



STERNUM: RARE SITE OF PRIMARY TUBERCULOSIS

Radio-Diagnosis

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ABSTRACT

Sternum is one of the least common bones of the body to get infected.^[1]

Sternal tuberculosis or sternal osteomyelitis are known to occur secondary to the primary pulmonary tuberculosis, trauma, are commonly identified in the sternum and sternoclavicular joints.^[2] Sternal tuberculosis has been reported after open heart surgery, in heroin addicts and in HIV positive patients, thalassemia, after BCG vaccination^[3] and with disseminated and miliary tuberculosis.^[1]

Extra-pulmonary tuberculosis constitutes 15-20% of total tuberculosis (TB) case load in immuno-competent patients.^[4] Occurrence of primary sternal tuberculosis in absence of primary tuberculosis, trauma, immunocompromised status and operative history is even more rare.^[2]

Sternal tuberculosis accounts for less than 2% of cases of osteomyelitis.^[4] Two immunocompetent patients who came with complaints of lump over chest with pain were examined and HRCT was done.

KEYWORDS

CASE:

A 14 year old male came to the surgery OPD of D. Y Patil hospital with primary complaints of pain and lump over chest since 8 months. Patient gave no operative history or history of trauma. Clinically, local rise of temperature, tenderness and redness was present. (Figure 1 and 2) There was no presence of any discharging sinus on cutaneous surface.



Image 1 And 2: A 14 year old male with complaints of lump over chest with tenderness, redness and local rise of temperature.

Further, CT scan was done which demonstrated a 10 x 5.6 cm sized hypodense collection with thin enhancing wall adjacent to the body of sternum. It is seen causing erosive/ destructive changes of the sternum. Anteriorly the lesion is seen causing contour bulge over the chest wall and posteriorly it is seen abutting the anterior pericardium. (Image 3 and 4). Lung fields on the HRCT chest were clear (Figure 5). On laboratory investigations, ESR was raised. AFB staining was positive. Patient was put on Anti-tubercular treatment.

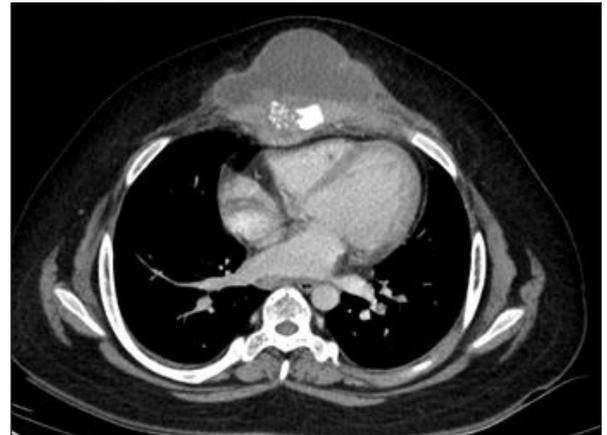


Figure 3: Axial view of contrast enhanced HRCT chest in soft tissue window showing hypodense collection with thin enhancing wall adjacent to the body of sternum with erosive changes of the underlying sternum.



Figure 4: Sagittal view of contrast enhanced HRCT chest (in soft tissue window) showing hypodense collection with thin enhancing wall adjacent to the body of sternum with erosive changes of the underlying sternum.

tissue window showing cystic lesion with thin enhancing adjacent to the body of sternum. Abutment of the anterior pericardium can be seen.



Figure 5: Axial view HRCT Chest of the same patient showed normal lung fields.

Another 22 year old female came to D. Y. Patil hospital with complaints of swelling over left chest wall with pain. On HRCT plain, erosive changes were seen involving the manubrium sterni, first costosternal joint and mid shaft of the first rib. (Figure 6).

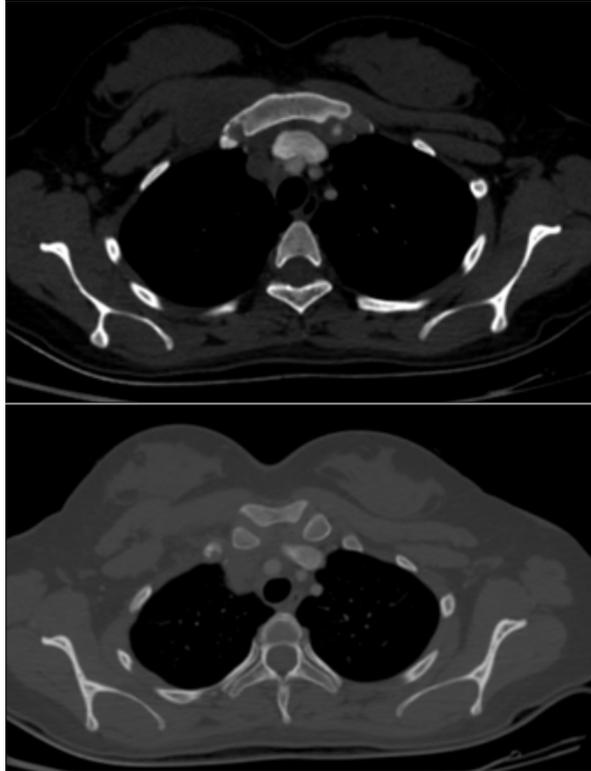


Figure 6 And 7: Axial section of bone window of HRCT showing focal erosive changes involving the manubrium sterni and first right costovertebral joint.



Figure 8: Axial section in soft tissue window showing hypodense collection involving the right anterior chest wall.

A 5.1 x 2.6 cm sized hypodense collection was seen involving right anterior chest wall in the inter/intramuscular plane. (Figure 7). HRCT chest showed normal lung fields.

AFB staining was positive.

DISCUSSION:

Extra-pulmonary tuberculosis constitutes 15-20% of total tuberculosis (TB) case load in immuno-competent patients.^[4] Sternal osteomyelitis accounts for less than 2% of cases of osteomyelitis.^[4]

Previous reports on sternoclavicular tuberculosis have been in the form of limited case reports alone: Martini (1988) found 1 case of 642 with osteoarticular TB, while Tuli reported 4 of a total of 1,074 cases. The diagnostic use of CT/MRI has been stressed in only one report (Yasuda et al. 1995).^[6]

Skeletal tuberculosis most commonly occurs in first three decades of life. The characteristics are insidious onset, mono-articular or mono-osseous involvement and constitutional symptoms like low grade fever and lassitude, anorexia, weight loss, night sweats, tachycardia and often anemia.^[5]

Septic arthritis of SCJ with *Staphylococcus aureus* and *Pseudomonas aeruginosa* is more common (9%) than mycobacterial involvement of the joint (1-2%).^[1]

The treatment of tuberculosis of sternum is based on a combination of adequate antituberculous chemotherapy and surgical debridement. Surgical debridement is essential to prevent recurrence or formation of draining sinus.^[7]

CONCLUSION:

The incidence of primary sternal tuberculosis is very rare even in endemic areas of tuberculosis like India.

The sensitivity of CT in diagnosing early erosive changes is more than any other modality.

These changes which are often missed on X ray,^[8] can be picked up with high degree of confidence which can be confirmed further on interventional procedures like FNAC or biopsy.

TB should be suspected when non resolving painful swellings are seen in this region.^[6]

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