

Title:

A rare case of primary tuberculous tenosynovitis in a young patient with an acute history

Abstract

We present a rare case of primary tuberculous tenosynovitis in a young patient with an acute history of non-penetrating traumatic injury. The patient had recently visited Pakistan and presented with sudden onset pain at the base of their right fifth digit after trying to catch a cricket ball. A provisional diagnosis of haematoma was made; however, ultrasonography revealed a mass attached to the A2 pulley. Surgical excision followed by histological examination and culture identified *Mycobacterium Tuberculosis* infection. This case serves to raise clinical awareness of this rare condition and highlight the importance of obtaining a travel history.

Key Words

Tenosynovitis, Tuberculosis, Finger, Infection

Text

Introduction:

Tuberculous tenosynovitis is a rare manifestation of musculoskeletal tuberculosis, thought to occur in just 1% of cases.¹ Despite its rarity, this infection is an important cause of chronic tenosynovitis which can be easily overlooked when formulating a differential diagnosis. The resultant delay in diagnosis, and therefore treatment, can lead to significant long term disability. In order to raise clinical awareness of this infection, and to highlight the importance of taking a travel history, we present an unusual case of primary tuberculous tenosynovitis in a young patient with an acute history.

Case Report:

A 19 year old man presented with sudden onset pain and swelling at the base of the right fifth digit after trying to catch a cricket ball. He was otherwise healthy and had visited Pakistan four months previously, for a period of three months. On examination there was a soft swelling at the base of the proximal phalanx of 2cm diameter. His blood results were normal including white blood cell count and C-reactive protein. No fractures were visible on plain radiography and ultrasonography was performed to rule out tendon injury and investigate a provisional diagnosis of traumatic haematoma. However, this demonstrated a mass attached to the A2 pulley, with no tendon involvement. Surgical exploration and histological examination using auramine phenol and Ziehl-Neelsen staining revealed a caseous lesion (Figure 1) containing acid-fast bacilli, and subsequent culture of the lesion identified *Mycobacterium Tuberculosis*. Screening for HIV infection was negative and the patient was otherwise asymptomatic. Chest radiography was normal, and pulmonary tuberculosis was ruled out after review by a respiratory physician, leading to a diagnosis of primary tuberculous tenosynovitis. The patient subsequently developed two more nodules at the base of the proximal phalanx of the right thumb, identified clinically within ten days of the operation. He was treated with a twelve-month course of anti-tubercular medication consisting of rifampicin, isoniazid, pyrazinamide and ethambutol for two months and rifampicin and isoniazid for ten months. All three lesions had completely resolved after nine months and he was discharged from hand clinic after completion of the twelve month course of medication (Figure 2).

Discussion:

Although tuberculous tenosynovitis is considered rare, an increase in incidence may be anticipated in line with the global re-emergence of tuberculosis.² Commonly cited risk factors

include a history of tuberculosis or exposure to tuberculosis, age >60 years, immunoincompetence of any cause, malnutrition and alcohol abuse.^{3, 4} Lesions most commonly involve the flexor tendons of the dominant hand and typically present insidiously with gradually progressive tenderness and swelling over the involved part.³ Pain varies in intensity but is rarely severe and there may be functional limitation of the digits.^{2, 4} As a consequence of these generally mild symptoms, patients often present late, with advanced disease.

The differential diagnosis includes infected ganglion, tumours of the synovium such as synovial chondromatosis, giant-cell tumours of the tendon sheath, rheumatoid arthritis, gouty arthritis, amyloidosis, sarcoidosis, de Quervain's disease and other non-specific tenosynovitis.^{1, 4} Laboratory investigations are of limited value; however, radiographic studies, and in particular MRI, are useful in assessing the extent of disease.^{2, 3} To obtain a definitive diagnosis, and identify antibiotic resistance, requires open biopsy combined with histopathological examination and bacterial culture or *Mycobacterium Tuberculosis* polymerase chain reaction.² Long term complications include reduced mobility of the affected digit, nerve compression, tendon rupture and further dissemination³. Effective treatment should include extensive surgical debridement and a full course of anti-tubercular chemotherapy.⁵

Several features of this case were atypical. Firstly, the patient had no history of trauma (prior to the incident that led to presentation) and there was no evidence of pulmonary involvement, suggesting this was a rare case of primary tuberculous tenosynovitis. Secondly, the acute history with which the patient presented, associated with a minor traumatic injury and normal blood results, was also highly atypical and led to an initial misdiagnosis of haematoma. It is assumed that this represented an insidiously developing infection brought to attention by an incidental injury. Finally, the patient was young, healthy and lacked many of the commonly

cited risk factors for tuberculous tenosynovitis outlined above. However, crucially, the patient had recently travelled overseas to Pakistan, an area where tuberculosis is endemic, and it is highly likely that this was the source of infection.

Primary tuberculous tenosynovitis is rare but should be considered in all patients with a history of tuberculous contact.² The low incidence of this condition and typically insidious onset of symptoms, coupled with a wide differential diagnosis, can lead to a significant delay in diagnosis and treatment. This case serves to emphasise the importance of maintaining a high degree of clinical suspicion and of obtaining a complete history including travel to regions endemic with tuberculosis.

Conflict of interests

None.

References

1. Probst FA, Koch M, Lohmeyer J, Machens HG, Schantz JT. Tuberculous extensor tenosynovitis of the hand. Arch Orthop Trauma Surg. 2012;132(8):1141-5.
2. Higuchi S, Ishihara S, Kobayashi H, Arai T. A mass lesion of the wrist: a rare manifestation of tuberculosis. Intern Med. 2008;47(4):313-6.
3. Jaovisidha S, Chen C, Ryu KN, et al. Tuberculous tenosynovitis and bursitis: imaging findings in 21 cases. Radiology. 1996;201(2):507-13.
4. Jackson RH, King JW. Tenosynovitis of the hand: a forgotten manifestation of tuberculosis. Rev Infect Dis. 1989;11(4):616-8.
5. Diwanji SR, Shah ND. Tuberculous tenosynovitis of flexor digitorum longus tendon. Orthopedics. 2008;31(5):499.

95 **Figure Legends**

96 **Figure 1:** Intraoperative photograph showing a caseous mass on the A2 pulley.

97 **Figure 2:** Appearance after treatment with twelve months anti-tubercular chemotherapy.