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Chronic lymphocytic leukemia with unusual cytoplasmic anomalies

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An 82-year-old woman was admitted for cardiac insufficiency associated with obesity, renal insufficiency, and refractory atrial fibrillation. The patient had no history of hematological malignancies. Clinical examination revealed no lymphadenopathy, tumoral syndrome, or weight loss. Hematological tests showed the following: platelets, $173 \times 10^9/L$; hemoglobin, 10.3 g/dL; white blood cells, $10.5 \times 10^9/L$; and lymphocytes, $5.60 \times 10^9/L$. Cytological examination of blood smear indicated the presence of small lymphocytes with very mature chromatin, regular nuclei, and multiple intracytoplasmic sharp vacuoles, accounting for 41% of the total lymphocytes, as determined by manual differential white blood cell count (Panel A-I, May-Grünwald Giemsa Staining; $\times 1,000$). Flow cytometry analysis indicated the typical profile of chronic lymphocytic leukemia (CD5+, CD23+, FMC7-, CD22-, CD43+, and low monoclonal lambda chain). Due to the advanced age of the patient, cytogenetic analysis was not performed. Vacuoles are spherical organelles consisting of a double lipid layer; they contain intra or extracellular proteinaceous material. Vacuoles in lymphocytes have been reported in lysosomal storage diseases and neoplastic disorders; moreover, they are physiologically present in T and natural killer lymphocytes. Although vacuoles are more or less specific, they deserve attention as they can offer valuable insights.