Giant multilobated mastocytes (promastocytes) in the setting of a refractory acute myeloid leukemia with myelodysplasia-related changes and monosomal karyotype

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A 43-year-old woman was admitted due to a 6-week history of asthenia. She was pale; no other findings were observed in the physical exam. Blood count was $2.4 \times 10^9/L$, (56N, 33L, 9M, 1Eo), hemoglobin was 69 g/L, and platelet count was $15 \times 10^9/L$; 3% blast cells were counted in peripheral blood. A bone marrow aspirate showed 30% myeloperoxidase-positive blast cells, 20% erythroid cells, and 27% of semimature and mature neutrophilic myeloid cells. Dysplasia (>20%) was observed in all 3 myeloid cell lines. No mast cells were noted. She had the following karyotype: 46,XX [6]/44,XX,del(5)(q31), 29,211,212,213,216,219,14mar [21].

The patient did not reach hematologic response with either idarubicin/AraC (3/7) or FLAG-idarubicin schedules. Another bone marrow aspirate performed 6 weeks after the latter chemotherapy showed 12% myeloblasts. In addition, a number of hypergranular giant multilobated cells were observed (panel A). Immunocytochemistry stains (alkaline phosphatase anti–alkaline phosphatase) with CD117 (panel B) and CD25 (panel C) were positive, but CD2 was negative. Immunostain with tryptase was positive (panel D). Sanger sequencing of c-kit exons 8 and 17 ruled out mutations. We herein show atypical mastocytic cells in the setting of an evolved acute myeloid leukemia, although not fulfilling the criteria for myelomastocytic leukemia.