Images of Hematology

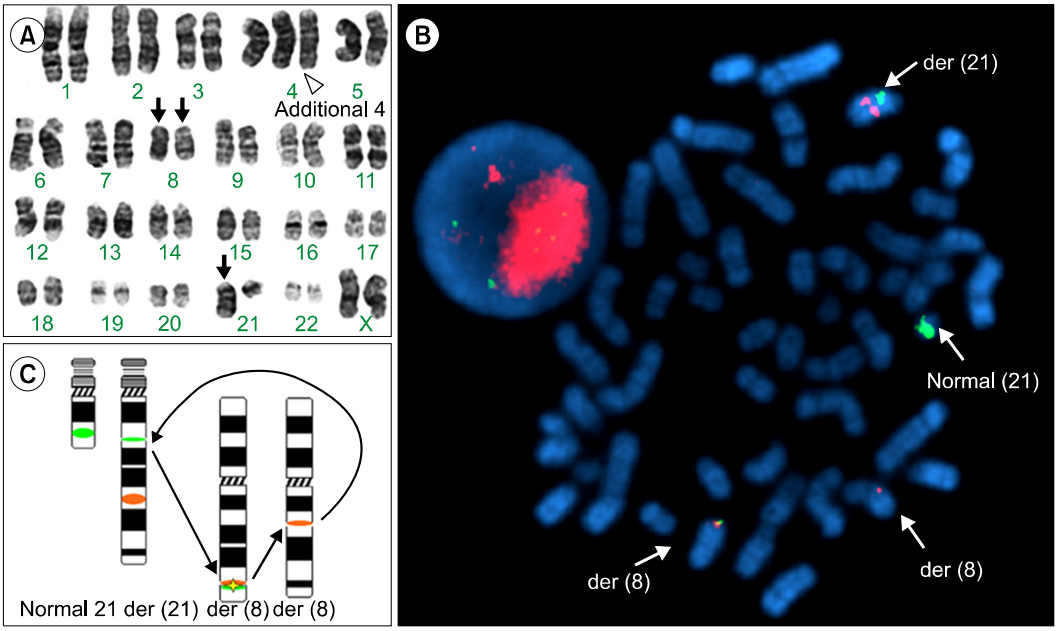
DOI: 10.5045/kjh.2010.45.2.89

The Korean Journal of Hematology
Volume 45 · Number 2 · June 2010

Complex translocation (8;8;21) with additional trisomy 4 in acute myelogenous leukemia

Jae-Hee Lee, Jung-Sook Ha

Department of Laboratory Medicine, Keimyung University School of Medicine, Daegu, Korea



A 35-year-old woman was admitted to undergo work-up for fatigue. Her blood leukocyte counts were 17.7×10^9/L, hemoglobin levels were 6.9 g/dL, and platelet counts were 15×10^9/L. The bone marrow aspirate showed 63% of blasts with Auer rods and bone marrow eosinophilia was absent. The blast cells expressed CD13, CD33, and HLA-DR, and they were negative for CD10, CD19, CD20, and CD7. Cytogenetic study of the marrow cells showed 46,XX, t(8;8;21)(q22;q13;q22)[12]/47,idem,+4[8]. Closed arrows indicate t(8;8;21)(q22;q13;q22) complements (A). We performed fluorescence in situ hybridization analysis using dual-color probes and observed a fusion signal on der(8), a small orange signal (*RUNX1T1*) on another der(8), and a large orange and a small green signal (*RUNX1*) on der(21) chromosome on a metaphase cell (B, C). The reverse transcription-polymerase chain reaction (RT-PCR) showed the presence of *RUNX1/RUNX1T1* fusion transcript. Complex variant of t(8;21) consists of about 3-4% of t(8;21) acute myelogenous leukemia (AML), and its partner chromosome is very variable. To our knowledge, only 2 cases of chromosome 8 as the partner of complex variant of t(8;21) have been reported. Trisomy 4 is a rare chromosomal abnormality in AML, and rarely occurs along with t(8;21). Although trisomy 4 has been associated with unique morphologic and clinical features as well as poor prognosis in AML, the prognostic impact of trisomy 4 in t(8;21) cases requires further evaluation.