Diaphyseal tuberculosis - a rare manifestation

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DESCRIPTION

A 2 year old child presented with low-grade fever, progressive pain and swelling of right leg for the past 3 months. There was no history of injury, chronic cough, respiratory symptoms, weight loss or arthritis. Child's father had been treated for pulmonary tuberculosis 1 year back. On examination, there was a firm, diffuse, tender swelling over the medial aspect of middle one-third of right tibia and matted inguinal lymphadenopathy. Rest of the systemic examination was not contributory. A clinical diagnosis of diaphyseal bone tumour or chronic infective osteomyelitis was considered.

Investigations showed erythrocyte sedimentation rate 46 mm in first hour, haemoglobin 96 g/L and 20 mm induration after Mantoux test and normal chest radiograph. Radiograph of the right tibia showed a lytic intramedullary bone lesion (Figure 1A–B). MRI confirmed an intramedullary lytic lesion with cortical breach and thickening (figure 1C). Histopathology showed caseous necrosis, granuloma formation, Langhans giant cells and acid-fast bacilli on microscopy and culture. Drug testing could not be done due to the non-availability of this test at that time. He received anti-tubercular therapy for 18 months. Anti-tubercular therapy included 2 months of daily intensive therapy with four drugs: isoniazid (H) 10 mg/kg, rifampicin (R) 15 mg/kg, pyrazinamide (Z) 35 mg/kg and ethambutol (E) 20 mg/kg. This was followed by 6 months of maintenance therapy with three drugs (HRE) and 10 months of 2 drugs (HR) in the same daily doses. At 2 years follow-up, the child was well with clinical and radiological resolution of the lesion (figure 1D–F).

Learning points

- In the absence of specific clinical and radiological signs, a high index of suspicion is needed in children with unexplained pain and swelling of the diaphysis of the bone.
- An osteolytic lesion with sequestrum should be considered infective and tuberculosis should be excluded, especially in endemic regions.
- Clinical and radiological heterogeneity warrant lesional biopsy and culture to establish the correct diagnosis.

Primary diaphyseal tuberculosis is very rare and probably results from hematogenous spread of mycobacteria that remain lodged in the nutrient vessel of the bone and fail to spread to the metaphysis.[1] Common differential diagnosis include chronic pyogenic or fungal osteomyelitis, Brodie's abscess, bone cysts, tumours or granulomas.[2] Absence of systemic signs, specific radiographic features and low index of suspicion may delay the diagnosis of tuberculosis. Because of such varied clinical and radiological presentations in endemic areas, biopsy and culture are necessary to establish the diagnosis.

Contributors All authors contributed in preparation of manuscript. NG collected all photographs and kept follow up of patient. US prepared the manuscript. DKC did the final editing.

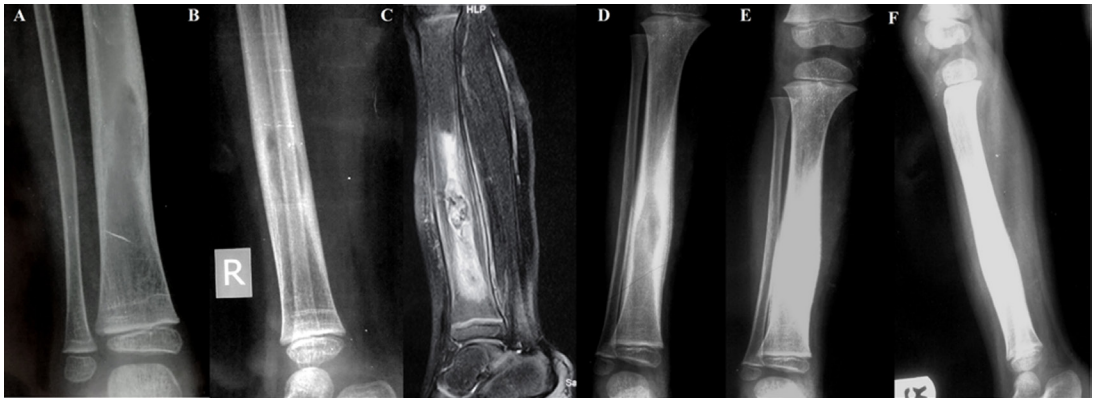

Figure 1 (A) Anteroposterior and (B) lateral view radiographs of the right tibia showing a large radiolucent area in the diaphysis (arrow) suggestive of a lytic intramedullary bone lesion extending into the endosteal surface of medial cortex (C) MRI T2-weighted sagittal section of right tibia showing a circumscribed, heterogeneous, necrotic area in the medullary canal with surrounding oedema and cortical sequestrum. The overlying cortex is thickened due to endosteal new bone formation with cortical breach (arrow) and mild swelling of the overlying soft tissue. (D) Anteroposterior radiograph of the right tibia after 1 year of treatment showing cortical thickening and sclerosis indicative of ongoing healing (E) Anteroposterior and (F) lateral view radiographs at 2 years follow-up showing marked sclerosis and healing of lesion.

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