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General Surgery

STERNAL TUBERCULOSIS - A CASE REPORT

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ABSTRACT Tuberculosis is very common disease in India. Sternum is not a very common site to be affected by tuberculosis. Diagnosis of sternal tuberculosis is often delayed because of lack of awareness and rare occurrence. We report a case of osteomyelitis of sternum caused by tuberculosis. Our patient presented with anterior chest wall abscess. Diagnosis was confirmed with polymerase chain reaction based test for tuberculosis along with magnetic resonance imaging of chest. Sometimes surgical debridement may be required for treatment of sternal tuberculosis. However, our patient required a long term treatment with antitubercular medication after which she was completely cured.

KEYWORDS :

INTRODUCTION:

Tuberculous infection of sternal bone is rare entity and only a few cases has been reported in the literature so far. Tuberculous infection leads to the osteomyelitis of the sternum. Tuberculous infection involving bones and joints accounts for 1-3 % of the total case load. Mycobacteria isolated from the sternum accounts for less than 1% of tubercular osteomyelitis. Diagnosis is often delayed because of lack of awareness and rare occurrence. We report a case of sternal tuberculosis which presented as anterior chest wall abscess.

Case Report:

43 years old female with no co-morbidities presented with complains of painful swelling over the sternum since last 15 days. Swelling was insidious in onset and gradually progressive to present size of 2 cm X3 cm. Swelling was associated with pain and fever since last 7 days. Pain was severe in nature, non-radiating with no aggravating and relieving factors. Fever was mild in nature not associated with chills or rigors. On clinical examination there was a well-defined 2 cm X3 cm swelling over the sternum with local rise of temperature and redness and it was tender on touch. Features were suggestive of a bacterial abscess. Incision and drainage of abscess was done. While draining, 10 cc pus was removed. The abscess cavity was reaching up to the sternum. Pus and tissues samples were collected and sent for bacterial culture, histopathology and TB gene expert and AFB culture sensitivity.

Histopathology of the tissue showed Necrotizing granulomatous inflammation, suggestive of tuberculous aetiology. However, Ziel Nielsons stain was negative for Acid fast bacilli. Gene expert showed mycobacterium tuberculosis detected which was sensitive to Rifampicin. Pus for TB culture was negative for growth of mycobacterium. MRI chest wall was done, it was suggestive of osteomyelitis of sternum.

She was started on standard 4 drug anti-Tuberculosis treatment consisting of Rifampicin, Isoniazid, Pyrazinamide and Ethambutol for 2 months. She was given continuation phase treatment with Rifampicin, Isoniazid, Ethambutol for 16 months. She showed slow resolution of abscess cavity with persistent discharge coming from it till 6 months of treatment, therefore continuation phase of treatment was prolonged to 16 months. After completion of treatment repeat MRI showed complete resolution of osteomyelitis lesion of sternum with complete healing of defect of skin anterior to it. After three years of follow up she is now asymptomatic.

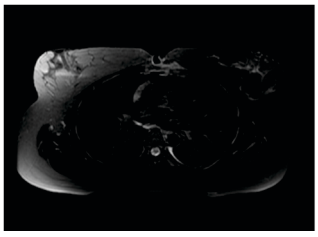

Figure 1 : MRI image showing osteomyelitis lesion of the sternum with visible cavity pointed by arrow

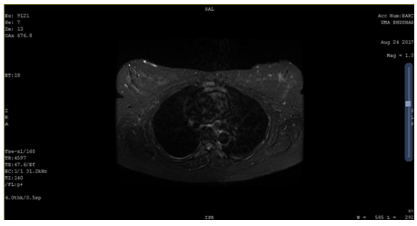

Figure 2: MRI image post antitubercular treatment, showing complete resolution of osteomyelitic cavity

DISCUSSION:

India is a major contributor to the world TB case load. According to a recent study, worldwide annual incidence of tubercular case is 9.4 million of which 2 million is being reported from India. [4] Tuberculosis can infect any organ in the body, pulmonary TB being the most common. Extra pulmonary Tuberculosis accounts for 15-20% of annual TB case load with spine and hips being the most common sites.[5]Sternum is the bone which is most resistant to tubercular infection. Osteomyelitis of the sternum accounts for less than 2% of the cases. [6]Sternal tuberculosis may result as late complication of pulmonary tuberculosis or as reactivation of latent tubercular infection .[7][8] Direct extension from the mediastinal lymph nodes causing sternal tuberculosis has also been described in literature. [2]

MRI chest and CT being the primary investigation of choice.[9] MRI helps in picking up the bone marrow involvement and peri-sternal involvement of soft tissues.[10] CT chest helps in evaluation of source of sternal involvement as it can pick up Pulmonary Koch's or mediastinal nodes. Confirmatory diagnosis of sternal TB is mainly based on histological and microbiological evaluation. [9]

Few cases of sternal tuberculosis respond to only medical treatment, although some cases may require aggressive surgical debridement along with medical treatment. Eyer MM did a systematic review of literature in 32 published sternal TB cases and found that the treatment duration varies from 6 months to 17months.[11]There is lack of consensus for the duration of medical treatment. Presently many surgeons practices to continue treatment till there is radiological resolution of the tuberculous lesion. [12]However it has been noted that, prolonged treatment may be required if surgical debridement of the lesion is not done. In our case, patient received the initial phase of treatment consisting of HRZE for two months followed by continuation phase of HRE for 16 months. Our case required prolonged treatment in view of slow response to treatment.

CONCLUSION:

Tuberculosis of sternum is rare entity. In a case of abscess of sternum, the pus should always be sent for evaluation of tuberculosis. This will improve the chances of diagnosis of tuberculosis of sternum. Tuberculosis of sternum may require prolonged continuation phase of antitubercular treatment.

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