Case Report

Tuberculosis of the Scapula

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Abstract

Tuberculosis (TB) of the scapula is an extremely rare presentation of osteoarticular tuberculosis. In a tuberculosis endemic setting with a rising burden of acquired immunodeficiency syndrome, this rare presentation may become more frequent. The common presentation is with longstanding complaints of pain and swelling in the shoulder region, typically in young adults. Classic radiographic features include a well defined radiolucent lesion with minimal sequesteration. The erythrocyte sedimentation rate is usually elevated and initially these patients are frequently misdiagnosed and thus a high index of clinical suspicion is required. Medical therapy with anti-tuberculous drugs is the standard modality of treatment. This case serves to higlight the salient features of scapular TB.

Introduction

Tuberculosis (TB) infects one third of the world's population and kills about two million people annually.[1] Osteoarticular involvement occurs in upto to two percent of all TB patients.[2] Spinal involvement is the most common category in bone and joint tuberculosis. Less than one percent of all osteoarticular TB affects the shoulder, a fraction of it involving the scapular bone itself.[2,3] We report a case in which the patient was initially diagnosed to have a frozen shoulder. Due to the endemicity of TB and rising burden of Acquired Immunodeficiency Syndrome (AIDS) such a presentation might become more common.

Case History

An 18 year old male student presented with a three-month history of progressive, persistent, diffuse pain in the left shoulder region. Though unrestricted, shoulder movements were painful. There were no associated complaints of fever, cough, weight loss, fatigue or night-sweats. He reported no history of recent trauma or contact with a TB patient. The physical examination was unremarkable. The condition was initially diagnosed as a frozen shoulder and treated with non-steroidal anti-inflammatory agents for nearly two months without any improvement.

Figure 1. Tuberculosis of scapula. A well defined radiolucent lesion is seen in the spine of scapula near the neck region.

Figure 2. CT scan of tuberculous osteomyelitis. Destructive expansile lesion in the body and neck of scapula extending into the spine and blade. Abscess noticed adjacent to the destroyed bone.

At this stage, a repeat physical examination revealed a swelling under the spine of the left scapula. It measured 2.5x2.5 cm and was round, nonerythematous, mildly tender, warm, and fluctuant to palpation. No draining sinuses were observed. Routine laboratory investigations were normal except for an elevated erythrocyte sedimentation rate (ESR) of 63 (0-15 mm/hr). A plain radiograph of the left shoulder showed a well defined radiolucent lesion in the spine of the scapula (Figure 1). A computed tomography (CT) scan of the scapula subsequently revealed a destructive expansile lesion in the body and neck of scapula extending into the spine and blade (Figure 2). A soft tissue mass around the destroyed bone with irregular marginal enhancement suggested abscess formation (Figure 2). Chest X-ray was unremarkable. A fine needle aspiration of the cystic swelling produced about six milliliters of thin purulent and sero-sanguinous fluid. Ziehl-Neelsen staining of the aspirate revealed the presence of acid-fast bacilli (AFB). Subsequent cultures grew Mycobacterium tuberculosis which was sensitive to all first-line anti-tuberculous drugs. Ordinary bacterial cultures remained negative.

A diagnosis of cystic osteoarticular TB was made. The patient was started on a four drug anti-tuberculous chemotherapy, comprising of isoniazid, rifampicin, pyrazinamide and ethambutol. The pain and swelling resolved completely after three months of chemotherapy. The ESR also came down to 2 mm/hr. A CT scan showed evidence of healing with reconstitution of bone, some sclerotic changes and sequestered bone and calcification. Surrounding soft tissue at this time was essentially unremarkable and was comparable to the opposite side. After nine months of chemotherapy, the patient was asymptomatic and had fully resumed his normal daily activities.

Discussion

Osteoarticular TB commonly involves the long bones. Involvement of flat bones is extremely rare.[4] Generally, osteoarticular TB results from late reactivation of an old infection, typically after trauma or immunosuppression. The initial seeding occurs at the time of primary infection through contiguous spread, haematogenous spread or lymphatic spread. In three-fourths of the patients the lung serves as the primary focus of infection. Arthritic involvement is more common than osteomyelitis in osteoarticular TB.[5]

Osteoarticular TB is generally seen in older children and young adults in the developing countries. Clinically patients present with localized symptoms of swelling and pain. A cold abscess is strongly suggestive of TB.[6] Only one-third of patients with osteoarticular TB have a history of pulmonary disease. Children are often afebrile and nontoxic whereas adults frequently have systemic symptoms of fever and weight loss.[7] Systemic symptoms generally occur when there is disseminated disease or pulmonary involvement.[2] Most cases with scapular TB have an elevated ESR.

There are no pathognomonic radiographic features of osteoarticular TB. Common radiographic features include osteopenia, osteolytic foci and varying sclerosis. Cystic TB is a common form of osteoarticular TB, as seen in this case. It is characterized by a well-defined round or oval radiolucent lesion with variable sclerosis.[8] The differentials for such features include eosinophilic granuloma, sarcoidosis, chordoma, fungal infections, metastases and pyogenic osteomyelitis.[8] A more rapid course and pronounced sequestration point in favour of the latter.[2] In children, the lesion may be confused with a cystic neoplasm.[7] Generally a tissue diagnosis is required to

establish definitive diagnosis. CT may help define the extent of involvement. Multifocal involvement is seen in children whereas in adults osteoarticular involvement is usually solitary.[5] There may be therefore, a role for bone scanning in children who have multifocal osteoarticular TB.

The uncommon site, lack of awareness, and ability to mimic other disorders generally leads to a delay in the correct diagnosis.[4] In endemic countries with limited resources, clinical suspicion and imaging is of invaluable significance with biopsy and surgical intervention being reserved for patients who fail chemotherapy or in whom resistant strains are suspected.[6] The primary treatment of osteoarticular TB is medical.[6] Operative interventions and drainage are an adjunct to anti-tuberculous chemotherapy. The World Health Organisation has recommended multi-drug therapy with initial intensive phase of two months and a continuation phase of four to six months for osteoarticular TB.[9]

This case was a typical case of scapular TB, but was initially misdiagnosed and wrongly treated for two months. It serves to highlight a rare form of osteoarticular TB. The endemicity of TB and the rising burden of AIDS might result in more patients presenting with this rare form of TB. It is therefore important for practicing physicians to have a high index of suspicion for TB, especially, in young adults presenting with longstanding complaints of pain and swelling in the shoulder region.

References

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