

CLINICAL PICTURE

Howell-Jolly-like bodies in leucocytes: first description in leucocytes other than neutrophils

A 72-year-old man, known for a diffuse large B-Cell lymphoma, receiving Neupogen® (Amgen Manufacturing; Thousand Oaks; CA; USA; G-CSF), Ledertrexate® (Wyeth; Madison; NJ; USA; methotrexate) and Folvit® (Kela Pharma; Sint-Niklaas; Belgium; folic acid) treatment, presented to the emergency room after falling at home. He had received a cure of chemotherapeutic agents (rituximab–bendamustine–vincristin) 2 weeks before.

Review of the blood smear revealed that 25% of his neutrophils, 7% of monocytes and 1% of eosinophils presented small granules comparable to Howell-Jolly bodies of erythroblasts in abnormal erythropoiesis (1, 2).

A systematic review of blood smears of this patient revealed that such inclusions had been discretely present for 34 days and lasted for 18 more days. The percentage of cells presenting these inclusions varied from 1 to 23% of the total white blood cell count. Five samples revealed at least one lymphocyte presenting such inclusions. These inclusions were most present in the neutrophils. The day the patient deceased, 3% of the white blood cells showed Howell-Jolly-like bodies. Other signs of dysplasia were observed, including nuclear dysplasia of lymphocytes. The bone marrow aspirate presented similar inclusions.

Howell-Jolly-like bodies were described within the cytoplasm of neutrophils by Bain (3) in 1989, as detached pycnotic nuclear fragments. They have further

been described as a feature of dysplastic granulopoiesis linked to HIV-infection (4) or secondary to immunosuppressive (5–7), chemotherapeutic or antiviral drugs, at least two of these drugs being simultaneously administered in most cases.

We show here that these cytologic abnormalities affect not only the neutrophils, but also monocytes, lymphocytes and eosinophils. Howell-Jolly-like bodies may reflect transient dysplasia at least partially linked to the treatment received. It should be noted that G-CSF receptors are present on the membrane of all these cells (8). This cytokine may thus have an activity on leucocytes other than neutrophils.

These inclusions should be cytologically differentiated from other intracytoplasmic inclusions such as microbial phagocytosis, Döhle bodies (May-Hegglin disease), toxic granulations (infections) and large leucocyte granules found in inherited syndromes such as Chediak-Higashi syndrome.

References

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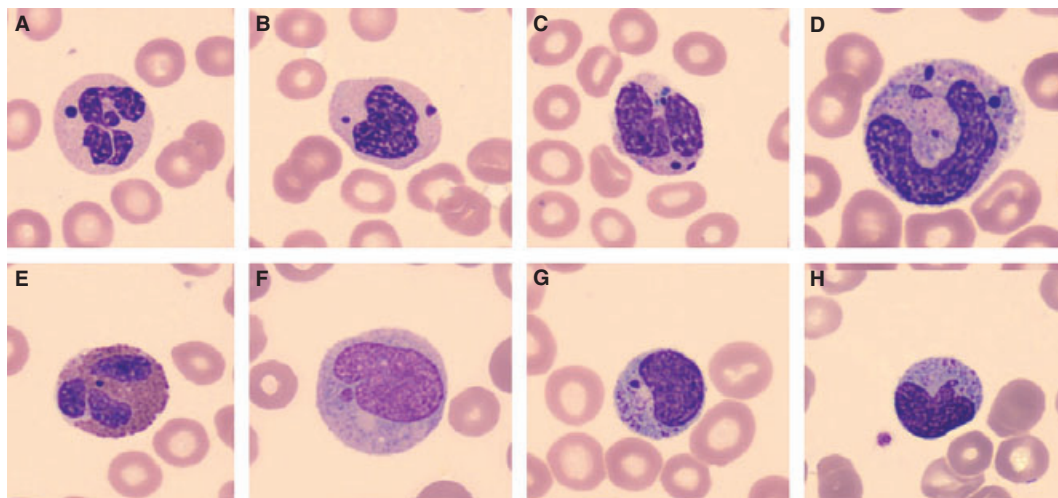


Figure 1 Howell-Jolly-like bodies in leucocytes. (A) Hypersegmented neutrophil; (B) Hyposegmented neutrophil; (C) Neutrophil presenting both Döhle bodies and Howell-Jolly-like bodies; (D) Metamyelocyte; (E) Eosinophil; (F) Monocyte; (G) Lymphocyte; (H) Lymphocyte presenting nuclear dysplasia.

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