A 60-year-old man presented with an IgGκ monoclonal paraprotein (50 g/L) and pancytopenia (hemoglobin 77 g/L, white blood count $1.1 \times 10^9/L$, platelets $75 \times 10^9/L$). The bone marrow was hypocellular, lacking in normal hematopoiesis, but contained plasma cells. A diagnosis of multiple myeloma was made and the patient was treated with vincristine, doxorubicin, and dexamethasone, followed by an autologous stem cell transplant. The paraprotein disappeared after treatment. Three years later, the patient became pancytopenic once again. Bone marrow aspirate showed hypocellularity with 95% of the cells appearing with variable size, with round, often eccentric nuclei, chromatin of variable density, abundant basophilic cytoplasm, and occasional fine vacuoles (see figures). The morphology was compatible with early plasma cells and/or erythroid precursors. The continued absence of the paraprotein suggested remission of myeloma or nonsecretory plasma cells. Flow cytometric immunophenotyping showed low expression of CD45 and CD36, glycophorin positivity, and CD138 negativity that suggested erythroid lineage and a diagnosis of pure erythroid leukemia. Multiple karyotypic abnormalities were present. The patient rapidly deteriorated and died shortly after.

Cases of multiple myeloma can evolve into leukemia. In most of these instances, acute nonlymphocytic leukemia or myelodysplasia occurs. Pure erythroid leukemia is an uncommon disease and its evolution from multiple myeloma is distinctly unusual. In this case, the morphologic similarity of plasma/erythroid cells was elucidated by immunophenotyping.
Erythroid leukemia evolving from multiple myeloma

Chantal Brouzes and Vahid Asnafi

Updated information and services can be found at:
http://www.bloodjournal.org/content/119/11/2441.full.html

Articles on similar topics can be found in the following Blood collections
- BloodWork (545 articles)
- Multiple Myeloma (369 articles)
- Myeloid Neoplasia (1704 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