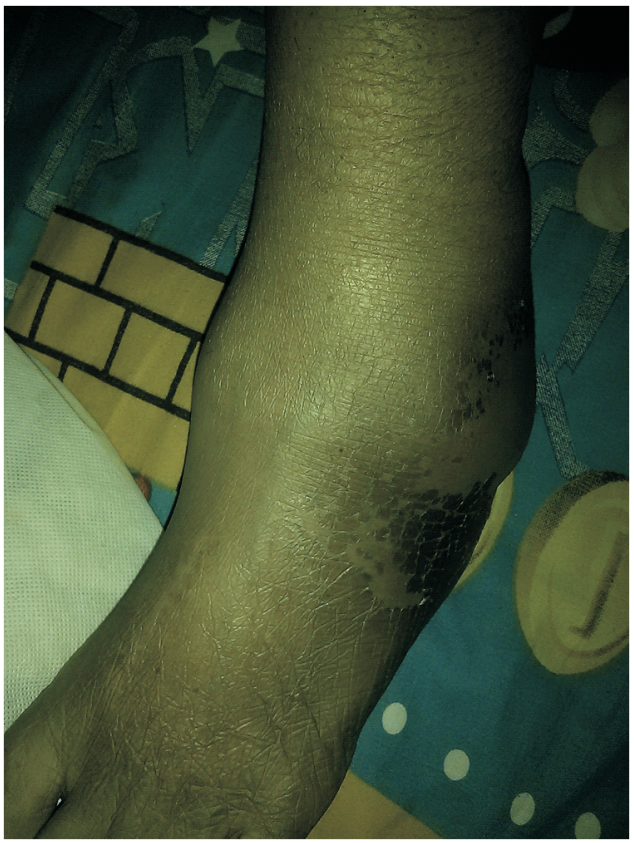

Fig 1 : The swollen left ankle of the patient

(daily regime) with ankle orthosis. At six months' follow up, the pain and swelling has decreased. However, she still has difficulty in bearing weight on that joint.

DISCUSSION

Arthritis in tuberculosis is caused either by direct infiltration of the joint by mycobacteria or aseptic reactive arthritis [2]. The latter usually tends to be polyarticular while actual tubercular infection usually involves a single joint. Osteoarticular tuberculosis can be of various types like spondylitis, peripheral arthritis, tenosynovitis, osteomyelitis or Poncet's disease [3]. Isolated joints are usually involved by hematogenous spread or inoculation from local lymph nodes, foci of tubercular osteomyelitis or other contiguous sites. Early diagnosis and full treatment can lead to complete resolution of the joint pathology. However, often, tubercular monoarthritis is initially misdiagnosed as traumatic or degenerative arthritis and by the time the proper diagnosis is made, bone and cartilage in and around the joint may be destroyed irreversibly [4]. Sometimes, tubercular osteomyelitis near a joint may also mimic arthritis [5]. Diagnosis of tubercular arthritis is done by microbiological examination of synovial effusion or histological study of joint tissue [6]. Unlike pleural or peritoneal fluid, tests like synovial fluid protein or ADA levels are not deemed useful. In our case, the diagnosis was clinched by finding caseous granuloma in the synovial tissue. Tubercular arthritis can have features like pannus formation, cartilage destruction, bone erosion, abscess, periarticular tenosynovitis or bursitis and bone marrow edema [3]. Many of these features are well delineated on MRI. Common MRI features of tubercular arthritis are hypertrophy and intense early contrast enhancement of synovium on T1, bright tendon sheaths on T2, abscesses, bursa around joints and invading granulation tissue forming cystic structures (hypointense on T1 and hyperintense on T2) inside bones [3]. In our case, synovial hypertrophy with contrast enhancement was seen. Sometimes, some other inflammatory arthritis like rheumatoid arthritis may have similar presentations. In such cases, subtle signs like large bone erosions, uniform synovial thickening and extra-articular cysts, as mentioned above, point in favour of tubercular aetiology [7]. Isolated monoarticular involvement as first manifestation of tuberculosis is very rarely reported. Sometimes, tuberculosis may complicate a pre-existing joint disease [8]. In such cases, it is very important to differentiate between a monoarticular presentation of a polyarticular disease and novel tubercular infection. Sometimes, treatment for pre-existing arthritis with repeated local steroid injections may predispose to local tuberculosis [8]. Tuberculosis of joints is a very rare entity. Hence internists should maintain a high degree of suspicion for this disease. Timely intervention can prevent subsequent loss of function to a great extent.

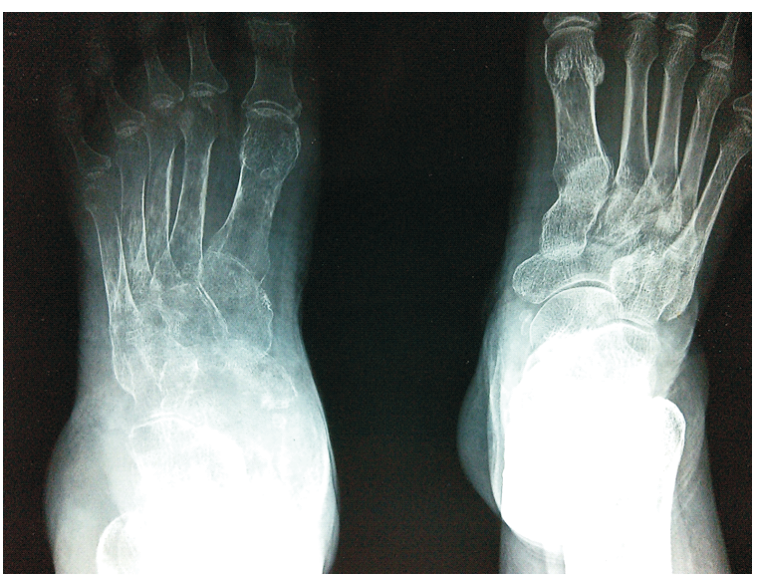

Fig 2 : X ray of left ankle showing peri-articular osteoporosis (compare with right side)

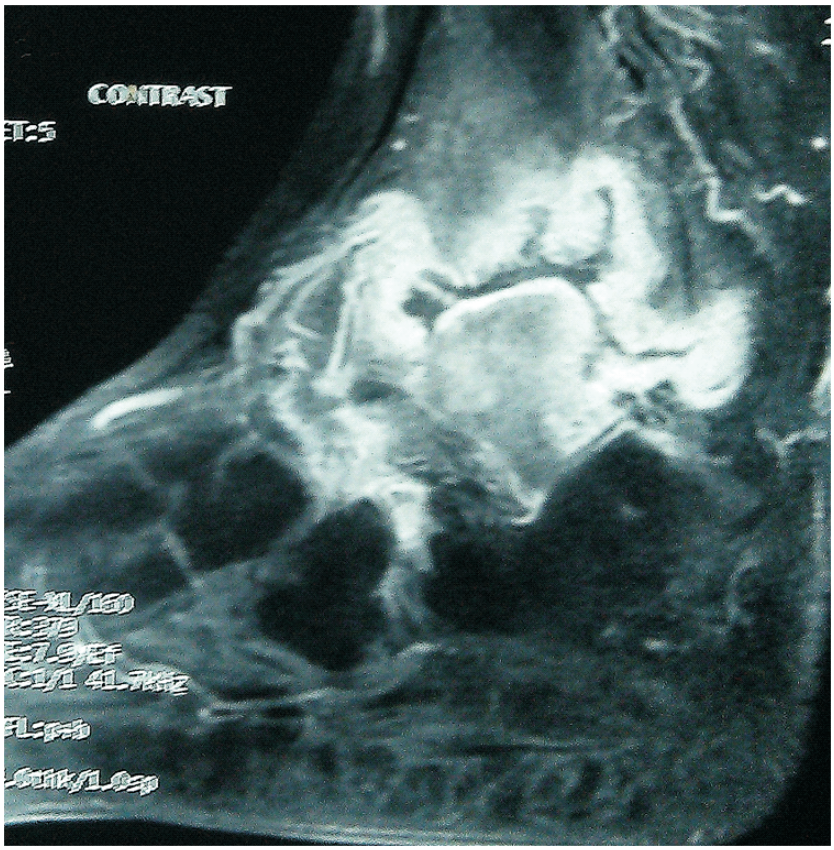

Fig 3 : XMRI of left ankle showing uniformly thickened synovium enhanced with contrast

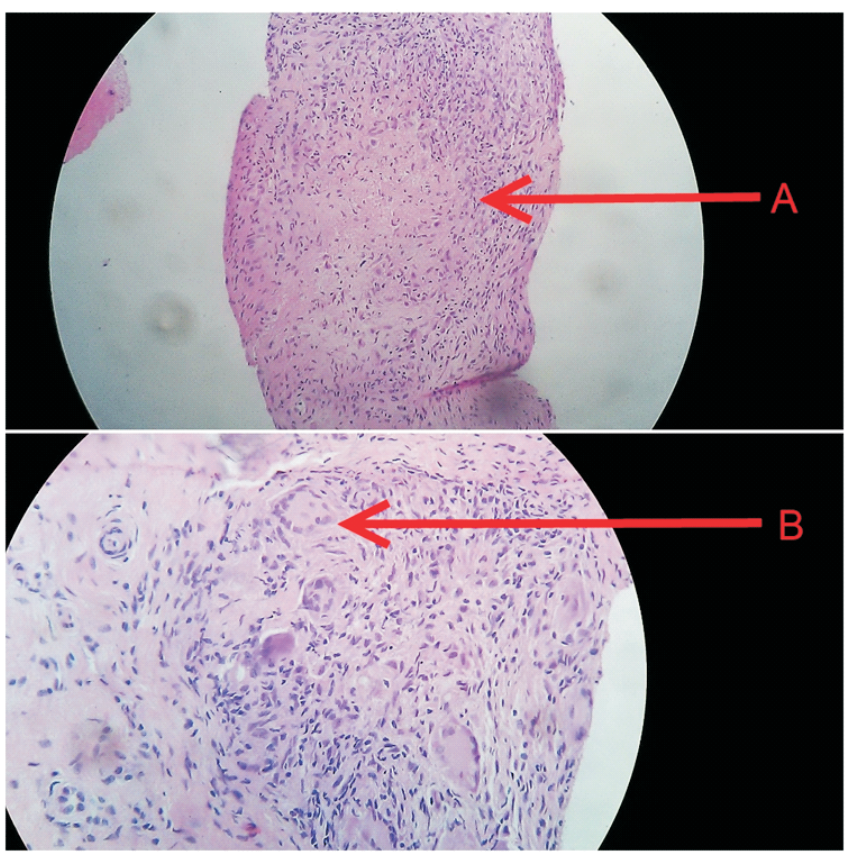

Fig 4 : Synovial biopsy specimen showing caseous granuloma (A) and Langhans Giant cells (B)

CONCLUSION

Tuberculosis should always be excluded in long standing monoarthritis cases, especially in endemic zones like India.

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