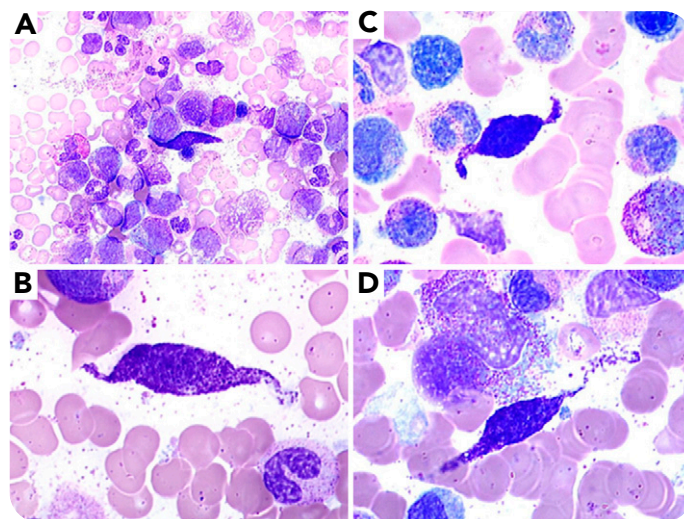




Abnormal mast cells in myeloid neoplasm with eosinophilia and PDGFRB rearrangement

Marie-Charlotte Bourrienne, Hôpital Bichat-Claude Bernard; and Jérôme Debus, Hôpital Louis-Mourier



A 52-year-old man presented with persistent leukocytosis after cannabis and tobacco withdrawal. Blood count showed the following: hemoglobin, 130 g/L; leukocytes, $68 \times 10^9/L$; platelets, $138 \times 10^9/L$; neutrophils, $45 \times 10^9/L$; eosinophils, $1.4 \times 10^9/L$; and monocytes, $5.5 \times 10^9/L$. Neutrophils precursors accounted for 17% of leukocytes. The peripheral blood smear showed rare blast cells ($<1\%$). Bone marrow smears revealed increased cellularity with excess of eosinophilic precursors (6%) and no excess of blast or dysgranulopoiesis (panel A; May-Grünwald-Giemsa stain, original magnification $\times 50$). Interestingly, an infiltration by abnormal spindle-shaped mast cells was found (0.5%) (panels B-D; May-Grünwald-Giemsa stain, original magnification $\times 100$). Conventional cytogenetic showed a rare $t(5;12)(q33;p13)$

resulting in the *ETV6-PDGFRB* fusion gene confirmed by fluorescence in situ hybridization. The patient was diagnosed with myeloid neoplasm with eosinophilia and *PDGFRB* rearrangement.

PDGFRB-rearranged neoplasms result in a spectrum of morphological presentations that include myeloproliferative and myelodysplastic/myeloproliferative neoplasms and rarely acute myeloid leukemia. *ETV6-PDGFRB* fusion gene may be associated to eosinophilia and monocytosis. Presence of abnormal mast cells has been already reported in *PDGFRA*-rearranged neoplasms, but it is uncommon in *PDGFRB* rearrangement. The patient was treated with imatinib and achieved a complete hematologic remission after 1 month of treatment.



For additional images, visit the ASH Image Bank, a reference and teaching tool that is continually updated with new atlas and case study images. For more information, visit <http://imagebank.hematology.org>.



blood®

2019 134: 718
doi:10.1182/blood.2019000588

Abnormal mast cells in myeloid neoplasm with eosinophilia and PDGFRB rearrangement

Marie-Charlotte Bourrienne and Jérôme Debus

Updated information and services can be found at:
<http://www.bloodjournal.org/content/134/8/718.full.html>

Articles on similar topics can be found in the following Blood collections

[BloodWork](#) (711 articles)
[Free Research Articles](#) (5488 articles)
[Myeloid Neoplasia](#) (1988 articles)

Information about reproducing this article in parts or in its entirety may be found online at:
http://www.bloodjournal.org/site/misc/rights.xhtml#repub_requests

Information about ordering reprints may be found online at:
<http://www.bloodjournal.org/site/misc/rights.xhtml#reprints>

Information about subscriptions and ASH membership may be found online at:
<http://www.bloodjournal.org/site/subscriptions/index.xhtml>