
Chronic Tenosynovitis of Extensors of Hand

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ABSTRACT

Twenty percent cases of tuberculosis usually present as musculoskeletal tuberculosis with 10% amongst those involving hand and wrist. The common musculoskeletal sites of tuberculosis include hip, spine and knee. This case presented as ganglion like soft tissue mass (3cm*2cms) on the dorsum of the wrist joint. The patient first noticed swelling 3 months back which had been increasing in size gradually thereby causing pain, tenderness and limited range of motion. With an impression of a ganglion cyst-like soft tissue mass, the patient underwent surgical excision and the pathological report indicated tuberculosis and anti-tubercular treatment was started. Although the case described here is rare, preoperative evaluation and investigations can help considerably. Additionally, postoperative pathology can help define tuberculosis as medical treatment plays vital role in the treatment of tuberculosis.

KEY WORDS: dorsal, ganglion, tuberculosis, wrist

INTRODUCTION:

Tuberculosis poses considerable global burden on public health and modern healthcare. In 2015, there were around 10.4 million new tuberculosis cases worldwide, of which 5.9 million were men, 3.5 million were women and 1 million were children.^[1]

Tuberculosis of hand and wrist is very rare and has varied clinical presentation with involvement of bones and soft tissues. There is a need for better understanding of these cases as there is an increase in the number of atypical tuberculous presentations due to increasing number of patients with acquired immunodeficiency and very few published case reports and available treatment options. As the diagnosis is usually difficult in early stages, time can significantly affect the outcome.^{[2][3]}

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CASE REPORT

A 58 year old female patient was referred to our tertiary care hospital with pain, swelling and reduced range of motion of the left wrist joint (Figure 1). Site of swelling was dorsum of the wrist. The complaints of the patient had been persisting for more than 3 months. There was no history of any wrist trauma, surgical intervention or drug abuse, and also general medical history was not significant, no family history of tuberculosis infection and there were no evidences for any systemic infection. Also, family history of rheumatic or autoimmune disease was negative. Swelling and tenderness of the left wrist were noticed during the physical examination. Besides, movements of the wrist were painful and the range of motion was restricted. Patient reported that he had been given symptomatic treatment with non-steroidal anti-inflammatory drugs and oral antibiotics earlier.

Laboratory investigations were within normal limits. Erythrocyte sedimentation rate (ESR) was 16mm in 1 hour, white blood cell count (WBC) was 5,700/mm³ and C-reactive protein (CRP) was 0.3 mg/dL. Also, other serological tests for rheumatic diseases, hepatitis B and C, HIV were negative.



Figure 1: Pre-Operative Photograph.



Figure 2: Antero-posterior and lateral radiograph of the wrist.

Furthermore, no signs of respiratory or systemic diseases were detected during the physical examination. A plain radiograph of the chest showed no features of current or past tubercular infection. 'X-Ray Wrist' showed peri-articular osteoporosis (Figure 2).

The patient was operated under regional anesthesia. A vertical incision of 4 centimeters over the most prominent part of the swelling was given between the extensor digitorum tendons. Intra-operatively, the origin of the swelling was found to be attached to the tendon overlying capitates bone. Initial diagnosis was ganglion cyst-like soft tissue mass. Debridement and curettage were performed and samples for histopathologic and microbiological investigations were taken (Figure 3 & 4). Final diagnosis was made with histopathological examination which showed epithelioid granulomatous reaction



Figure 3: Intra-Operative Photograph

and central caseous necrosis (Figure 5). Multidrug antituberculous chemotherapy with rifampicin 10 mg/kg/day, isoniazid 5 mg/kg/day, pyrazinamide 25 mg/kg/day, streptomycin 15 mg/kg/day and ethambutol 15 mg/kg/day was also initiated.

DISCUSSION:

Even in areas with high prevalence of tuberculosis, involvement of the musculoskeletal system is a rare entity.^[4] The involvement of hand and wrist is seen in 10% of patients with musculoskeletal disease.^[5] Features of bony tuberculosis on radiological examination like sclerosis and osteolytic lesions are non specific and can be seen in other conditions such as inflammatory arthritis, pyogenic osteomyelitis and malignancies.^[6] Bone cysts, periosteal reaction, soft tissue swellings and narrowing of joint space are other radiological features.^[6-8]

Evaluating the extent of the lesion and establishment of a differential diagnosis can be done by the non-specific CT and MRI scans. The gold standard for the diagnosis of osseous tuberculosis is the culture of *Mycobacterium tuberculosis* from bone



Figure 5: Photograph of Excised mass.

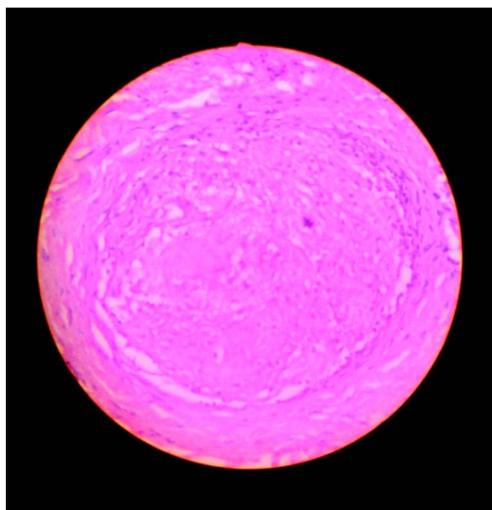


Figure 6: Histopathological microphotograph showing the granulomas with central necrosis and Langhans type giant cell.

tissue. Confirmation of diagnosis of tuberculosis is by recognition of *Mycobacterium tuberculosis* or histopathological study.^[9-11] The treatment of tuberculosis of hand and wrist is generally non operative. Surgery is indicated generally for biopsy, debridement, fusion of disorganized joint or carpal tunnel decompression.^[12] Early diagnosis is difficult due to slow progression of the disease and results in poor functional outcome in spite of regular ATT.^[13] Early diagnosis assists to commence conservative treatment thereby avoiding debulking surgery.^[14]

Musculoskeletal tuberculosis may not co-

exist with active pulmonary tuberculosis.^[12] Activation of a distant focus can also occur by trauma or intra-articular steroids locally or due to Diabetes mellitus or any other systemic disease.^[7] In early stages of the disease, clinical findings and radiological features may simulate arthritis. Open biopsy and tissue culture help to arrive at a definitive diagnosis.^[8] Disease control and improvement in function by surgical procedures in addition to anti-tuberculosis medications be necessary.

CONCLUSION:

Tuberculosis may rarely present as persistent swelling of the musculoskeletal system and the diagnosis can be easily missed because of the non-specific clinical signs resulting in progression of disease and more advanced disability. While dealing with long standing inflammatory swellings not responding to conservative measures, musculoskeletal tuberculosis should always be suspected as absence of systemic symptoms and a normal chest radiograph does not exclude the possibility of bone tuberculosis. As the results are better during early stages of the disease, tissue should always be sent for culture or histo-pathological examination. Early and prompt diagnosis with adequate medical treatment and surgical assistance is the key to management of musculoskeletal tuberculosis.

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