

Images in Hematology

Edited by: Hamdi Akan M.D.

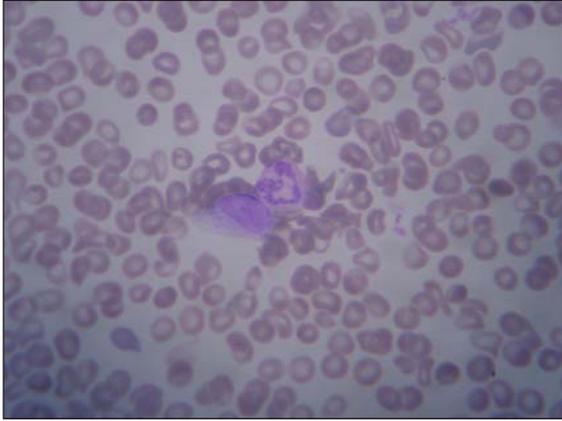
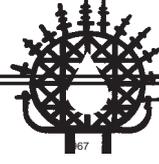


Figure 1. Peripheral blood smear

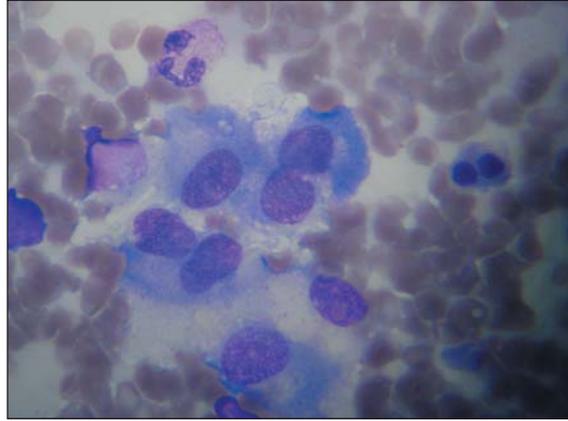


Figure 2. Bone marrow smear

An 8-month-old male infant was admitted with complaints of paleness, abdominal distention and weight loss which were noticed two months prior to admission. There was no family history of autoimmune disorders or hematological problems. Physical examination was significant for an afebrile infant with pallor. The abdomen was soft with a palpable liver edge 5 cm below the right costal margin and a spleen palpable 7 cm below the left costal margin. The musculoskeletal examination revealed enlarged wrists and rachitic rosary. Height, weight and head circumference were at the 50th percentile for age. The results of the complete blood count were as follows: hemoglobin 6.8 g/dL, mean corpuscular volume (MCV): 69 fl, white blood cell count $14.3 \times 10^9/L$, and platelet count $59 \times 10^9/L$. Peripheral blood smear revealed 66% lymphocyte, 4% monocyte and 22% neutrophil, 4% myelosit 4% atypical lymphocytes with inadequate platelets (Figure 1). Red cell anisocytosis and poikilocytosis with tear drop forms were seen. Serum iron level was 83 $\mu g/dL$ total serum iron binding capacity 145 μ/dL . Serum ferritin level was 545 ng/mL. Serum vitamin D level was 11.16 $\mu g/dL$ ($N > 15$). Abnormal serum chemistry studies included calcium 8 mg/dL, inorganic phosphate 1.3 mg/dL, alkaline phosphatase 2.666 U/L and parathyroid hormone level of 543 pg/mL (normal 11-67 pg/mL). Bone marrow examination revealed hypocellular specimens but showed a heterogeneous population of hematopoietic elements. A lot of osteoblasts were seen (Figure 2). The osteoblasts are large cells resembling plasma cells, but their chromatin pattern is more open, their cytoplasm less basophilic and they tend to occur in clumps. The patient was diagnosed as having myeloid metaplasia due to severe rickets by the presence of extramedullar hematopoiesis and increased osteoblastic activity on the bone marrow aspiration. The child was treated with a single oral dose of vitamin D (300. 000 U), followed by 400 units daily.

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