Images of Hematology

Blood Research Educational Material

BLOOD RESEARCH
Volume 53 · Number 4 · December 2018
https://doi.org/10.5045/br.2018.53.4.268

Methotrexate-induced myelodysplasia mimicking myelodysplastic syndrome

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Received on February 2, 2018; Accepted on May 10, 2018
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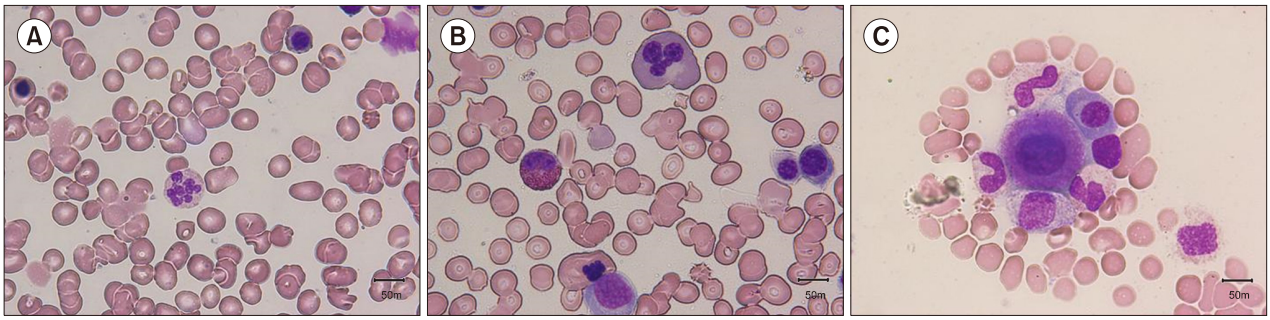

An 81-year-old man with rheumatoid arthritis, who had been receiving methotrexate (MTX) (4 mg/wk) and prednisolone (5 mg/day) for five years, was diagnosed with pancytopenia during a routine examination. His white blood cell count, hemoglobin level, and platelet count were 3,630/μL, 7.9 g/dL, and 59.0×10^3/μL, respectively. Bone marrow aspiration demonstrated normocellular bone marrow. The aspiration smear showed a neutrophil with hypersegmentation **(A)**, erythroblasts with abnormal nuclei **(B)**, and a micromegakaryocyte **(C)** (×1,000, Wright-Giemsa stain). No chromosomal aberrations were observed. Based on the myelodysplastic morphology of bone marrow cells, he was initially diagnosed with MTX-related myelodysplastic syndrome (MDS). MTX administration was discontinued, and concentrated red blood cells were transfused. As a result, his pancytopenia alleviated over a 2-month period. MTX is known to suppress DNA synthesis by inhibiting dihydrofolate reductase; its chromosome-breaking effect damages both bone marrow and inflammatory cells. Therefore, it appeared that MTX cessation alleviated the patient's pancytopenia. Subsequently, he was diagnosed with MTX-induced myelodysplasia. Although bone marrow aspiration was not performed again, this myelodysplasia was thought to be transient. Thus, clinicians should consider MTX-induced myelodysplasia mimicking MDS because it can be safely treated with drug withdrawal.