Erythrophagocytosis by neoplastic cells in a patient with myelodysplastic syndrome

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In March 2003, a 69-year-old man entered the hospital because of pancytopenia. Based on the cytological features observed on a bone-marrow smear, a diagnosis of myelodysplastic syndrome was proposed. In October 2003, due to the worsening of his haematological conditions, a bone marrow biopsy was performed. The latter showed a clear-cut trilinear dysplasia, with a number of CD34$^+$ myeloid precursors that did not exceed 5% of the marrow cellularity. Notably, dysplastic myeloid elements (MPO+, CD68/PG-M1-, LAT-) displayed prominent erythrophagocytosis (Figures 1-4, arrowed). Phenomena of erythrophagocytosis and emperipolesis by macrophages (CD68/PG-M1$^+$: Figure 3, encircled) and megakaryocytes (LAT$^+$: Figure 4, encircled) were minimal. Based on these findings, a diagnosis of refractory cytopenia with multilineage dysplasia associated with erythrophagocytosis by neoplastic cells was made. Erythrophagocytosis by reactive histiocytes is a quite common feature. Less frequently neoplastic cells are themselves capable of erythrophagocytic activity: this has been observed in a series of tumours, including lymphoma, histiocytic sarcoma, malignant melanoma, carcinoma etc. [1] Erythrophagocytosis has also been exceptionally recorded in precursors cells of the granulopoiesis,[2] especially during the course of acute myeloid leukaemias.[3] To the best of our knowledge, this is the first true example of erythrophagocytosis by abnormal granulopoietic precursors in a patient with myelodysplastic syndrome. A previously reported case characterised by erythrophagocytic activity by *dysplastic myeloid elements* was in fact a refractory anaemia with excess of blasts in transformation (RAEB-t),[4] a condition which is now included among acute leukaemias.[5]

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Figure 1.

Figure 2.

Figure 3.

Figure 4.

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