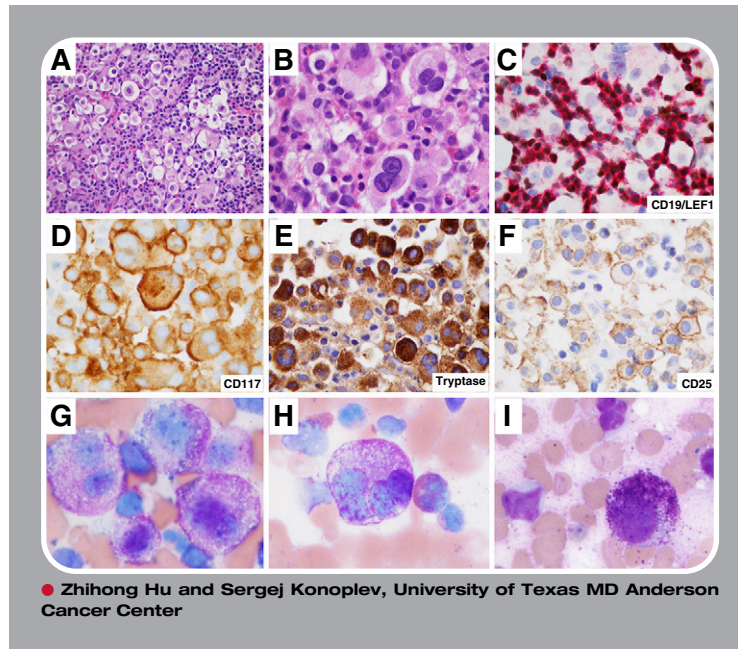


Aleukemic mast cell leukemia associated with chronic myelomonocytic leukemia and chronic lymphocytic leukemia



An 88-year-old man presented with anemia (hemoglobin, 10.3 g/dL) and thrombocytopenia (platelets, $74 \times 10^9/L$). Peripheral blood smear showed prominent leukocytosis (white blood cells, $37.3 \times 10^9/L$) with dysplastic granulocytes, monocytosis ($4.1 \times 10^9/L$), eosinophilia ($4.5 \times 10^9/L$), absolute lymphocytosis (lymphocytes, $6.7 \times 10^9/L$), and no circulating blast or mast cells. Biopsy and clot sections revealed 60% to 70% cellular marrow with 2 types of infiltrates: mast cell clusters (positive for CD25, CD117, and tryptase) representing 30% to 40% of marrow cellularity (panels A-F; [A-B] original magnification $\times 400$ [A] and $\times 1000$ [B], hematoxylin and eosin stain; [B-F] original magnification $\times 1000$, dual immunostain of CD19 [pink] and LEF1 [brown] [C], CD117 immunostain [D]; tryptase immunostain [E], and CD25 immunostain [F]), and lymphoid infiltrates positive for CD19/LEF1, involving 20% to 30% medullary space (panels A,C). Aspirate smears showed dysplastic myeloid and erythroid precursors, increased eosinophils, and mast cells (25%). The mast cells varied in size from small to giant with anaplastic features and a variable amount of granular cytoplasm (panels G-I; original magnification $\times 1000$, Wright-Giemsa stain). Flow cytometry detected $CD5^+/CD23^+$ monoclonal B cells with λ light chain expression. Fluorescence in situ hybridization studies were positive for 5q deletion and trisomy 8. A diagnosis of aleukemic variant of mast cell leukemia, chronic myelomonocytic leukemia (CMML), and chronic lymphocytic leukemia/small lymphocytic lymphoma was rendered.

Mast cell neoplasms are often associated with other hematopoietic neoplasms, including CMML and myelodysplastic syndrome. Most mast cell leukemia cases are an aleukemic type. This case illustrates the rare association of mast cell leukemia with both myeloid and lymphoid neoplasms in 1 patient.



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