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Tuberculosis of small joint –a case report

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ABSTRACT

Small joint arthritis is an uncommon manifestation of tuberculosis. We report a case of tuberculosis presenting as arthritis of the wrist joint . This case illustrates the difficulties in diagnosing tuberculous arthritis as it has an insidious onset, paucity of constitutional symptoms, unremarkable early physical findings and frequent absence of associated pulmonary involvement. A high index of suspicion in high-risk individuals with chronic monoarthritis, is required to avoid delayed diagnosis.

KEYWORDS pain , tuberculosis , wrist

Introduction

Tuberculosis remains a major health issue worldwide, with a growing incidence in the india; However, musculoskeletal involvement is still infrequently reported in the medical literature, especially in the developed world. The lack of familiarity with tuberculosis in general, as well as specific signs and symptoms of extrapulmonary involvement may be contributory factors to a delay in diagnosis of atypical presentations. The case presented, of a 30-year-old female with 3 years history of worsening wrist pain and range of movement, illustrates the high level of clinical suspicion needed for the early diagnosis of tuberculosis involving the bones and joints.

Case report

- 30yr/F presented with pain , swelling & restriction of movement of Rt wrist joint since 3 yr.
- constitutional symptoms - Nil
- No trauma , other joints OK
- She had severe anemia with CCF 3 yr back , treated
- Hepatosplenomegaly and ovarian cyst , but liver function tests normal
- Prolong use of methylprednisolone, off & on other drugs
- Thin anemic patient; Poor socioeconomic status
- Soft tissue swelling over dorsum of wrist
- No fluctuation
- Tenderness over wrist (+)
- Movements flexion 35*
  extension 10*

  Circumduction painful

- Other joints WNL
- The synovial biopsy results confirmed eroded bone and caseating granulomata, consistent with tuberculous osteomyelitis extending into soft tissue, with polymerase chain reaction (PCR) testing showing evidence ofMycobacterium Tuberculosis. Although Ziehl-Neelson (ZN) stains on the samples were negative, the culture grew fully sensitive Mycobacterium Tuberculosis. On further questioning, the patient denied any respiratory symptoms. Examination of the chest revealed no abnormalities. A chest radiograph was also requested, which showed no evidence of pulmonary tuberculosis. Relevant serological and haematological tests confirmed that the patient was not immunocompromised.
- As a result of the culture and biopsy findings, the patient was commenced on anti-tuberculous therapy for six months with no complications. By the end of the treatment period, he regained full range of movement of his right elbow and was able to return to work and play squash regularly in his spare time with no complaints.

Discussion

- Tuberculosis is classified as either pulmonary or extrapulmonary, with bone and joint tuberculosis accounting for up to 35% of extrapulmonary tuberculosis.[2] The spine is involved in half of all musculoskeletal cases (Pott's disease).[3] In the remainder, osteoarticular tuberculosis usually affects weight-bearing joints, with 15% being polyarticular but non-weightbearing joints affected by tuberculosis, such as the elbow, are not frequently reported in the medical literature.[3]
- Clinically, the diagnosis of osteoarticular tuberculosis can be difficult. The most consistent symptoms include a gradual onset of joint pain associated with swelling and a decreased range of motion.[4] A recent case report has highlighted a progression to septic arthritis as a result of misdiagnosis.[5] Systemic symptoms are usually absent in extrapulmonary tuberculosis[4] and pulmonary disease is only seen on chest radiographs of 50% of patients presenting with musculoskeletal tuberculosis.[3]
- Changes in plain film radiography of the affected joint may include non-specific changes including joint effusion (as in this case), soft tissue swelling, joint space narrowing, subchondral erosions and osteopenia.[6]However, the changes may be absent and further imaging modalities will be required to aid diagnosis.[7]
- The role of MRI is well-documented to provide further aid to the diagnosis. Features include bone marrow changes indicating either osteomyelitis or bone marrow oedema, chondral and sub-chondral bone erosions, synovial thickening, joint effusions and loss of joint space.[8] T1- and T2-weighted MRI images demonstrate marrow changes as areas of low and high signal intensity, respectively, which are enhanced with administration of intravenous gadolinium contrast.[6] A recent study shows synovial thickening associated with osteoarticular tuberculosis is hypointense on T2-weighted MRI images, distinguishing this from other proliferating synovial arthropathies.[9] Computed tomography (CT) can be used to evaluate the degree of bone destruction, soft tissue extension and sequestrum formation.[10]
- However, radiological findings in osteoarticular tuberculosis are non-specific and require aspiration or synovial biopsy for definitive diagnosis. Microscopy and cultures of synovial

fluid yield positive results in up to 80% of patients with osteoarticular tuberculosis.[7] The remainder are diagnosed through synovial, or bone biopsies, with positive mycobacterial culture and caseating granulomata on histology.[7]

Summary

Diagnosing osteoarticular tuberculosis clinically can be difficult and the clinician should always have a high index of suspicion. Not considering tuberculosis as a possibility in the differential diagnosis can delay definitive treatment by up to 10 years (with the mean being 16–19 months) leading to an increase in complications and loss of joint function.[2] As this case illustrates, patients with extrapulmonary tuberculosis do not always have the classic systemic symptoms associated with pulmonary tuberculosis. In addition, radiographs of the joint may look essentially normal. However, it is important to realize that these 'normal' findings do not rule out disease. A history of exposure to, and risk factors for, tuberculosis especially in the presence of atypical osteoarticular disease should be considered always.

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