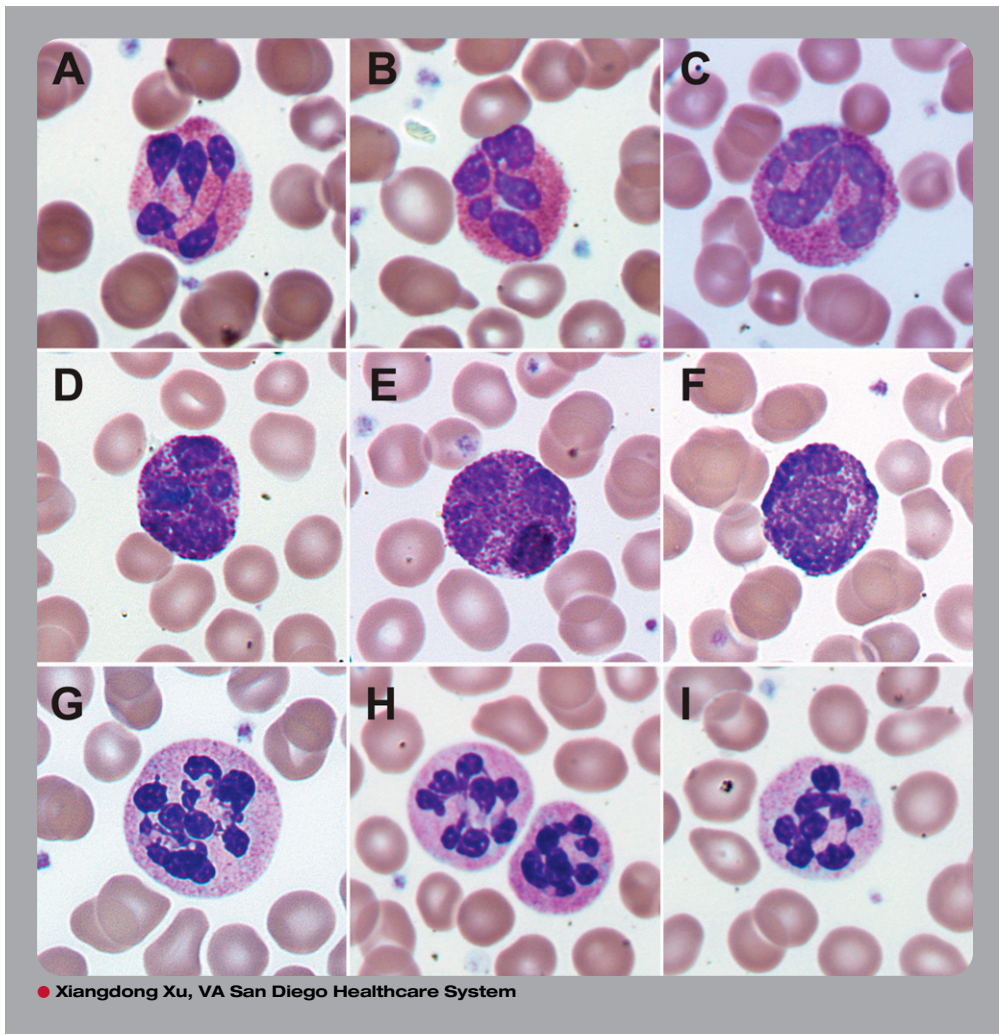


## Nuclear hypersegmentation of neutrophils, eosinophils, and basophils due to hydroxycarbamide (hydroxyurea)



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The patient was a 72-year-old man who had a diagnosis of polycythemia vera (PV) in 2010. A *JAK2* V617F mutation was positive. Hydroxycarbamide (hydroxyurea [HU]) was started at 500 mg and gradually increased to 1250 mg daily. His recent complete blood count showed the following: white blood cell (WBC) count,  $11.5 \times 10^9/L$ ; red blood cell count,  $3.55 \times 10^{12}/L$ ; hemoglobin, 13 g/dL; hematocrit, 37.8%; mean corpuscular volume, 106.5 fL; platelets,  $423 \times 10^9/L$ . A review of the peripheral blood smear identified 5% circulating blasts (not shown), macrocytosis, and marked megaloblastic changes in WBCs. Interestingly, nuclear hypersegmentation was identified in eosinophils (panels A-C), basophils (panels D-F), and neutrophils (panels G-I).

HU inhibits DNA synthesis by reducing the enzymatic activity of ribonucleoside reductase and is the mainstream cytoreductive agent for PV. Even though hypersegmented neutrophils are often observed with HU treatment, eosinophilic or basophilic hypersegmentation is an unusual observation.



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