SYNOVIAL TUBERCULOSIS — TWO UNUSUAL CASES (A Case Report)

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Introduction

The extra-pulmonary localisation of tuberculosis as secondary foci is well known. Tuberculous tenosynovitis, especially of the tendons of the hand, although rare are known [1,2]. The disease usually involves the flexor tendons primarily and may later involve the extensor tendons. The primary involvement of extensor tendons and that too bilaterally is very rare. Involvement of bursae occurs in a small number of cases of skeletal tuberculosis, most notably of greater trochanteric, olecranon and prepatellar bursae [3]. The authors report two cases of unusual localisation of synovial tuberculosis without any other known focus of disease.

CASE REPORT NO 1

Tuberculous Extensor Tenosynovitis both Hands

A 60-year-old man reported with swelling over the back of both hands of two years duration. The onset was insidious and progress gradual. He complained of pain on finger movements. There was no history of fever, cough or weight loss. He did not give any history suggestive of tuberculosis in the past.

General and systemic examinations were within normal limits. Examination of the hand revealed soft, spongy, mildly tender swellings measuring 4 x 3 cm over the dorsum of both hands. There was no regional lymphadenopathy.

Investigations revealed ESR 14 mm fall/first hr, haemoglobin 12 gm/dL. Radiological examination of hands and chest were normal. Mantoux test showed 6 mm induration after 72 hours.

The lesion on the left hand was aspirated and pale, thin, straw coloured fluid was removed. The fluid did not clot. Microscopic examination revealed lymphocytes. Ziehl-Neelsen staining of the deposit did not reveal acid-fast bacilli. Surgical biopsy of the lesion was done. The synovium was thickened, dull red, spongy and vil-

lous. 'Melon seed' or 'rice' bodies were recovered (Fig 1). Histopathological examination of tendon sheath showed synovium containing areas of granulations. There were several well-formed epithelioid cell granulomas containing Langhan's type giant cells (Fig 2). There were areas of caseation necrosis. Ziehl-Neelsen staining of section did not reveal acid-fast bacilli. The histological diagnosis was granulomatous tenosynovitis consistent with tuberculosis.

Fig. 1 : 'Melon seed' bodies

Fig. 2 : Epithelioid cell granuloma with Langhan's giant cell (H & E) x 100.

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Under cover of antituberculous chemotherapy the lesions were excised in toto. The wounds healed well. Full course of antituberculous chemotherapy was given for six months. The patient remained asymptomatic till last follow-up.

CASE REPORT NO 2

Tuberculous Bicipital Bursitis Left Knee

A 25-year-old officer fell down and sustained direct injury to the lateral aspect of left knee. He developed painful swelling over the lateral aspect of left knee around the head of fibula. He was initially treated as contusion left knee with rest and analgesics. He continued to have pain and swelling and also developed malaise and fever. He was treated with broad spectrum antibiotics but did not improve. Examination of the knee revealed a warm tender swelling around the head of the fibula. There was no evidence of joint involvement. Investigations revealed haemoglobin 10.5 gm/dL, TLC 8,900/cumm, ESR 140 mm fall/first hour. Radiography of the chest showed no abnormality. Radiogram of the left knee showed soft tissue swelling around the head of fibula with early periosteal reaction suggestive of chronic inflammation. Mantoux test showed 14 mm induration at the end of 72 hours.

The lesion was explored under general anaesthesia. There was a circumscribed swelling in relation to insertion of biceps femoris tendon and knee joint. It was cystic and contained serosanguinous fluid and cheesy material. The wall of the lesion was excised piecemeal, wound curetted and left open to heal by secondary intention.

The histopathological examination of the wall showed classical epithelioid cell granulomas with Langhan's type giant cells and caseation (Fig 3). Ziehl-Neelsen

staining of section did not reveal acid-fast bacilli. The histological diagnosis was granulomatous inflammation consistent with tuberculosis. Patient was put on antituberculous chemotherapy. The wound healed rapidly and patient remains asymptomatic.

Discussion

About 1% of patient with tuberculosis have osteoarticular involvement [4]. Localised involvement of tendon sheaths is rare. The wrist and hands are involved in 0.7% to 5% of all cases of osteoarticular tuberculosis [1]. The disease may involve the tendon sheaths, joints or metacarpal bones. The flexor tendon sheaths are most commonly affected by tuberculosis in the hand.

Tuberculous tenosynovitis results in insidiously developing progressive swelling and inflammation of tendon sheath. It is rarely associated with active pulmonary tuberculosis. The tuberculous tenosynovitis may be due to direct inoculation of the bacilli as used to occur in the past in cow handlers with the organism involved being mostly *Mycobacterium bovis* [5]. Now most cases of tenosynovitis are believed to be due to haematogenous dissemination from a primary focus, usually the lungs. The primary focus generally heals without clinical evidence of disease, but the secondary focus may become active years late [1].

The evolution of the disease is very slow. Early symptoms are so mild that it may be several years before the patient seeks treatment. The disease starts as a simple inflammation of tendon sheaths with serous exudate and fibrinous deposits. The sheath thickens and becomes granular and later exudate turns seropurulent. The synovial membrane becomes dull, red, villous and covered with fibrinous exudate which floats and accumulates into 'melon seed' or 'rice' bodies. They are composed of laminated fibrin. Occasionally acid-fast bacilli may be demonstrated in the centre of these bodies. At a later stage the disease spreads to involve the tendons proper and the surrounding tissue leading to tendon rupture, sinus formation and seropurulent discharge. Fever and general symptoms are usually absent [6].

Fig. 3 : Tubercular granulations, caseation necrosis (black arrow with Langhan's giant cells (H & E) x 100.

Tuberculous infection of a bursa without involvement of adjacent joint is a rare occurrence [3]. Stewart [7] in 1933 and Kelly et al [8] in 1963 reported cases of tuberculous prepatellar bursitis without involvement of knee joint following injury. Direct inoculation of infection into infected bursae has been postulated in these cases [3] though haematogenous dissemination from a small undetected primary focus cannot be ruled out. Infections of bursae are more usually caused by a number of organisms including *Staphylococcus aureus*, streptococci and various fungi. Rarely *Mycobacterium tuberculosis* and other atypical mycobacteria are the offending organisms. Thus the treating clinician should consider the possibility of mycobacterial infection in the work-up of bursitis [3].

The diagnosis of tuberculosis can be based on any of the following criteria : 1. *Mycobacterium tuberculosis* grown on culture 2. Biopsy material showing caseating granuloma typical of tuberculosis, sometimes accompanied by demonstration of acid fast bacilli [1]. Lesions in both patients in this report showed classical macroscopic features. Histopathologically both the lesions showed classical epithelioid cell granulomas with

Langhan's type giant cells and areas of caseation consistent with tuberculosis. In both the patients the lesions were excised and full course of antituberculous chemotherapy was given. Surgical procedures combined with full doses of antituberculous chemotherapy offer the best results in cases of synovial tuberculosis involving tendon sheaths and bursae.

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