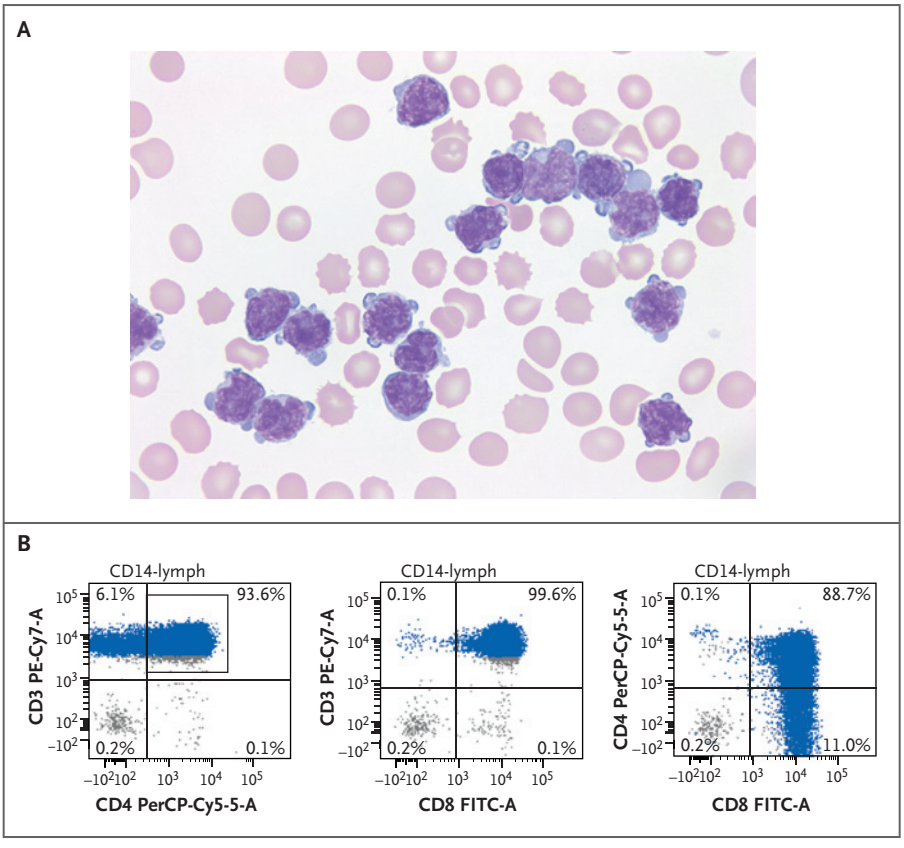
IMAGES IN CLINICAL MEDICINE

Chana A. Sacks, M.D., *Editor*

Cytoplasmic Blebs in T-Cell Prolymphocytic Leukemia



Hussein A. Abbas, M.D., Ph.D.
Xin Han, M.D.

University of Texas M.D. Anderson Cancer Center
Houston, TX
habbas@mdanderson.org

A 64-YEAR-OLD MAN PRESENTED TO THE EMERGENCY DEPARTMENT WITH A 6-MONTH HISTORY OF FATIGUE and dizziness. A physical examination was notable for an enlarged liver and spleen without lymphadenopathy. Laboratory studies showed a white-cell count of 1,279,000 per cubic millimeter (reference range, 4000 to 11,000) with 100% lymphocytosis, a hemoglobin level of 8.6 g per deciliter (reference range, 14 to 18), and a platelet count of 24,000 per cubic millimeter (reference range, 140,000 to 440,000). A peripheral-blood smear revealed numerous atypical intermediate-sized mature lymphoid cells with small nucleoli and knobbing cytoplasmic blebs (Panel A). Flow cytometry showed a population of mature T-cells with CD4+ and CD8+ coexpression (Panel B). The neoplastic lymphocytes were positive for *TCL1* as assessed by immunohistochemical analysis, and cytogenetic analysis revealed a complex karyotype that included inversion of chromosome 14(q11.2q32), with fluorescent in situ hybridization showing *TCL1* rearrangement. A diagnosis of T-cell prolymphocytic leukemia was made, and the patient was admitted to the intensive care unit. He began treatment with glucocorticoids, and leukapheresis was initiated. Subsequently, he received alemtuzumab and pentostatin; by the time of a follow-up visit 3 months later, he was in complete remission, with residual malignant cells below the threshold of detection (negative minimal residual disease).

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