A Rare Case of Tuberculosis Affecting Hand and Wrist

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Background;
Hand and wrist Tuberculosis is recognized as a rare manifestation of osteoarticular tuberculosis. ***Case presentation*** *;A 54 year old female who was on Immunosuppressive medications since 2016, presented to with 6 months history of painful Left hand and wrist joint swelling. MRI of the hand revealed Edema and severe osteopenia with carpal bone erosions and synovial thickening. Synovial biopsy for Mycobacterium Gene x pert became positive. Histopathology revealed multiple caseating and non-caseating granulomata.* ***Conclusion;****Hand Tuberculosis is considered as a great mimic. So strong clinical suspicion is required in evaluating chronic hand pain in order to diagnose.*

Keywords; Tuberculosis*, Arthritis, Hand*

Introduction

Tuberculosis , which is caused by *Mycobacterium tuberculosis* complex, is one of the oldest diseases known to affect humans .Despite recent advances in medical technology Tuberculosis is still being a major human killer worldwide. Almost all the organs of the body can get affected by tuberculosis causing wide variety of presentations.
Osteoarticular TB accounts for 10-11% of Extrapulmonary Tuberculosis comes approximately to about 1–3% of all cases of TB. [1]

Vertebrae, knee and hip are the usual sites to get involved in Osteoarticular TB. [2]

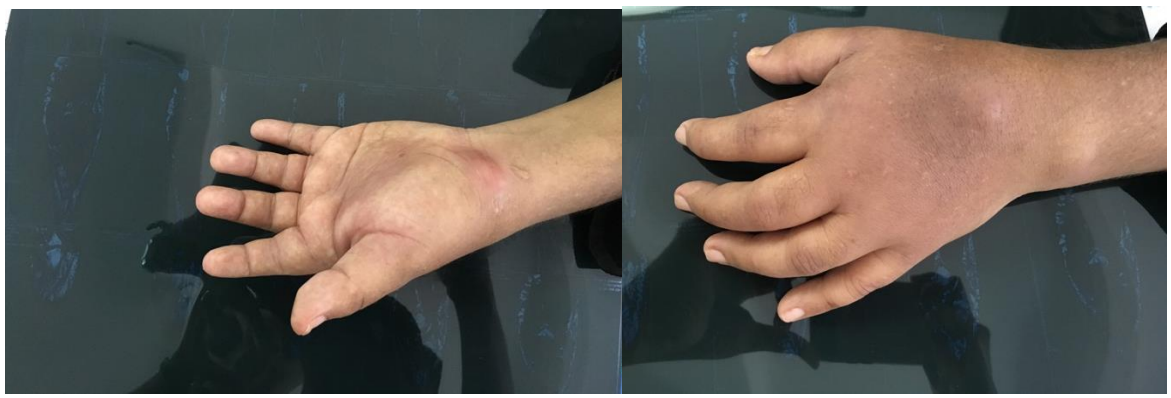
Involvement of Hands and wrist is rarely seen.[3]

We report a case of skeletal Tuberculosis affecting hand and wrist.

Case Report

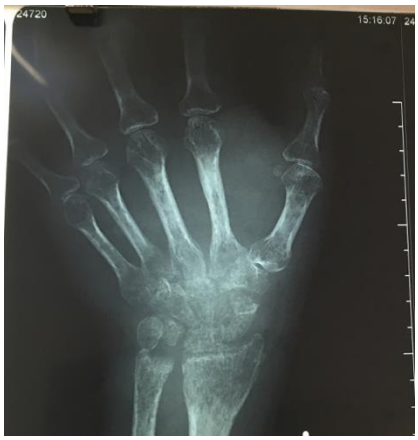
54 year old female with a history of Autoimmune hemolytic anemia who was on Immunosuppressive medications (Prednisolone and azathioprine) since 2016, presented to us with 6months history of painful Left hand and wrist joint swelling. She didn't have any other small or large joint involvement. But She noticed significant loss of appetite. She had been seen by several doctors and treated with many anti-inflammatory agents during last few months. There was no past history of tuberculosis or DM.

Examination showed diffusely swollen fingers and hand involving both dorsum and palmer aspects of the left hand. (Figure 1)

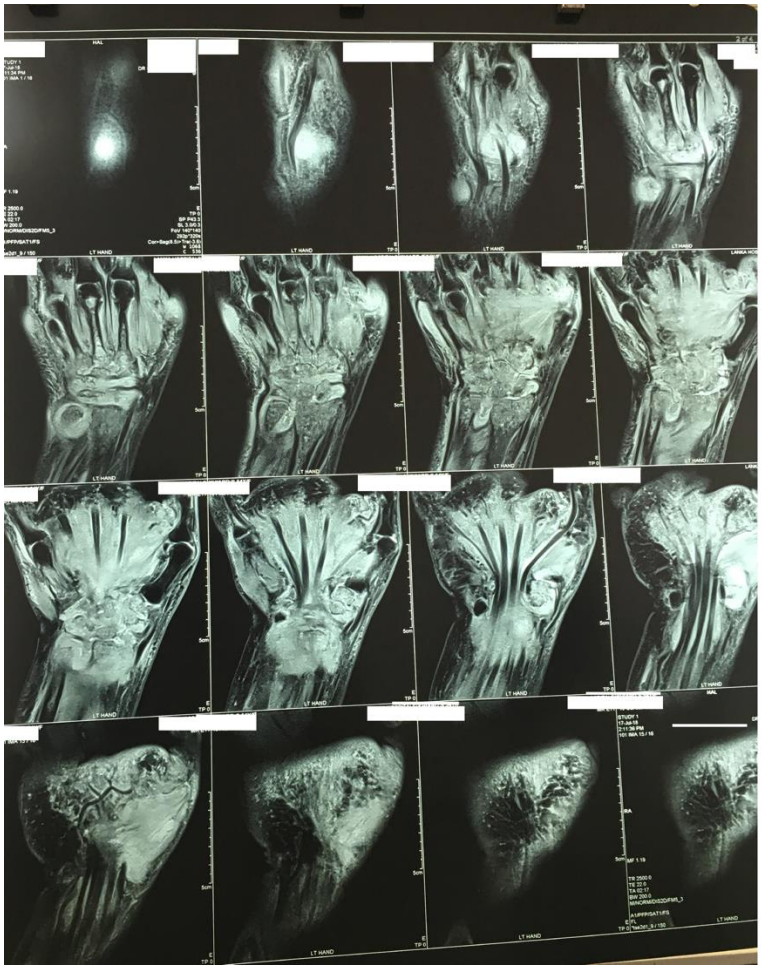


There was a fluctuant lump over the anterior aspect of the Left wrist joint with overlying skin erythema. Both active and passive movements were restricted at wrist and fingers.

X ray hand showed periarticular osteopenia with loss of density in carpal bones and marked soft tissue swelling. (Figure 2)



MRI of the hand revealed Edema and severe osteopenia with erosions involving Left Carpal bones, Metacarpals distal radius and ulnar, Ulnocarpal and radioulnar joint effusion with thickened synovium noted with multiple surrounding fluid pockets. (Figure 3)



Synovial biopsy of the Left wrist joint was performed by consultant orthopedic surgeon and noted cold abscess formation with caseous material during the procedure. Synovial biopsy for Mycobacterium Gene x pert became positive.

Histopathology report revealed multiple caseating and non-caseating granulomata within a heavily inflamed stroma. Areas of large caseating necrosis with surrounding sheets of histiocytes are also noted.

Screening for Pulmonary TB is negative including Chest x ray and sputum AFB. ESR was elevated of 112mm in first hour.

Patient was started on Anti tuberculous medication planned for one year period fallowing receiving biopsy report.

Discussion

Tuberculosis of the hand and wrist is an uncommon manifestation of the Osteoarticular TB. Only 10% of patients with osteoarticular TB manifest Hand and wrist involvement.[4]

It starts in the tenosynovium and subsequently spreads to the bone or joints causing tenosynovitis or both tenosynovitis and arthritis.[3]

initial symptoms are non-specific. Slowly progressive swelling of the hand and wrist with joint pain would be the usual presentation. Joint effusion, joint stiffness ,deformities with limitation of movement, and discharging sinuses are also documented in advance cases. Associated Constitutional symptoms including low-grade fever with night sweats, weight loss and anorexia are also found.

Basic investigations may show only mildly raised inflammatory markers. Xray findings are nonspecific. bone Sclerosis and osteolytic lesions are the main radiographic features which are common to other conditions as well. Osteopenia with periosteal reaction, narrow the joint space and surrounding soft-tissue swellings , bone cysts are also identified features.[5]

CT AND Magnetic resonance imaging (MRI) are not specific but would help in determining the extent of the lesion. [6] Synovial or bone biopsy for acid-fast bacteria staining , culture , histology and polymerase chain reaction (PCR) should be performed for the definitive diagnosis. Percentage of positivity are 32%, 80%, 65% and 63%, respectively.[5]

Positive Mantoux may present but false negatives are seen frequently.[5] However Culture of *Mycobacterium tuberculosis* from bone tissue is the gold standard for the diagnosis of osseous tuberculosis.

During the surgery Presence of more extensive and adherent tenosynovitis with rice bodies (fibrinous masses in) synovial sheath favors the diagnosis of tuberculous.

It is recommended to give prolong course of ATT with 7 to 10 months continuation phase. Isoniazide, Rifampacin, Pyryzinamide and Ethambutol for initial 2 months fallowed by Isoniazide and Rifampacin for continuation phase.

Hand Tuberculosis is considered as a great mimic, most of the reported cases carried the diagnosis of rheumatoid arthritis , nonspecific synovitis prior to the final diagnosis.[3] Because of that Long delay between the onset of symptoms and the diagnosis of hand tuberculosis is emphasized in most of the reported cases.[3] So strong clinical suspicion is required in evaluating chronic hand pain and swelling to avoid devastating complications.

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