CASE REPORT

TUBERCULOSIS OF THE RIB IN A 20 MONTH’S OLD BOY

El Mouhtadi Aghoutane, Tarik Salama, Redouane El Fezzazi

Pediatric surgery department, Kadi Ayyad University, Marrakech, Morocco

Abstract

Primary tuberculosis osteomyelitis of the rib is rare. The majority of cases occur in children and young adults and there is difficulty in diagnosis mainly in young children. We report a new rare case in a child aged only of 20 months causing rib destruction. Tuberculosis was confirmed on histological examination. No lesions in lung parenchyma or lymphadenopathy were associated. The patient was successfully managed by anti-tubercular drugs.

Keywords: Tubercular Osteomyelitis, Rib Destruction, Children

Corresponding author: El Mouhtadi Aghoutane, Pediatric surgery department, CHU Mohammed VI, Kadi Ayyad University, Marrakech, Morocco
Tel: 00212611792289
Fax: 00212524306869
Email: elmohtadi@yahoo.com

Introduction

Despite the decline in the incidence of tuberculosis during the last decades, the disease remains a significant public health problem in developing countries like Morocco [1].

Musculoskeletal tuberculosis accounted for 15% of all extra pulmonary localizations [1-2]. Tuberculosis of the rib is an uncommon form of osteoarticular tuberculosis, and it occurs in 0 – 5% of cases of bone and joint infection [3]. It has an insidious onset and < 50% of patients have active pulmonary disease [4]. We report a new case of rib tuberculosis in a child aged only of 20 months, with literature review.

Case Report

A 20 months old boy of low socioeconomic status presented with 3 months history of pain and swelling over right chest wall. There was no family history of previous exposure to tuberculosis infection. The boy received BCG vaccination at birth. Physical examination showed normal weight and temperature. On his chest examination, swelling in the right chest was 2/2 cm. It was tender to palpation with normal local temperature. Abdominal and pulmonary examinations were normal. Laboratory investigations showed Hb -12g/dL, erythrocyte sedimentation rate 40mm/1h. A tuberculin skin test was positive (15/12mm) after 48 hours of test dose. Chest radiograph showed a lytic lesion of the anterior part of the right seventh rib (Figure 1).
Figure 1. Chest radiograph showed a lytic lesion of the anterior part of the right seventh rib.

The rest of the lung parenchyma was normal. Contrast enhanced computed tomography of the chest showed an expansive lytic lesion involving the anterior part of the seventh rib with cortical erosion and destruction of the same rib. However, there was no evidence of mediastinal or hilar lymph node involvement. Lung window on computed tomography was normal (Figure 2).
Figure 2. Contrast enhanced computed tomography of the chest showed an expansive lytic lesion involving the anterior part of the seventh rib with cortical erosion and destruction of the same rib. Lung window was normal

Surgical debridement of necrotic tissues and drainage of purulent liquid were performed. Tuberculosis of the rib was confirmed on histological examination of the resection specimens by the presence of a caseous necrosis with epithelioid and langerhans giant cells. Anti-tuberculosis drugs were administered for 12 months. The boy was followed-up for 17 months with satisfactory healing of his tuberculosis lesions.

Discussion

Musculoskeletal tuberculosis is the commonest form of extra pulmonary 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 [5]. In skeletal system tuberculosis, vertebral column (50%) is the commonest site followed by hip (15%) and knees (5%). Involvement of the rib in skeletal tuberculosis is being reported from 0 to 5% of the bone tuberculosis and it is the commonest inflammatory disorder involving the rib [6]. Majority of the cases occur in children and young adults and the diagnosis is usually delayed for several weeks [2]. Tubercular involvement of the rib occurs from direct extension from nearby pleuro-pulmonary foci or by hematogenous spread from distant foci [6]. Usually the skeletal tuberculosis is associated with a primary focus in the lung [3] but in our case, we were not able to detect any lesion in the lung. Faure et al [7] noted that most solitary rib involvement was most frequent located at the rib shaft (60%) as was evident in our case.
The presenting symptoms of rib tuberculosis are a painful lesion or non-tender chest wall mass or chest pain. A draining sinus has been seen in 25% of cases, but this was usually a late finding [3].

Differential diagnosis includes the metastatic or primary tumour, metabolic bone disorder or trauma [5-6].

X-ray can detect the lesion but computed tomography is considered ideal for evaluation of chest wall lesion as it shows the nature and extent of soft tissue lesion, associated intrathoracic lymphadenopathy and bone erosions [8].

Inflammatory marker and leukocyte result are often normal. Intradermal reaction is usually positive, but when negative, it does not rule out the underlying diagnosis [9-10].

Diagnosis of tuberculosis of the rib is confirmed by demonstration of granulomatous reaction on cytology and acid fast bacilli by microscopy or by culture [10-11]. Anti-tubercular drugs are the mainstays of treatment. Two months of isoniazid, rifampicin, pyrazinamide and ethambutol once daily is followed by 10 months of isoniazide and rifampicin once daily [2- 4]. Surgery may be helpful in establishing the diagnosis or treating the recurrent or complicated cases by removing the sequestrum [9-11].

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References


