Case Report

A Case Report On Tuberculous Tenosynovitis

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Abstract

Tuberculosis (TB) can affect any organs/systems of the human body and have variable presentation in each system. Worldwide, the incidence of extra-pulmonary involvement of tuberculosis occurs in approximately 17–52% of all cases reported. Bone and Joint tuberculosis results from haematogenous spread from a pulmonary or other visceral or lymph node focus TB tenosynovitis of the wrist and hand is an unusual condition.

Tuberculous tenosynovitis represents only 5% of bone and joint TB and usually involves the wrist. The major dilemma in diagnosing these uncommon presentations is the presence of the non-specific clinical signs which can be misleading as they mimic a number of other clinical conditions such as ganglion, De Quervain's disease, carpal tunnel syndrome, and granulomatous gout. Its chronic and insidious evolution, long supported by patients, is one explanation for delays in consultation. The treatment is medicosurgical including antituberculous, chemotherapy, and debridement. Debridement also helps in diagnosis and therapy.

Keywords: Tuberculous Tenosynovitis Haematogenous Spread**.**

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Introduction

Here we report a case of 43 old male who presented with the complaint of ulcerated area over the distal part of the flexor aspect of the right forearm that had evolved over the period of 6 months..It started with a swelling which gradually progressed in size with tingling sensation over the lateral fingers of the right hand. Misdiagnosed as a case of ganglion and underwent an operative procedure following which the swelling evolved into an ulcer with discharge of foul smelling pus. The pain, a mild, dull aching, had started insidiously, and gradually worsened with time. History of fever for 4-5 days which was low grade and also history of anorexia. No associated history of night sweats, malaise or fatigue. There was no history of trauma, pulmonary TB, as well as no known or traceable history of TB contact, no history of pain in other joints of the body, morning stiffness of the back or hand joints, or continuous use of vibratory tools. The patient had no history of previous illness suggestive of diabetes mellitus, injuries or surgery.

Physical examination reveals an ill looking anorexic man, below average body built with an ulcer over the distal part of the flexor aspect of the right forearm, approx. 7cmx4cm in size with irregular shape, undermined edge. Floor filled with slough and discharge of pus present.

Movements of the wrist were only limited and slightly painful at the extremes. Local temperature raised and tenderness present, base slightly hard with no palpable regional lymph nodes. Rest of the clinical study was unremarkable. Chemical results showed decreased Hb% (10.5gm/dl), elevated white blood cell count(19,100/cumm), elevated erythrocyte sedimentation rate (59mm in 1st hour), elevated neutrophil count (84%). Pus culture revealed pseudomonas species. Mycobacterium tuberculosis detected in gene expert Radiography findings of the right forearm revealed - Soft tissue swelling seen on the lower part of right arm, no bony lesion seen on bones around Right forearm, Suggestive of Abscess / Cellulitis. Findings on the x-ray chest were normal.

- Gross examination of the histopathology specimen revealed 0.7cmx0.3cm dark piece of tissue covered with skin. On microscopy, section shows many well-formed granuloma along with few langhan's giant cells with a background of many acute and chronic inflammatory cells and necrotic debris but no malignancy. Hence the biopsy diagnosis revealed granulomatous inflammation histologically.

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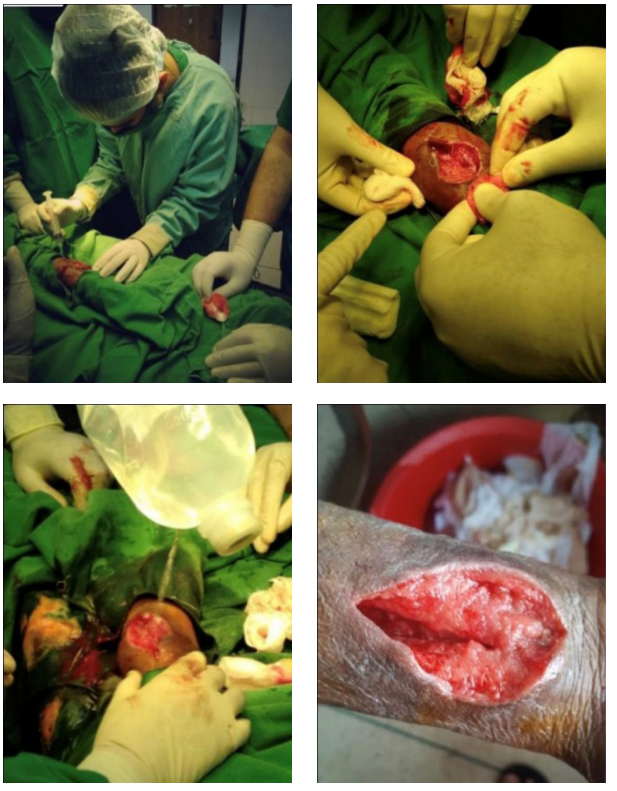
- Tuberculosis: Exploration and debridement was doneand Antituberculous treatment was started immediately for 8-month period (associating isoniazid, rifampicin, pyrazinamide, and ethambutol for 2 months, followed by isoniazid and rifampicin for the next 6 months). On discharge, patient was adviced physiotherapy for fingers and wrist to improve functional results, to maintain good personal hygiene and follow up after 2 months.



Discussion

Primary tuberculous tenosynovitis is a rare condition. Tuberculous tenosynovitis was first described by Acrel in 1777.[10] Involvement of the flexor is much more common than that observed with the extensors. The two theories regarding the pathogenesis of TB tenosynovitis are direct inoculation and hematogenous dissemination from a primary focus. Infection appears to start in the synovium and then gradually spread to the tendons and even the bones. The inoculation may be direct or hematogenous from an active or sleeping pulmonary or gastrointestinal source. In our patient, tenosynovitis was primitive, given that no other TB localization was identified. A recent study highlights possible *M. tuberculosis* transmission from environment to humans, comparing *M. tuberculosis*superfamilies isolated from soil and water to clinical isolates.[11] The right hand and wrist are the most common sites of involvement of tuberculous tenosynovitis and men are more affected than women tuberculous tenosynovitis of the wrist. Some factors may play a role in tuberculous reactivation, including trauma in 30% of cases,[12] forced labor, corticosteroid infiltration, low socioeconomic status, malnutrition, immune depression (HIV infection and long-term corticosteroid treatment), alcoholism, or age (>60 years)[13,14] Patients usually present with an insidious, slow-growing, sausage-like mass along the inflamed tendon with no or little pain. Patients may present with discharging sinus and carpal tunnel syndrome.[15,16] Tendon rupture is a rare presentation, but it may occur when treatment is delayed.[17]

Our patients consulted late, at 6 months or even more after the onset of the disease. Tuberculous tenosynovitis is marked by an insidious and progressive onset and the swelling becomes evident after several months. This makes a high tolerance of the disease. Biological studies often reveal an inflammatory syndrome with elevated ESRs, which is a nonspecific indicator. Bacteriology is positive during direct examination in 20% of the cases and culture is negative in 35–45%. Gene-amplification methods using synovial fluid are more sensitive and allow rapid and specific detection of *M. tuberculosis.*[18] Ultrasound is a useful tool for confirming diagnosis of tenosynovitis and discovery of its extension. It allows detection of increases in synovial-sheath volume as it forms a sleeve around the tendon, as well as tendon thickening or fluid collection.[19] Magnetic resonance imaging (MRI) is more powerful and sensitive than ultrasound, allowing visualization of typical granulomatous synovial-tendon sheaths in the intermediate T1 signal with enhancement by gadolinium and an hyperintense T2 signal. MRI is capable of detecting synovial proliferation, abscess formation, and destruction of adjacent bone, however, it is not easily accessible in some countries for socio-economic reasons.[20,21] The differential diagnosis of tuberculous tenosynovitis could result from an infection with other mycobacteria responsible for granulomatous tenosynovitis, such as a fungal infection, brucellosis, tenosynovitis of foreign bodies, or sarcoidosis.[3,4] Once diagnosed, treatment is very simple and the patient usually heals with little or no sequelae. The most effective treatment involves a combination of medical and surgical therapies.[6,9,10,19] Antitubercular treatment is based on an initial quadruple therapy (associating isoniazid, rifampicin, pyrazinamide, and ethambutol) for 2 months. After 2 months and in the absence of resistance, the treatment is continued using a combination of isoniazid and rifampicin. The minimum duration of TB treatment in the bone and joint remains poorly defined. 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, so close follow-up should be carried out in every case.[22]

Conclusion

Tuberculous tenosynovitis, although rare, is still occasionally encountered, especially in TB endemic areas. The first challenge is difficulty in diagnosing this condition, due to clinically insidious onset and non-obvious presentations. Biochemical analysis, ultrasound, and MRI are useful methods to guide the diagnosis, but the final decision is usually made based on histological investigation. Treatment is based on antitubercular chemotherapy and may require surgery in some cases for debridement.

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