CASE REPORT

Tubercular osteomyelitis of rib — Case report

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Summary
Musculoskeletal tuberculosis which is less frequently encountered is the commonest form of extrapulmonary tuberculosis. Occasionally tuberculosis may involve the chest wall causing rib destruction. Usually the associated lesion in the pleuro-pulmonary region is found. We report a case of tubercular osteomyelitis of the rib causing its destruction with no associated lesion in lung parenchyma or associated lymphadenopathy. Patient was successfully managed by anti-tubercular drugs.

Introduction
Musculoskeletal tuberculosis is the commonest form of extrapulmonary tuberculosis. However, the involvement of rib is quite uncommon. Anti-tubercular drugs are the treatment of choice. We report a case of tubercular osteomyelitis of the rib causing rib destruction which was successfully managed by anti-tubercular drugs.

Case report
A 40-year old nonsmoker female of low socioeconomic status presented with three months history of pain and swelling over left chest wall. Pain was insidious in onset. It was localized and used to subside by taking analgesics. It used to aggravate by physical activity and coughing. Patient was having episodes of evening rise of temperature for the last 2 months associated with weight loss (about 4 kg in last 3 months), loss of appetite, malaise and fatigue. However, there was no history of cough or shortness of breath. Her past and family history was not suggestive of tuberculosis. There was no history of trauma. Physical examination showed pulse rate — 88/min, blood pressure — 136/80 mm of Hg and respiratory rate — 18/min. Pallor was present. On her chest examination swelling in the left axilla was found. It was tender but the local temperature was not raised. No axillary or cervical lymphadenopathy was found. There was no tenderness over spine. Abdominal examination showed no organomegaly or any free fluid in the peritoneum.

Laboratory investigations showed Hb — 8 gm%, TLC — 8600/cu mm, DLC — P72L20E06M02 and ESR — 60 mm in first hour. A montoux tuberculin skin test (purified protein derivative — 5 tuberculin unit) was positive (20 x 22 mm) after 48 hours of test dose. Chest radiograph showed...
expansile lytic lesion over the sixth rib (Fig. 1). Rest of the lung parenchyma was normal. Contrast enhanced computed tomography of chest showed an expansile lytic lesion involving sixth rib on left side with cortical erosion and destruction of the same rib. Along with it showed thickening of the adjacent pleura. However, there was no evidence of mediastinal or hilar lymphnode involvement. Lung window on CT was normal. Fine needle aspiration cytology of the swelling showed caseous necrosis with epithelioid and Langerhans giant cells suggestive of tuberculosis. Ziehl-Nelsen staining was negative for acid fast bacilli (AFB) but culture for AFB was positive. Anti-tubercular drugs (Rifampicin, Isoniazid, Pyrazinamide and Ethambutol) were started in standard doses and patient started improving.

Discussion

Musculoskeletal tuberculosis is the commonest form of extrapulmonary tuberculosis which accounts for 10–15% of all the tuberculosis cases in developing world while in Western world it accounts for only 1–2% of cases.1 In skeletal system tuberculosis, vertebral column (50%) is commonest site followed by hip (15%) and knees (5%).2 However, the involvement of rib in tuberculosis is quite infrequent. Involvement of the rib in skeletal tuberculosis is being reported from 0 to 5% of bone tuberculosis2 and it is the commonest inflammatory disorder involving the ribs.3 Tuberculosis is also considered as the second commonest cause of rib destruction after metastasis.3 Tubercular involvement of rib occurs from direct extension from nearby pleuro-pulmonary foci or by hematogenous spread from distant foci. Usually the skeletal tuberculosis is associated with a primary focus in the lung but in our case we were not able to detect any lesion in the lung. Destruction of bone in tuberculosis results from pressure necrosis by granulation tissue and also by the direct action of invading organisms.

Tuberculous abscesses of the chest wall not only involve the rib but can also involve sternum, costochondral junctions, costovertebral joints and the vertebrae. They are most frequently found at the margins of the sternum and along the rib shafts.4 Patient usually presents with the complaints of swelling, pain or discharging sinus along with the constitutional features of tuberculosis. Differential diagnosis includes the metastatic or primary tumor, metabolic bone disorder or trauma. Lack of description of the involvement of the rib from the nearby focus may be due to insensitivity of the X-ray in detecting such lesion.2 X-ray can detect the lesion but CT is considered ideal for evaluation of chest wall lesion as it shows the nature and extent of soft tissue lesion and associated intrathoracic lymphadenopathy and bone erosion.5 Diagnosis of tuberculosis in rib is confirmed by demonstration of granulomatous reaction on cytology and acid fast bacilli by microscopy or by culture. Anti-tubercular drugs are the mainstay of treatment though surgery may be helpful in establishing the diagnosis or treating the recurrent or complicated cases by removing the sequestrum.

Conflict of interest statement

There is no conflicts of interest to declare.

References