



A rare presentation of combination of sternal cold abscess and sub diaphragmatic abscess with miliary tuberculosis.

KEYWORDS

miliary TB, sternal cold abscess, sub diaphragmatic abscess

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ABSTRACT Tuberculosis (TB) can disseminate to almost every organ after a primary infection or reactivation of latent foci. osteoarticular tb account for approximately 10 percent of extra pulmonary tb.while spine is the most common site for osteo articular tb. osteomyelitis of sternum is rare.In clinical series the reported incidence is 1% of all bone and joint tb cases. A sub diaphragmatic abscess secondary to tb is very rarely reported in literature. A combination of sternal cold abscess, subdiaphragmatic abscess with miliary tb is not reported in literature. Here we report a case of combination of subdiaphragmatic abscess and sternal abscess with miliary tb.

Case report: A 30 year old male patient came to hospital with chief complaints of mass in superior mediastinum since 1 month which is gradually progressive in size and also patient complaints of pain in right hypochondrium since 4 months. Patient was diagnosed to have subdiaphragmatic abscess and abscess was drained 2 months back and treated with antibiotics and now patient complaints of low grade fever, anorexia, generalized weakness with cough with sputum expectoration.

On examination there was a soft swelling of about 4 x 3 cm on the upper part of body of sternum (fig1). It was painless fluctuant swelling adherent to bone. There was tenderness in right hypochondrium which was aggravated with deep respiration. Rest of the systemic & general examination was normal

The blood investigations reveal Hb 10 gm/dl, Wbc 10,000/mm³, ESR 68mm in first hour with normal LFT & RFT values. Chest x ray PA view shows radiculo nodular opacities. The sputum was negative for AFB. X ray erect abdomen shows fluid collection in right sub diaphragmatic region. CE CT chest of the patient shows consolidation of anterior segment of right lower lobe, Hypodense collection anterior to sternum with bone erosion suggestive of cold abscess (fig 2), miliary mottling of both lungs (fig3). Peripheral enhancing hypodense collection in sub diaphragmatic and porta hepatic region (fig 4). FNAC of mediastinal mass shows thick pus which on histological examination reveal granuloma in necrotic background and ziehl neelson staining was positive for acid fast bacilli. The pus from subdiaphragmatic abscess was drained and was positive for AFB on ziehl neelson technique. The culture and sensitivity test was negative for routine bacterias and fungal filaments. The patient was put on ATT with rifampicin, INH, Ethambutol and pyrazinamide for which swelling slowly subsides and patient was discharged and asked to come for further followup.



fig 1: figure showing a soft swelling anterior to sternum

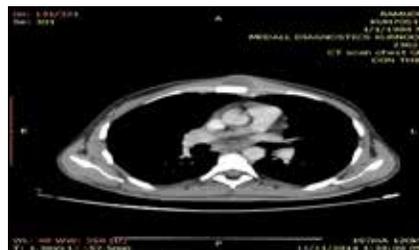


fig 2: CT Chest showing hypodense collection anterior to sternum with bone erosion suggestive of cold abscess.

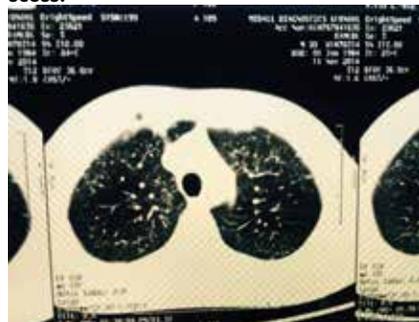


fig 3: Miliary mottling of both lungs

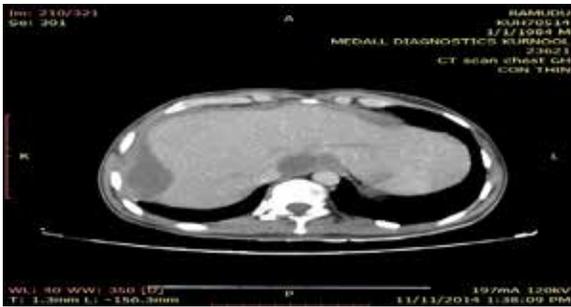


Fig 4: peripheral enhancing hypodense collection in sub diaphragmatic and porta hepatic region.

Discussion: Sternal TB osteomyelitis presents with clinical manifestations similar to other forms of osteoarticular TB disease. Inflammatory markers such as erythrocyte sedimentation rate, C-reactive protein lactate dehydrogenase and white blood cell count are almost universally elevated³.

Thoracic TB disease most commonly involves the shafts of the ribs or the costovertebral or costochondral junctions. The proportion of sternal involvement of all thoracic TB cases in series from England, India, and Saudi Arabia ranges from 0% to 7% . A recent sternotomy wound after cardiovascular surgery is also associated with sternal TB, presumably from reactivation of pulmonary TB. Sternal osteomyelitis as a complication of the BCG vaccine has been noted to resolve after treatment with antituberculous medications⁴.

The differential diagnosis of chest wall masses with or without discharging sinuses includes pyogenic infections (ie, *Staphylococcus* or *Streptococcus* species), malignancy (lymphoma or metastatic breast, lung or prostate cancer), Brodie's abscess and granulomatous lesions (sarcoidosis, *Mycobacterium* species, or fungal infections from *Coccidioides*, *Histoplasma*, *Blastomyces* or *Cryptococcus*)⁵. In Martini and Cuahes' case series they found 81% of TB osteomyelitis cases had a sinus formation and 43% of these had a superadded pyogenic infection, which was usually caused by *Staphylococcus aureus*. This superadded infection could lead to misdiagnosis, and could explain the more aggressive phase of the disease.

Bone pain that does not respond to analgesic medications is characteristic of an infection like TB or a neoplasm, so appropriate imaging with CT or MRI should be pursued when plain radiographs are normal⁶ . Gallium scans can be useful in showing other involved organs, but are also nonspecific with regard to the cause of infection and extent of damage⁷. A needle aspiration or excisional biopsy is mandatory for histopathological diagnosis of sternal osteomyelitis, because radiological findings cannot differentiate the cause of osteomyelitis, and sometimes may even appear neoplastic. Polymerase chain reaction and nucleic acid probes are now available for more rapid identification of mycobacteria not readily seen by microscope. Mycobacterial sensitivities on cultures should always be done due to the increasing incidence of MDR TB.

ATT is the mainstay of treatment for sternal TB osteomyelitis currently. Although there is no consensus guideline to the precise regimen and duration for sternal TB, extrapulmonary TB is generally treated with a six to nine month regimen (two months of isoniazid, rifampin, pyrazinamide and ethambutol, followed by four to seven months of isoniazid and rifampin), unless the organisms are known or highly suspected to be resistant to these first-line drugs. Clinical response precedes radiographic response, and the pain often resolves anywhere from two to six months before radiographic findings⁸ .

Many authors report surgical debridement to be essential to prevent recurrence or formation of a draining sinus . Debridement can be followed by rotational tissue flaps (pectoralis major, rectus abdominis, latissimus dorsi or omentum flap closure) and/or vacuum-assisted closure to cover the chest wall defect and prevent chronic sinus formation and the need for secondary reconstructive procedures.

Conclusion: Our patient had sternal cold abscess with sub diaphragmatic abscess and miliary tuberculosis which is a rare presentation. As always a proper history and physical examination are the key to forming appropriate differential diagnosis. Despite sternal TB is a long indolent course and ability to cause extensive osteomyelitis, ATT alone has succeeded in relieving the present patient symptoms and he will likely not need surgery. For sub diaphragmatic abscess drainage with ATT is sufficient in our case.

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