Images of Hematology

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Leukemic manifestation of anaplastic lymphoma kinase-negative-type anaplastic large-cell lymphoma

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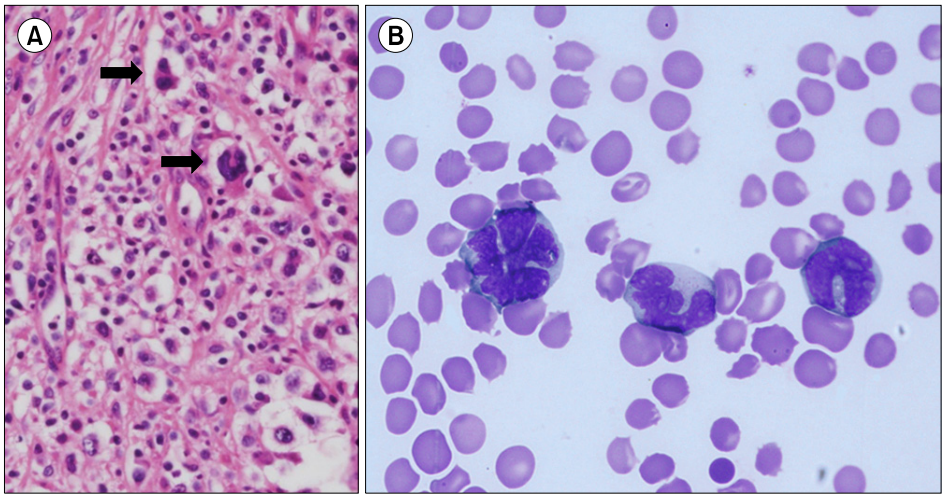

A 53-year-old woman had multiple bilateral axillary and left supraclavicular lymph-node (LN) enlargements for 6 months. LN biopsy revealed anaplastic large-cell lymphoma (ALCL) that was anaplastic lymphoma kinase (ALK)-negative (**A.** typical "hallmark" cell: pleomorphic neoplastic lymphoid cells, hematoxylin & eosin stain, ×400). A bone marrow (BM) study for staging work-up revealed no evidence of neoplastic lymphoid-cell infiltration. Chemotherapy was administered and autologous hematopoietic stem cell transplantation (a-HSCT) was performed. On day 55 post a-HSCT, follow-up complete blood cell count revealed abnormal findings: hemoglobin level, 9.4 g/dL; leukocyte count, $13.8\times10^3/\mu L$; and platelet count, $26\times10^3/\mu L$. Peripheral blood (PB) smear showed small to large pleomorphic neoplastic lymphoid cells (**B,** Wright stain, ×1,000) comprising 23% of the cells in differential counts. Subsequent BM study disclosed neoplastic lymphoid cells (6% in BM aspirate) in the BM clot, and the cells showed positive results for CD3 and CD30. On day 84 post a-HSCT, the patient's PB smears revealed leukocytosis; ALCL cells comprised over 70-94% of the nucleated cells. Although the small-cell variant of ALK-positive ALCL may be typically associated with involvement of PB, our patient showed a rare manifestation of ALK-negative ALCL involving PB, with a leukemic phase.