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Case Report

Extensors tenosynovitis of wrist with rupture of extensor digitorum: rare presentation of tuberculosis

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ABSTRACT

Majority of the non-pulmonary TB are seen in musculo skeletal system. It's a chronic and progressive disease that mostly affects weight bearing joints. Upper extremity presentations are not common. Tendon sheaths constitute an uncommon target of extra articular tuberculosis. Tubercular tenosynovitis is now rare, which can delay diagnosis of this disease. Authors report a case of Tuberculosis Tenosynovitis affecting dorsum of hand with pathological rupture of extensor digitorum. A 60 year old male patient present with a progressive swelling over the dorsum of right wrist of 4 month duration. Later he was taken for open excision biopsy. Melon-seed bodies were found inside the exensor tendon sheath with complete rupture of extensor tendon. Case was managed by extensor sheath were excised and removed in total thorough irrigation of the wound was done, retinaculum is repaired, extensor tendons repaired. Histopathology confirmed Tuberculosis. Although the tendon sheath constitutes an uncommon target of extra articular TB, it is one of the leading causes of chronic tendon sheath infection. Hence should be considered in the differential diagnosis of hand masses.

Keywords: Extensor tenosynovitis, Tuberculosis, Hand

INTRODUCTION

Majority of the non-pulmonary TB are seen in musculo skeletal system. It's a chronic and progressive disease that mostly affects weight bearing joints. Upper extremity presentations are not common. Tendon sheaths constitute an uncommon target of extra articular tuberculosis. Tubercular tenosynovitis is now rare, which can delay diagnosis of this disease. Although the tendon sheath constitutes an uncommon target of extra articular TB, it is one of the leading causes of chronic tendon sheath infection[1] in developing countries. Due to delay in diagnosis there are many complications occurring in TB Tenosynovitis. Here we are reporting a case of TB Tenosynovitis affecting dorsum of hand with pathological rupture of extensor digitorum tendon.

Extra pulmonary tuberculosis involvement of musculo skeletal system is only 10% of TB cases[2]. Isolated TB polymyositis and bursitis and tenosynovitis are rare, constituting about 1% of skeletal TB. It commonly affects the tendon sheaths of wrist and hand but rare case of Tubercular tenosynovitis of extensor tendon of foot also reported. Melon seed bodies are one of the typical feature seen in tuburcular tenosynovitis. In hand, it is usually present as a compound palmer ganglion (radio ulnar bursa) and tenosynovitis of the flexor tendon sheaths. Few cases of tubercular tenosynovitis affecting the extensor tendons also reported.

CASE REPORT

A 60 year old male patient present with a progressive swelling over the dorsum of right wrist of 4 month duration. Initially there was only a single swelling and 1 month after he noted another swelling just proximal to that. Initially he had mild dull aching type of pain. 3 months after the appearance of the swelling he had difficulty in extending the right middle and ring finger.

He doesn't have any history of constitutional symptoms like loss of weight, loss of appetite, evening rise of temperature, etc. There was no past history of pulmonary tuberculosis. There was no similar illness in the family.

On examination, there are two swellings measuring 3x2.5 cm and 2.5x2 cm which was non-tender and there was no local rise in temperature and it's a boggy swelling with well-defined margins and slipping edges and it was fluctuant with transverse mobility and it is non-pulsatile and non-trans-illuminant.

There was a slight restriction in dorsi flexion of wrist and active extension of ring and middle finger at MCP and IP joint was not possible indicating clinical signs of extensor digitorum of middle and ring finger rupture. There was no clinical evidence of chest or other joint involvement.

On investigation Mantoux test was positive (15 mm). His ESR was only 10 mm/hour and sputum AFB was negative, all other investigations was normal. Chest X-ray was normal, X-ray of wrist also was normal. Ultrasound showed two swellings measuring 3 x 3 cm and 2.5 x 3 cm over the dorsum of wrist arising from extensor tendons suggestive of tenosynovitis.

An open excision biopsy was done under interscalene block shows that the two swelling were communicating under the extensor retinaculum. Numerous melon-seed (rice-seed) bodies were found inside his extensor tendon sheath with complete rupture of extensor tendon.

Melon-seed bodies along with the sheath were excised and removed in total thorough irrigation of the wound was done, retinaculum is repaired, extensor tendons repaired, wound is closed over a drain. Patient's wrist was kept in below elbow slab with wrist and fingers in extension. Drain removed after 48 hours, suture removal done on 10th day.

Histopathology shows synovial tissue and fibrocollagenous tissue with multiple epitheloid aggregates, Langhans giant cells and foci of necrosis. Patient was given ATT under category 1 dots and the slab was kept till 4th post-op week.

Patient was followed up for 2 years without any recurrence. His postoperative hand functions were excellent and full range.

Figure 1: Pre-operative photo.

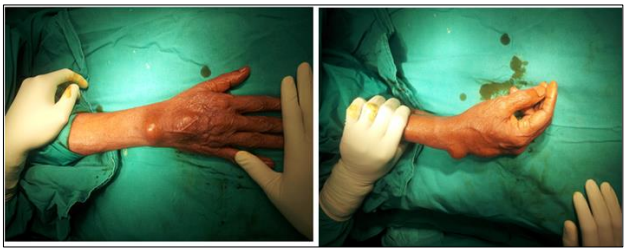

Figure 2: Pre-operative photo showing two swellings.

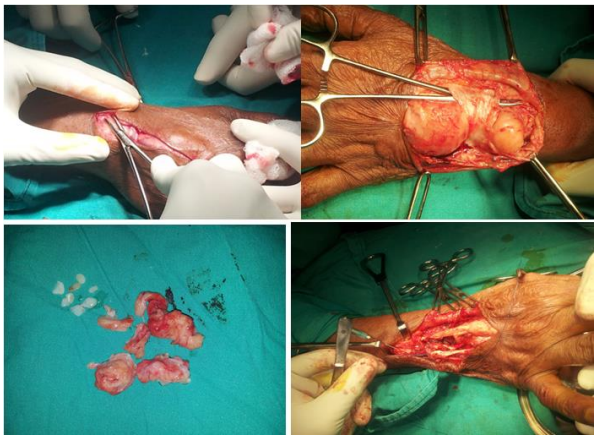

Figure 3: Intra operative photo showing melon seed bodies.

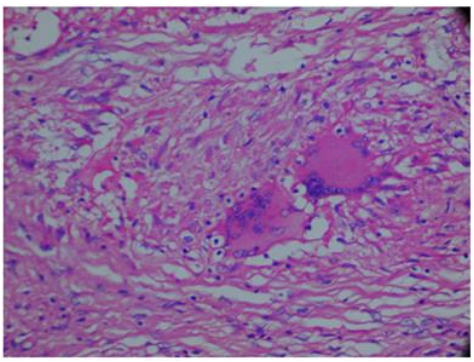

Figure 4: Histopathological picture showing Langhans gaint cells.

Figure 5: Post-operative photo at follow up.

DISCUSSION

Primary tuberculous tenosynovitis is a rare condition. Tuberculous tenosynovitis selectively targets the wrist and volar aspect of the hand, where it accounts for 5% of case of osteoarticular TB.[3] Involvement of the foot and ankle is much less commonly reported. In the wrist and hand, the flexor tendon sheath and radioulnar bursae (the compoundpalmar ganglion) are the most common sites of tenosynovitis. However, the digital flexor sheaths and the dorsal wrist compartment are affected less often.[4-7] Multifocal tenosynovitis has been reported recently.[7] The mechanism may be direct inoculation from adjacent bone or joint infection or seeding from a tuberculous lesion in the pleuropulmonary or genitourinary system.

The precipitating factors include trauma, overuse of the joint, old age, low socioeconomic status, malnutrition, alcoholism, immunosuppression and steroid injections. The right hand and wrist are the most common sites of involvement of tuberculous tenosynovitis and men are more affected than women. Patients usually present with an insidious, slowgrowing, sausage-like mass along the inflamed tendon with no or little pain. Patients may present with discharging sinus and carpal tunnel syndrome.[5,8] Tendon rupture is a rare presentation, but it may occur when treatment is delayed.[5,9] The onset of disease is gradual with slow progression leading to well-advanced disease before presentation, as in our patient. Mason, quoting from Kanavel's files, reports that, out of 21 available records of tuberculous tenosynovitis in the hand, rupture or impending rupture of the tendon was noted in 10 instances.[10] There are three histological forms of tuberculous tenosynovitis as a result of the long duration of the disease, the resistance of the individual, and the varying virulence of the microorganism. In the earliest stage, the tendon is replaced by vascular granulation tissue. Later on, the sheath is obliterated by fibrous tissue. Fluid is confined within the sheath and rice bodies may appear due to caseation. In the end, the tendon may consist of only a few strands of tissue and may rupture spontaneously. If healing by fibrous tissue formation fails to curtail the pathologic process, extensive caseation and granulation occur. This may lead to sinus formation and superimposed secondary infection.[5,9-11] Although granulomas (Caseating and non-caseating) occur in most cases "Rice bodies" or "Melon seeds" represent fibrinousmasses (Tubercles) which are present in 50% of TB cases.[11,12]

Laboratory findings are generally negative, except for the erythrocyte sedimentation rate, which is usually increased.[4] MRI may show thickening of the synovial membrane with increased vascularization, fluid within the tendon sheath, reactive inflammation around the tendon, or swelling of the tendon. In contrast to acute suppurative tenosynovitis, where synovial sheath fluid is the predominant feature, relatively little synovial sheath fluid is characteristic of tuberculous pathology.[3,12] The main problem remains the difficulty in diagnosing the disease because of non-specific clinical signs that point to a number of other possibilities. Differential diagnoses of tuberculous tenosynovitis include other mycobacterial infections, pyogenic infection, brucellosis, foreign body tenosynovitis, sarcoidosis, rheumatoid arthritis, gouty arthritis, pigmented villonodular synovitis of the tendon sheath, and fungus infection.[5,11-13] The most effective treatment involves a combination of medical and surgical therapies.[5,6,10,11] Rifampicin, isoniazid, pyrazinamide, and ethambutol are prescribed.

The currently recommended 6-month course is often inadequate and is commonly extended to 9 or 12 months. Extensive curettage, lavage and synovectomy should be performed. Surgery is essential, but the extent of surgical debridement is still debatable. Some authors advocate surgical debridement with complete excision of the tendon sheath while others advocate decompression of the tendon sheath without excision and debridement of the surrounding tissue.[4,6,10,11,14,15] Our patient was treated with complete debridement of involved soft tissue with repair of extensor tendon. With appropriate treatment, recovery is usually satisfactory. TB tenosynovitis has a tendency for local recurrence, with more than 50% of cases recurring within a year of treatment,[16] so close follow-up should be carried out in every case.

CONCLUSION

Tuberculosis of the tendon sheaths of the wrist is rare. Delayed diagnosis is common due to slow progression and numerous differential diagnoses, which often leads to complications. Early radical excision of the infected tissues combined with antituberculous multidrug therapy gives good functional results and prevents recurrence.

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