



Anaemia and skeletal deformities

Kundan Kumar, Alakendu Ghosh

Clinical

A 22-year-old female presented to us with anaemia and gross skeletal deformities of all four limbs. Physical examination revealed pallor, icterus and hepatosplenomegaly, short stature and stunted growth. Plain radiographs of the chest and limbs were performed (Figures 1, 2, and 3).

Figure 1. Chest radiograph (PA view)



Figure 2. Radiograph of left forearm and hand



Figure 3. Radiograph of bilateral lower limbs



What is the diagnosis?

Answer

The chest radiograph (Figure 1) shows grossly expanded anterior ends of the ribs. The limb radiographs (Figures 2 and 3) show cortical thinning and lacy trabeculation of the limb bones. The patient was diagnosed as having *Beta-thalassaemia major* by haemoglobin electrophoresis.

The radiologic bone changes are due to marrow hyperplasia and marrow space expansion, resulting from prolonged and excessive haematopoiesis. These changes lead to growth disturbances, modelling deformities, and premature closure of the growth plate. These changes are associated with a characteristic radiologic appearance of the skull, long bones, ribs and hands. Growth is stunted. Gross skeletal deformities can occur as in this case.

These changes are not usually seen in today's practice due to wide and easy availability of safe transfusion therapy. An inadequately transfused child develops these typical radiological features.

Author information: Kundan Kumar, MD Resident; Alakendu Ghosh, Professor; Department of Internal Medicine, Institute of Post Graduate Medical Education & Research (SSKM Hospital), Kolkata, West Bengal, India

Correspondence: Kundan Kumar, R – 302 , Junior Doctors Hostel , SSKM Hospital, 242 AJC Bose Road, Kolkata – 700020, West Bengal, India. Email: kundanjp@gmail.com