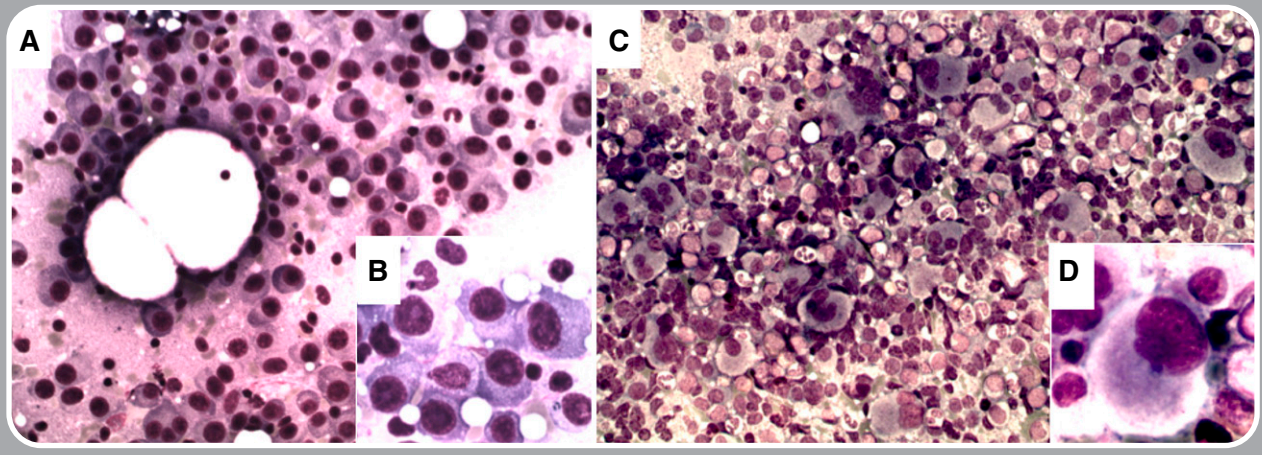
bloodwork
IMAGES IN HEMATOLOGY

Chronic myelogenous leukemia evolving after treatment of multiple myeloma



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A 51-year-old woman presented with bone pain, severe anemia, and thrombocytopenia (hemoglobin 4.02 g/dL; platelets [PLT] 121 $\times$ 10^9/L). Laboratory evaluation revealed monoclonal M-spike and elevated immunoglobulin G of 43.8 g/L. Giemsa-staining of the bone marrow (BM) aspirate showed subtotal infiltration with pleomorphic plasma cells (panels A-B). Clinical staging confirmed diagnosis of multiple myeloma (MM) with the presence of bone lesions and hypercalcemia. Following 4 cycles of bortezomib/dexamethasone, cytopenias resolved and clinical symptoms improved steadily. Of note, the PLT count increased to 1095 $\times$ 10^9/L, which was initially classified as "reactive thrombocytosis" but persisted for several weeks. Restaging of MM showed a reduction of plasma cell infiltrates below 10% of nucleated BM cells. However, the aspirate also revealed hypercellularity (panel C), with thrombopoiesis and granulopoiesis being most pronounced. Remarkably, megakaryocytes appeared predominantly small and hypolobulated (panel D). Molecular studies identified high BCR-ABL transcript levels. Following imatinib therapy, hematologic remission of chronic myeloid leukemia (CML) was achieved within 3 months with MM remaining in stable (partial) remission.

Fewer than 15 cases have been reported in the literature on the simultaneous occurrence of CML and MM, including MM arising during CML therapy. Here, BCR-ABL transcripts retrospectively increased during therapy of MM, which indicates the presence of 2 distinct clones giving rise to CML and myeloma.

DOI 10.1182/blood-2016-03-706945