

## CONTINUING MEDICAL EDUCATION ΣΥΝΕΧΙΖΟΜΕΝΗ ΙΑΤΡΙΚΗ ΕΚΠΑΙΔΕΥΣΗ

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### Hematology-Cell Morphology – Case 2

(A)

This is the earliest recognizable cell of the erythropoietic series. It represents 0.5–5% of bone marrow cells. It is often a round cell with a diameter of 20–25  $\mu\text{m}$ , with a high N/C ratio, with fine chromatin network, 1–2 small nucleoli, dark blue cytoplasm (many ribosomes) containing well visible perinuclear halo (Golgi apparatus and centrosome), and also small colorless areas (mitochondria) giving sometimes a honeycombed cytoplasmic picture (figures 1–8).

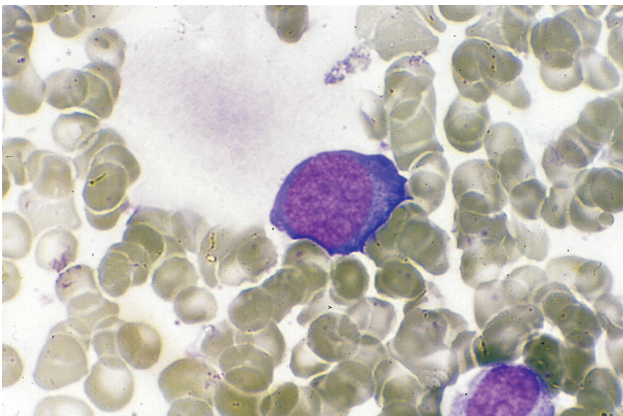


Figure 1

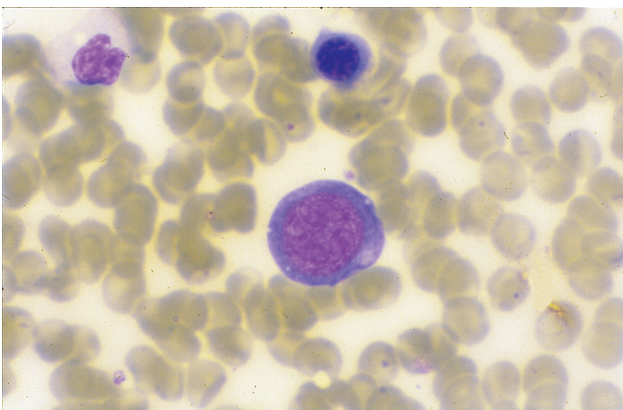


Figure 2

(B)

A smaller cell (basophilic erythroblast I is smaller than the proerythroblast and the basophilic erythroblast II is smaller than the basophilic erythroblast I). The nucleus becomes smaller and

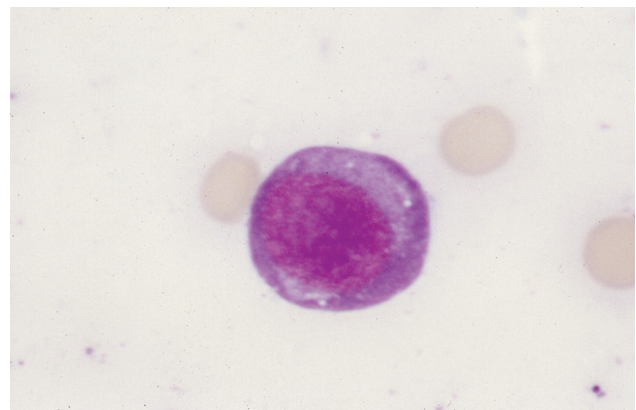


Figure 3

ARCHIVES OF HELLENIC MEDICINE 2019, 36(6):851–854  
ΑΡΧΕΙΑ ΕΛΛΗΝΙΚΗΣ ΙΑΤΡΙΚΗΣ 2019, 36(6):851–854

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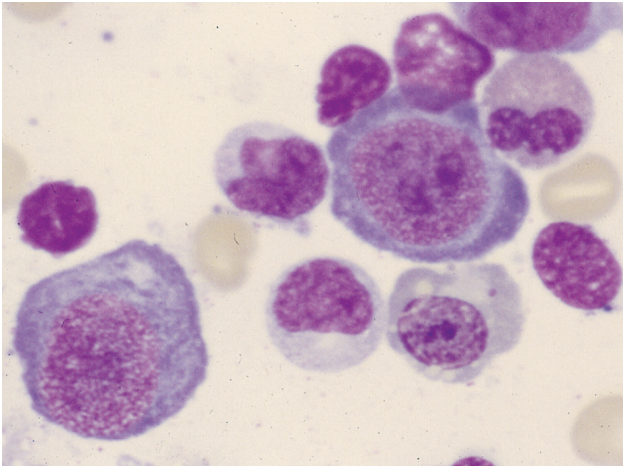


Figure 4

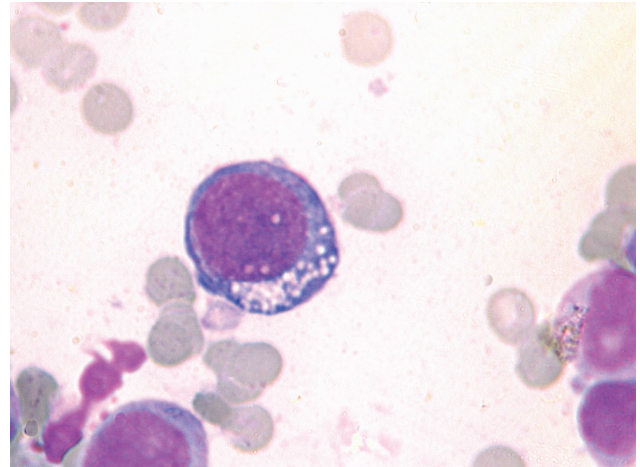


Figure 7

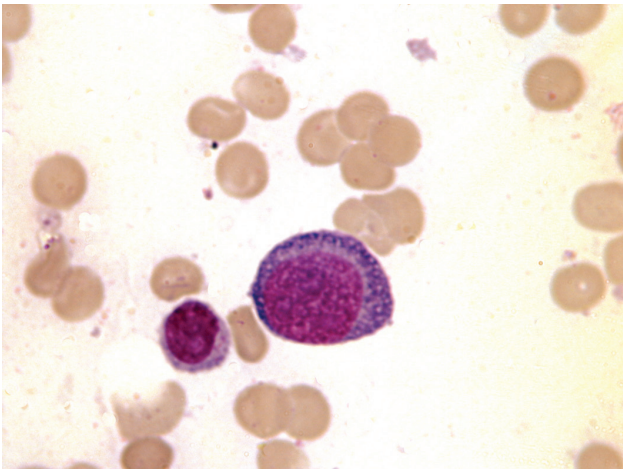


Figure 5

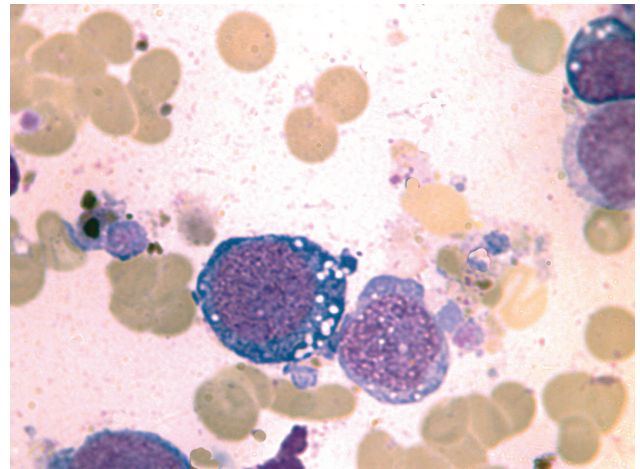


Figure 8

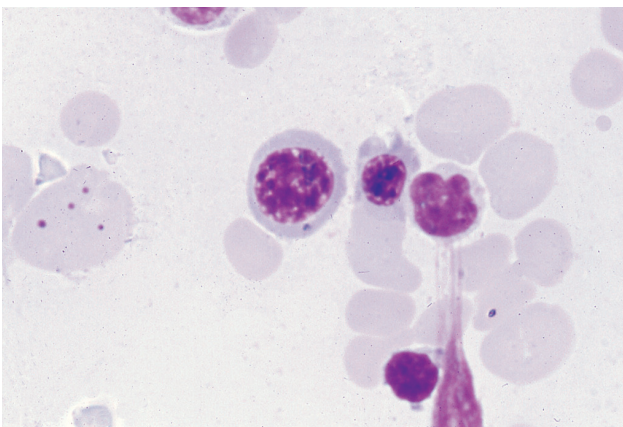


Figure 6

the chromatin pattern is clumped (usually 15–20 chromatin masses, in contrast with the chromatin clumps of plasmacytes which are less than 10). The chromatin pattern often has a wheel-like appearance. The nucleus has no nucleoli and the cytoplasm is light blue with few colorless areas. They consist of 0.25–4.8% of the myeloid cells. In the normal bone marrow mitotic features are often seen in this maturation stage usually with no uniform cytoplasmic basophilia and the presence of finer granulation resembling basophilic stippling. The same rarity may be seen in non-divided cells (figures 9–13). Sometimes the nuclear division is not accompanied by cytoplasmic division with a result of binuclear or multinuclear erythroblasts even in normal subjects (figures 14–16). Very rarely two erythroblasts stay connected after cellular division by fine cytoplasmic bridges



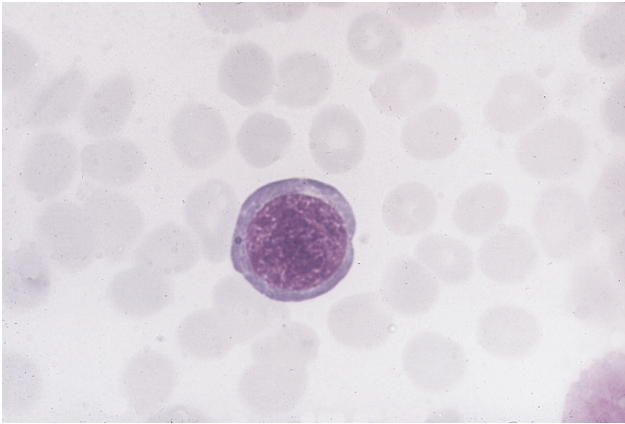


Figure 9

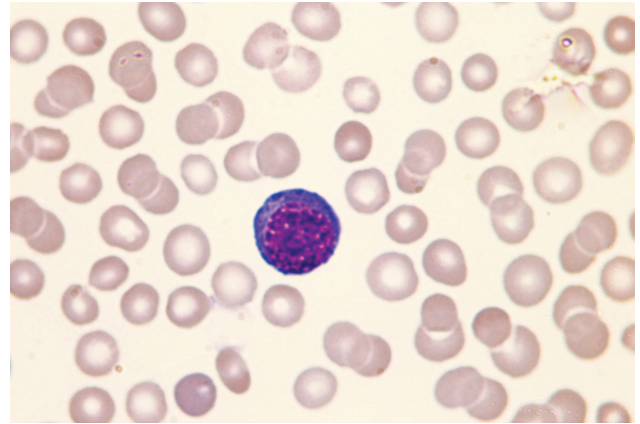


Figure 12

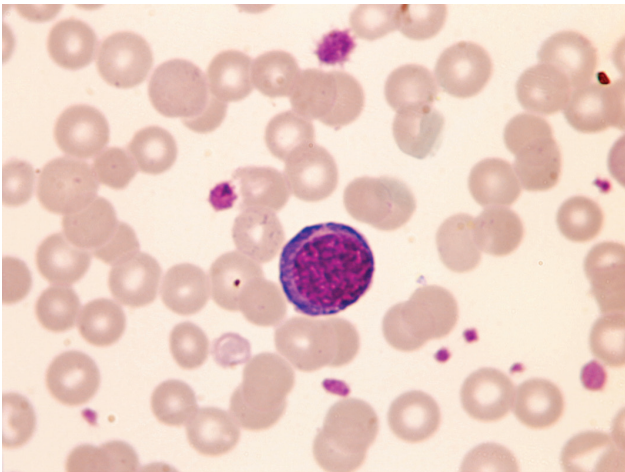


Figure 10

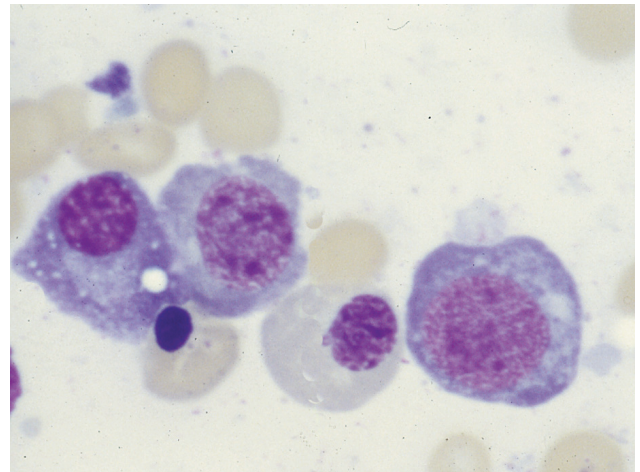


Figure 13

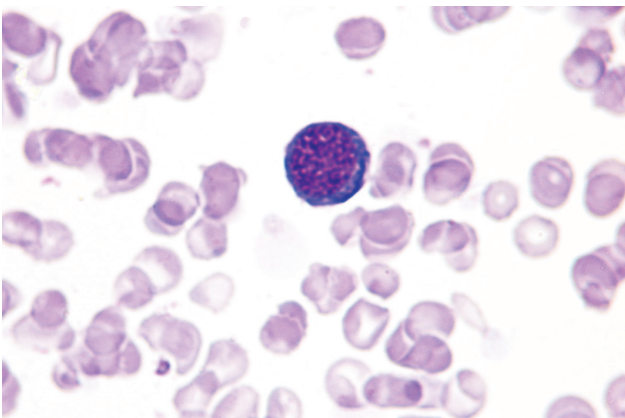


Figure 11

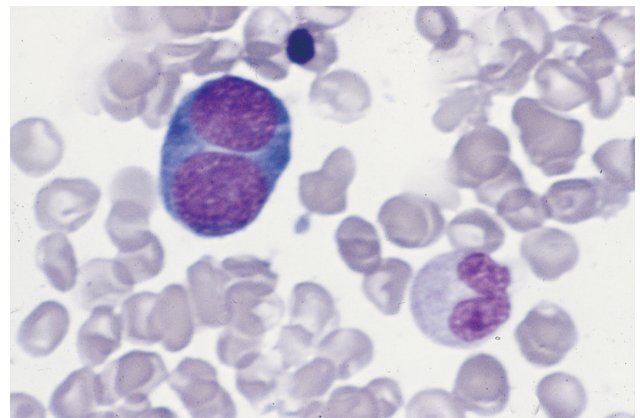


Figure 14

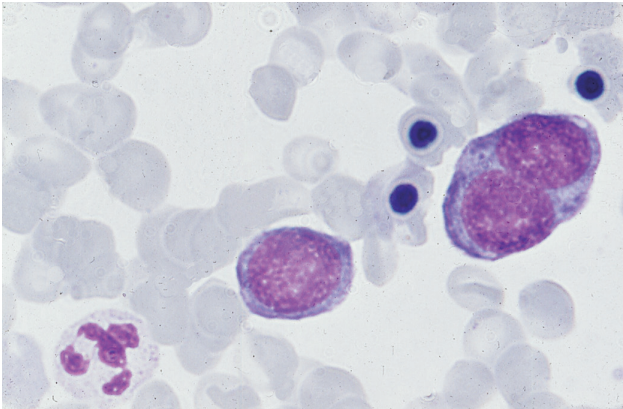


Figure 15

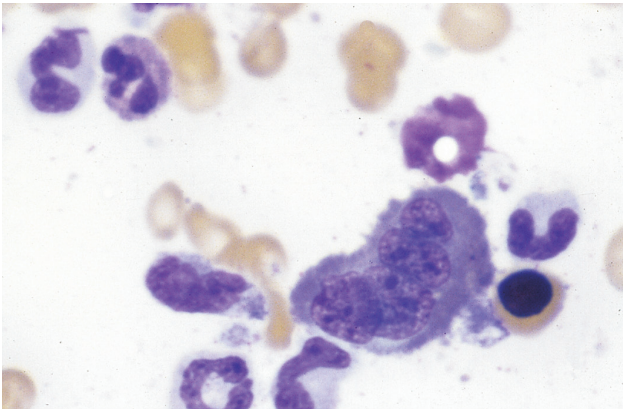


Figure 16

as a fine filament because of remnants of the nuclear spindle (Cabot ring).

**References**

- 1. Meletis J. *Atlas of hematology*. 3rd ed. Nireas Publ Inc, Athens, 2009:15–19

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**Cell type:** (A) Proerythroblast; (B) Basophilic erythroblast (I and II)

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