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Dysplastic eosinophils in myelodysplastic syndrome: association with complex karyotypes

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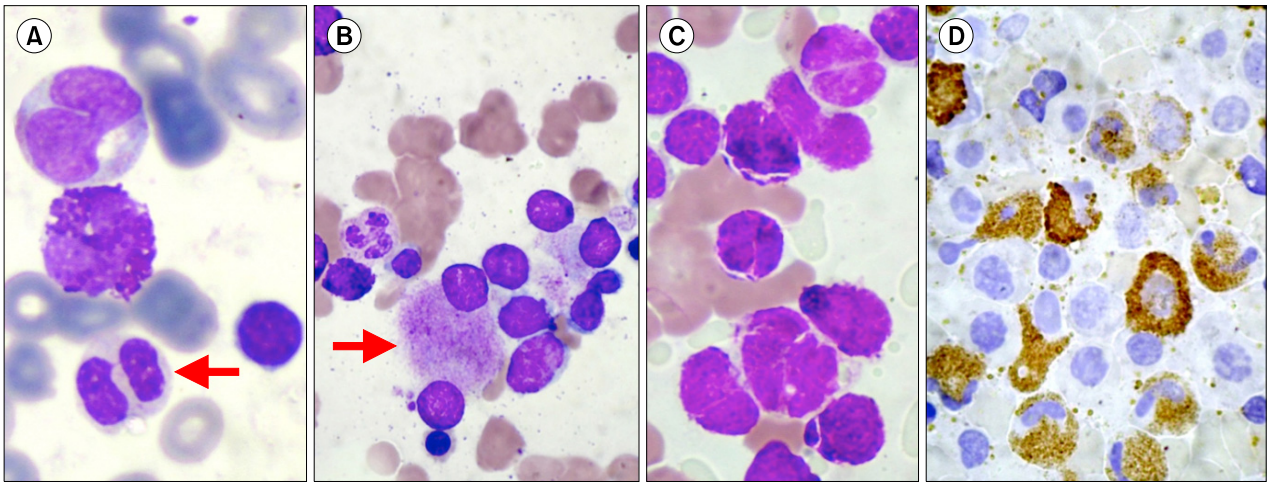

A 60-year-old woman presented with weakness and a history of multiple blood transfusions in the past 6 months. A complete blood count showed the following: hemoglobin concentration, 7.8 g/dL; platelet count, 30×10^9/L; and leucocyte count, 23.1×10^9/L. The peripheral blood smear showed the presence of dysplastic eosinophils (50%) with abnormally large purple-black basophilic granules, hypogranular neutrophils with pseudo-Pelger-Hüet anomaly (**A**, arrow; May-Grünwald-Giemsa stain, ×1,000), and 2% blasts. The bone marrow was hypercellular and showed features of refractory anemia with excess blasts (RAEB-2) with 15% blasts, dysplastic megakaryocytes (**B**, arrow), and numerous eosinophilic precursors with abnormally large granules (**C**) with strong myeloperoxidase positivity, hence confirming that these were dysplastic eosinophils (**D**). Conventional cytogenetics revealed major karyotype abnormalities (MAKA) with monosomy in chromosomes 5, 7, 8, 20, and 21, deletion in the short arm of 11, t(2;6), and the presence of 3 marker chromosomes in all metaphases analyzed in this study. The patient died within one month of diagnosis. Peripheral blood eosinophilia or bone marrow eosinophilia (Eo) is rare in myelodysplastic syndrome (MDS). It has been associated with MAKA, and patients with "MDS-Eo" usually have a shorter survival period than patients with MDS without Eo/basophilia.