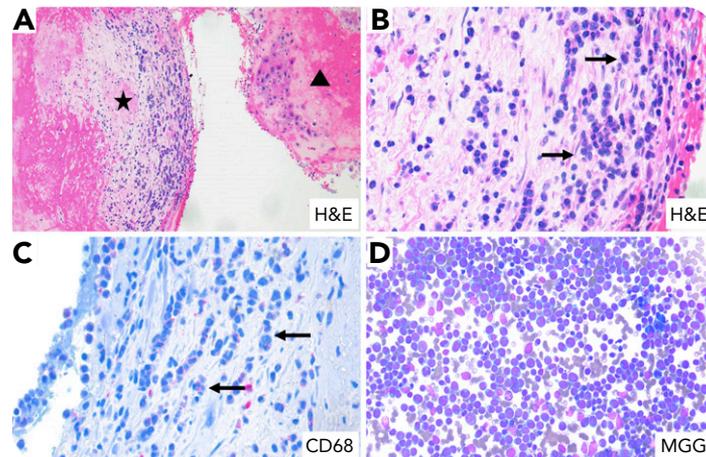


Placental myeloid sarcoma

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A 34-year-old pregnant woman presented with increasing leukocytosis (white blood cell count, $58\,000 \times 10^9/\mu\text{L}$) and severe anemia (hemoglobin, 8 g/dL) during the third trimester. Morphological and immunophenotypic analyses of bone marrow aspirate (panel D; May-Grunwald Giemsa stain, original magnification $\times 400$) were consistent with acute myeloid leukemia (AML; French-American-British M4). Molecular analysis did not show *NPM1* and *FLT3* mutations. Fluorescence in situ hybridization analysis identified t(11;19)(q23p13) mixed-lineage-leukemia–rearranged AML (2017 European LeukemiaNet adverse-risk category). Delivery was performed. A “7+3” regimen was then administered, but disease remission was not achieved. We carried out a pathologic examination of the placenta, to track this rare route of AML transmission. Unexpectedly, we found a focal nodule of CD34^{+/+}, MPO^{-/+}, CD68/PG-M1^{+/+} leukemic blasts (panel C, arrows; CD68 stain, original magnification

$\times 400$). The latter were scattered between maternal cotyledons (panel A, star) with fetal side sparing (panel A, arrowhead and panel B, arrows; hematoxylin and eosin stain, original magnification $\times 100$ [A], $\times 400$ [B]). This finding was consistent with placental myeloid sarcoma. Fortunately, the newborn displayed normal blood counts and was in good clinical condition; however, a close follow-up has been maintained, considering the risk of delayed development of AML.

Reported cases of placental involvement by cancer cells are mostly melanoma or leukemia/lymphoma. Even if it is extremely rare, transplacental transmission may occur, thus representing a life-threatening condition for the newborn. Pathologic examination of the placenta should be recommended for the diagnostic work-up of maternal AML, which has an estimated incidence of $\sim 1:100\,000$ pregnancies.