

Hypersegmentation of Granulocytes and Monocytes in a Patient with Primary Myelofibrosis Treated with Hydroxycarbamide

Hidroksikarbamid ile Tedavi Edilen Primer Miyelofibrozisli bir Hastada Granülositler ve Monositlerin Hiperpigmentasyonu

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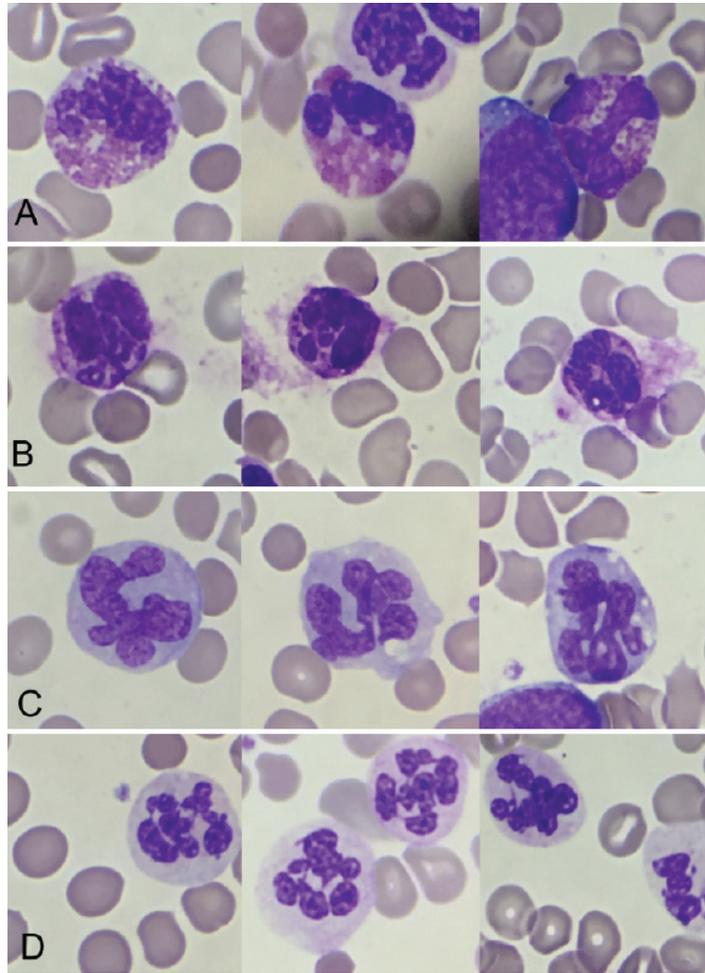


Figure 1. Hypersegmentation of white blood cells in peripheral blood of patient treated with hydroxycarbamide: (A) eosinophils, (B) basophils, (C) monocytes, and (D) neutrophils.



A 62-year-old man with a history of primary myelofibrosis was admitted to the emergency room due to abdominal pain. He remains under maintenance therapy with hydroxycarbamide. Complete blood count showed the following: white blood cell (WBC) count, $169.73 \times 10^9/L$, including 65.8% neutrophils and 24.4% immature granulocytes; hemoglobin, 113 g/L; mean corpuscular volume, 115.20 fL; and platelet count, $119 \times 10^9/L$. A peripheral blood film showed 10% blasts, macrocytosis, and nuclear hypersegmentation of neutrophils, basophils, and eosinophils with hypersegmented-like monocytes (Figure 1). The complete hemogram was as follows: red blood cell count, $3.02 \times 10^{12}/L$; hematocrit, 34.8%; red blood cell distribution width, 14.9%; mean corpuscular hemoglobin, 37.4 pg; and mean corpuscular hemoglobin concentration, 32.5 g/dL.

Ineffective treatment with hydroxyurea (sustained hyperleukocytosis and splenomegaly) was replaced by cytarabine, 6-mercaptopurine, and interferon alpha, obtaining improvement of leukocytosis (WBC count: $21.63 \times 10^9/L$).

Hydroxycarbamide (hydroxyurea, HU) decreases the production of deoxyribonucleotides via inhibition of ribonucleoside reductase. Cytoreductive treatment with HU often results in

megaloblastic anemia and hypersegmentation of neutrophils. However, impaired segmentation of other granulocytes' nuclei and "polymorphonuclear" monocytes remain unusual findings. While the first report of hypersegmentation of basophils and eosinophils after treatment with HU was presented by Xu [1], our finding of "hypersegmented" monocytes is the first such report worldwide.

Keywords: Granulocytes, Hypersegmentation, Hydroxycarbamide, Monocytes, Primary myelofibrosis

Anahtar Sözcükler: Granülositler, Hiperpigmentasyon, Hidroksikarbamid, Monositler, Primer Myelofibrozis

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Reference

1. Xu X. Nuclear hypersegmentation of neutrophils, eosinophils, and basophils due to hydroxycarbamide (hydroxyurea). *Blood* 2014;124:1392.