A 44-year-old woman presented with fever and arthralgias. Her past medical history included ulcerative colitis which was treated with azathioprine and infliximab. On admission, a full blood count revealed a hemoglobin level of 13 g/L, leukocyte count of 1.4 x10^9/L and platelets of 108 x10^9/L. Peripheral blood smear showed 14% of blast cells. Bone marrow smear was hypocellular and revealed an 79% of large blast cells with rounded nuclear contour, fine chromatin with one to three nucleoli and basophilic cytoplasm which were compatible with monoblasts. Erythrophagocytosis was frequently observed in several blasts (Figure 1A-1B). Hemophagocytosis of platelets was also observed (Figure 1C). Cytochemical staining showed strong alpha-naphthyl acetate esterase activity (Figure 1D). Flow cytometry analysis showed a large blast population with immature monocytoid phenotype (cyMPO+, HLADR+, CD14-, CD33+, CD34-, CD64+ and CD117-). Cytogenetic analysis displayed a null karyotype. A molecular analysis with nested RT-PCR was done in order to dismiss KAT6A-CREBBP gene rearrangement which was negative. Bone marrow
evaluation after induction chemotherapy showed complete morphological remission and normal karyotype. Erythrophagocytosis by leukemic blasts is an extremely rare phenomenon and is mostly seen in acute myeloid leukemia, especially associated with monocytic differentiation, t(8;16)(p11.2;p13.3)/KAT6A-CREBBP, t(16;21)(p11;q22) and inv8(p11q13) [1-3]. Erythrophagocytosis in case of monoblastic acute leukemia should prompt exploration for t(8;16)(p11.2;p13.3)/KAT6A-CREBBP [1,4].

References


Figure 1. Bone marrow aspiration smear: (A,B) erythrophagocytosis by leukemic monoblasts (May-Grünwald Giemsa, 100x); (C) concomitant hemophagocytosis of erythrocytes and...
platelets by leukemic monoblasts (May-Grünwald Giemsa, 100x); (D) strong positivity for alpha-naphthyl acetate esterase in leukemic monoblasts with erythrophagocytosis of two polychromatophilic erythroblasts (Alpha-naphthyl acetate esterase, 100x)