A rare presentation of tuberculosis

U. M. J. E Samaranayake[1], Y. N Rajapakse[1], Y Mathangasinghe[1], E.A.C Fernando[2,3], G.K Rajapakse[4]
[1]Department of Anatomy, Faculty of Medicine, University of Colombo, Sri Lanka
[2]Central Chest Clinic, Colombo, Sri Lanka
[3]National Hospital of Sri Lanka
[4]Department of Plastic and Reconstructive Surgery, Army Hospital, Narahenpita, Sri Lanka

Keywords: Tuberculous synovitis; arthritis, extrapulmonary;

Introduction

Tuberculosis is characterized by chronic granulomatous inflammation, caseous necrosis and Langhans type giant cells. The disease burden of tuberculosis in developing countries is catastrophic. Among patients with tuberculosis, less than 1% was reported to have lesions on hand [1].

Case presentation

A 54-year-old female, a diagnosed patient with autoimmune haemolytic anaemia on immunosuppressive medications, presented with a swelling in the dorsal surface of the left wrist for six months. The swelling was painful and gradually enlarging. She denied fever. On examination, there was generalized swelling of the hand, redness, warmth with pitting oedema. Hand functions were markedly restricted with a reduced range of movements at the metacarpophalangeal, interphalangeal and wrist joints. Her Erythrocyte Sedimentation Rate (ESR) 64 mm at 1 hour, C-Reactive Protein 7 mg/dl, White Blood Count $7.21x10^{9}$ L-1 with 86% neutrophils, 0.4% lymphocytes and $580x10^{-9}$ L-1 platelets. She was initially suspected to have cellulitis. She did not respond to a ten-day course of intravenous Flucloxacillin.

She was then treated with a trial of Colchicine and Non-Steroidal Anti-Inflammatory Drugs suspecting gout. Her symptoms failed to improve with treatment. After five months, she developed a tender, laxly cystic lump in the dorsal aspect of the left wrist (Figure 1a). It cross fluctuated with a less prominent lump in the volar aspect of the wrist. Distal sensations were intact. X-ray of the wrist showed severe osteopenia and patchy intramedullary, endostial erosions with preservation of joint space. Magnetic Resonance Imaging (MRI) showed regional bone oedema, osteopenia and erosions, joint effusions with thickened synovium and multiple fluid pockets surrounding tendons suggestive of tuberculous arthritis (Figure 1b). MRI features

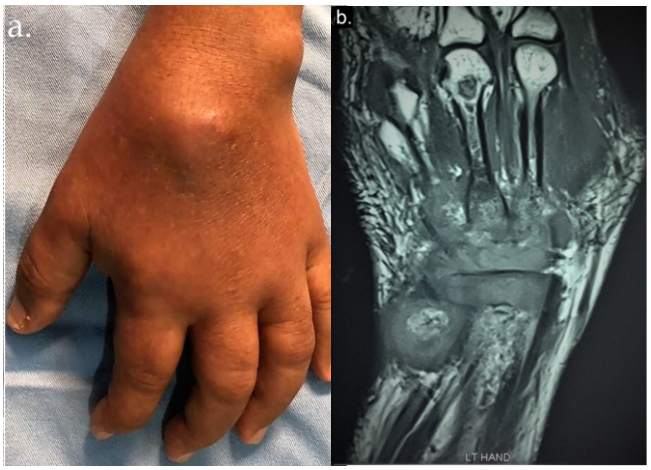

Figure 1a. Lump on the dorsal aspect of the wrist
Figure 1b. Magnetic Resonance Imaging of the wrist showing tuberculous arthritic changes

also suggested reflex sympathetic dystrophy. Upon further questioning, she denied a chronic cough, pyrexia, night sweats and weight loss. The patient did not have any past or contact history of tuberculosis. Chest X-ray had no evidence of tuberculosis. During excision biopsy of the lump, a volar wrist cold abscess was detected with diffuse synovial hypertrophy and caseous material. Histology showed multiple caseating granulomas within a heavily inflamed stroma with inflammatory cells surrounding sheets of histiocytes. Mycobacterium tuberculosis was isolated in tissue culture.

She was started on intensive antituberculosis treatment (Isoniazid, Rifampicin, Pyrazinamide, Ethambutol). Due to the liver function derangement, her drugs were withdrawn. Once liver functions were normalized, the desensitizing regime was commenced. Currently, she is on Ethambutol, Streptomycin and Levofloxacin which are well tolerated by the patient.

Discussion

Extrapulmonary tuberculosis manifestations occur as a result of the immune deficiency in individuals with existing medical conditions [2]. Due to the rare occurrence of hand infection in tuberculosis; the diagnosis is made rather later in the course of the disease [3]. Bayram, et al., reported a case of tuberculous synovitis presenting with non-specific symptoms such as

Correspondence: Yasith Mathangasinghe
E-mail: yasith@anat.cmb.ac.lk
Received: 19-09-2018 Accepted: 11-10-2018
http://orchid.org/0000-0003-4641-5642
DOI: http://doi.org/10.4038/sljs.v36i3.8531

swelling and pain at the wrist [4]. In most instances as observed in our case, the patients are treated for arthritic diseases or cellulitis at the initial encounter by the medical practitioners [4]. These patients may or may not have history and examination findings suggestive of tuberculosis. Clinicians should be aware of the unusual sites of tuberculous infections as it is a common disease in our country.

A similar picture of monoarthritis could occur due to chronic infectious tenosynovitis, tumours, and gout. Chronic regional pain syndrome (CRPS) such as reflex sympathetic dystrophy is a diagnosis of exclusion. Although the patient had pain and swelling suggestive of CRPS, she did not have abnormal sudomotor activity in the region of pain. The surgical and histopathological findings were also suggestive of a tuberculous disease. A high ESR value is seen in most cases of tuberculous synovitis [1,3]. However, the ESR level can be high in other causes of monoarthritis. X-ray findings of swelling in the soft tissues and sometimes periarticular osteoporosis were also seen in tuberculous joint involvement [1,4]. Synovitis due to tuberculosis is seen in Magnetic Resonance Imaging as thickening of the adjacent tendons, osteomyelitis, joint effusions erosions into bones and nerve entrapment [2]. Diagnosis confirmation involves histology and microbiology analysis [3].

There were studies comparing anti-tuberculin drugs versus surgery combined with anti-tuberculin medication; in which both methods were found to be equally effective [1]. In our case, we did a radical synovectomy followed by antituberculous medication. The patient is currently showing improvement with the treatment, nevertheless, she needs to be followed up. In cases, with tuberculous synovitis, the intensive treatment phase continues for two months followed by a continuation phase regimen for seven months [5].

All authors disclose no conflict of interest. The study was conducted in accordance with the ethical standards of the relevant institutional or national ethics committee and the Helsinki Declaration of 1975, as revised in 2000.

References

1. Wang T, Zhao G, Rui Y-J, Mi J-Y. Successfully treating hand primary tuberculous synovitis by synovectomy combined antituberculous therapy: A case report. Medicine. 2018;97(8). https://doi.org/10.1097/md.0000000000009938
2. Hsu C-Y, Lu H-C, Shih TT-F. Tuberculous infection of the wrist: MRI features. American Journal of Roentgenology. 2004;183(3):623-8. https://doi.org/10.2214/ajr.183.3.1830623
3. Güner MD, Bektaş U, Akmeşe R, Kamburoğlu HO, Armangil M, Ay Ş. Wrist tenosynovitis due to Mycobacterium bovis infection: case series and review of the literature. Plastic and Reconstructive Surgery Global Open. 2014;2(12). https://doi.org/10.1097/gox.0000000000000238
4. Bayram S, Erşen A, Altan M, Durmaz H. Tuberculosis tenosynovitis with multiple rice bodies of the flexor tendons in the wrist: A case report. International journal of surgery case reports. 2016;27:129-32. https://doi.org/10.1016/j.ijscr.2016.08.021
5. Organization WH, Initiative ST. Treatment of tuberculosis: guidelines: World Health Organization; 2010.

Learning Points:

- Hand tuberculosis infection is an uncommon presentation
- Diagnosis requires Magnetic Resonance Imaging (MRI) with confirmation by histopathology and cultures for tuberculosis
- Surgical treatment should be coupled with antituberculous treatment to avoid recurrence
- A high degree of suspicion is needed to diagnose extrapulmonary tuberculous manifestations