

Sternal tubercular osteomyelitis in an adolescent male: A rare case report

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Abstract

Sternal osteomyelitis incidence is approximately 0.3% of all types of TB (4). Almost 60% of skeletal TB cases involve the spine or weight-bearing joints. Hence the diagnosis sternal osteomyelitis is often not considered. On eliciting the history, patient complained of intermittent low grade fever, night sweats loss of appetite and loss of weight since the past three months. On examination Axillary Lymph nodes were inflamed. Pus culture showed multiple gram positive cocci and but no organism was isolated. ZN staining was negative for Acid Fast Bacilli however in CB- NAAT Mycobacterium TB was detected.

Keywords: Sternal tubercular osteomyelitis, adolescent, male

Introduction

Skeletal TB accounts for 6% to 10% of extra-pulmonary TB cases and 1% of all TB cases ^[1, 2, 3]. Sternal osteomyelitis incidence is approximately 0.3% of all types of TB ^[4]. Almost 60% of skeletal TB cases involve the spine or weight-bearing joints. Hence the diagnosis sternal osteomyelitis is often not considered. In fact, its rarity can be seen as Kelly and Chetty reviewed the world literature till 1985 and found only 6 described cases of sternal osteomyelitis ^[5] even though a few more cases have been described since then. We ourselves went through various search engines (Pubmed, Google, Altavista etc) and came with less than 40 described cases of sternal osteomyelitis.

Case presentation

A 19 year old male with a history of pain and swelling over the anterior aspect of chest wall since 3 months which had increased in the past 15 days. Pain was insidious in onset, and gradually worsened with time, was dull aching in character and pricking type. It was non-radiating and was associated with a swelling. There was a single swelling over the anterior chest wall, which was insidious in onset. Progressive in size and associated with pain. Patient had a fall 3 months back and had a dull aching pain ever since. He consulted a local orthopaedic surgeon immediately after the fall and was put on analgesics for a period of 1

week. However as the pain and swelling did not subside he was referred to us in Victoria Hospital.



Fig 1: Pre op swelling

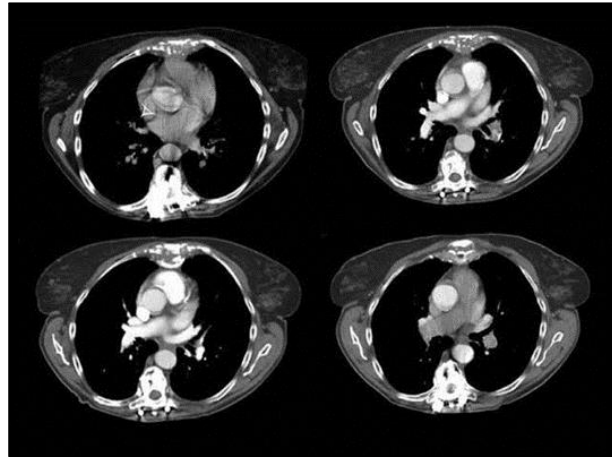


Fig 2: CT scan showing bone destruction

On eliciting the history, patient complained of intermittent low grade fever, night sweats loss of appetite and loss of weight since the past three months. On examination Axillary Lymph nodes were inflamed.

USG and Chest X-ray was done and routine blood investigations with Mantoux test and sputum culture was sent to the lab. USG showed an oblong shaped, predominantly liquefied mass with debris, bony spicules and septa measuring 7x3x4 cm. Swelling was in the sub-muscular plane and a CT correlation was advised based on the suspicion of haematoma/ abscess/ seroma. Chest X-ray was normal. A CT scan was done and it showed erosion of the sternum extending up to the manubrio-sternal joint and anterior chest wall erosion with soft tissue swelling suspecting osteomyelitis. Increased density of the region behind the sternum was also observed. But we concluded that inflammation had not affected the anterior mediastinum. The Mantoux test was negative but ESR and CRP was raised. Because the patient did not appear severely ill, we performed aspiration and sent the sample of pus culture and sensitivity, ZN staining, cell counts and CB-NAAT. Pus culture showed multiple gram positive cocci and but no organism was isolated. ZN staining was negative for Acid Fast Bacilli however in CB- NAAT Mycobacterium TB was detected.



Fig 3a: Incision



Fig 3b: Bony spicules seen after abscess drainage

Patient was started on ATT and was treated on OPD basis. Patient came to us for follow up the following week and complained of pain and sudden increase in swelling. As the patient was mildly symptomatic and did not have fever. He underwent incision and drainage of abscess & surgical debridement of necrotic tissue tissue with application of a 12 Fr Romovac

suction drain under ATT cover. Patient was followed up at suture removal, 3 weeks, months, 6 months.

He was asymptomatic and no recurrence of swelling was seen. Follow-up CT performed 3 months after surgery showed disappearance of fluid collection and ossification of the fracture site.

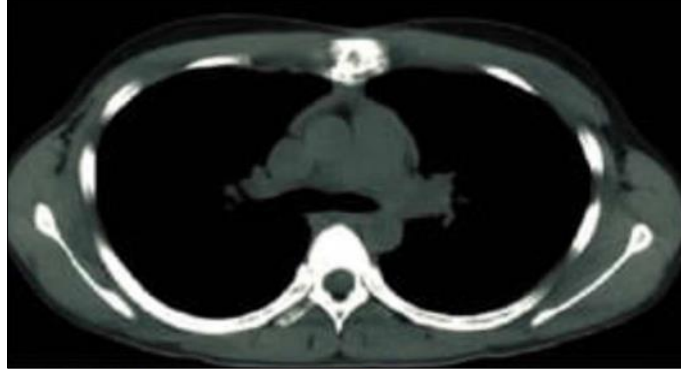


Fig 4: CT scan after 3 months

The patient did not show any symptoms and signs of recurrence at the final follow up. The patient did not require any omental flap or VAC dressing as the wound healed quite well.

Discussion

ATT is the mainstay of treatment of sternal osteomyelitis currently. extrapulmonary TB is generally treated with a six to nine month regimen (two months of Isoniazid Rifampicin, Pyrazinamide and Ethambutol, following which four to seven months of Isoniazid and Rifampicin is given), Many authors report surgical debridement to be essential to prevent recurrence or formation of a draining sinus ^[6]. According to these studies, drainage and debridement of necrotic material, which may or may not include sternectomy, concomitant with ATT is the mainstay of treatment as the sternum is a relatively avascular bone without debridement recurrence are high. Sternal body lesions are far more common than manubrial lesions. Sternal body osteomyelitis can be complicated by problems such as skin dehiscence, Pectus excavatum or even secondary mediastinal spread. Secondary mediastinitis and wound dehiscence are certain complications which require surgical intervention in the form of sternectomy and major chest wall reconstruction with skin flaps/omental flaps and VAC dressing in most cases we are of the opinion that minimal drainage and debridement with ATT would be a good option for treatment in a phased strategy.

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