

CONTINUING MEDICAL EDUCATION ΣΥΝΕΧΙΖΟΜΕΝΗ ΙΑΤΡΙΚΗ ΕΚΠΑΙΔΕΥΣΗ

Hematology Quiz – Case 7

A 31 year old man presented at the emergency room with bleeding of the gums. Physical examination revealed gingival hemorrhages and dental abscesses. He was treated with antibiotics; this treatment resulted in improvement of the abscesses but the gingival hemorrhage persisted and worsened. Fifteen days later he had nasal hemorrhage. His medical history included post traumatic epileptic seizures for which he was taking diphenylhydantoin.

The physical examination revealed pallor, a cervical microlymphadenopathy mild hepatosplenomegaly, stomatitis and gingival pyperplasia (fig. 1) as well as generalized petechiae and echymoses. His temperature was 38.3 °C, the blood pressure was 165/70 mmHg and the pulse rate was 112/min.

The blood count revealed anemia (hemoglobin 9 g/dL), leucocytosis (WBC 12500/ μ L with 25% neutrophils and 35% blasts, figure 2) and thrombocytopenia (platelets <10.000/ μ L). The blasts were large with a sparse amount of basophilic cytoplasm, large bifoldded cerebriform nuclei and prominent large nucleoli.

Laboratory tests were as follows: BUN=0.38 mg/dL, total bilirubin=0.90 mg/dL, SGOT=27 IU/L, SGPT=35 IU/L, alkaline phosphatase=162 IU/L, γ -GT=16 IU/L, LDH=980 IU/L and total proteins 7.3 g/dL (a diffuse hypergammaglobulinemia was noted on electrophoresis).

Bone marrow aspiration revealed 80% infiltration by blasts (fig. 3) of the same appearance which were MPO (+/-), naphthol-ASD chloracetate esterase negative, strongly positive to α -naphthol acetate esterase and PAS positive. Gingival biopsy revealed infiltration by the same type of blasts.

Comment

In acute monoblastic leukemia blastic cells are of large size with a large folded or oval nucleus, fine chromatin appearance, multiple nucleoli and abundant light or deep basophilic cytoplasm with pseudopodia formation sometimes containing azurophilic granules, vacuoles and rarely Auer bodies. Sometimes monoblasts may present with phagocytosis of blood cell elements and phagocytosed cysts and rarely there is an hemophagocytosis picture in the bone marrow which must be differentiated from other malignant hemophagocytosis syndromes [absence of t(8;16) often associated with the M5a with concomitant hemophagocytosis]. In the peripheral blood the circulating



Figure 1

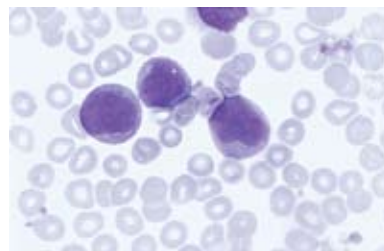


Figure 2

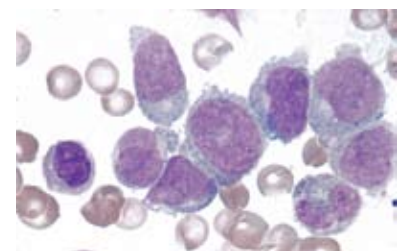


Figure 3

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ΑΡΧΕΙΑ ΕΛΛΗΝΙΚΗΣ ΙΑΤΡΙΚΗΣ 2008, 25(4):547

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abnormal cells are more mature than the bone marrow cells.

Non specific esterase (ANAE) staining: Heavy positive and sensible to NaF inhibition (in 10% of cases is negative). α -naphthyl butyrate esterase (ANBE) staining: Positive (10% of cases is negative). Peroxidase, specific esterase (NACE), acid phosphatase and PAS staining: Weakly positive or negative. PAS staining: Varying positivity, some blasts are negative and others present a diffuse pattern of staining with fine positive granulation, while the reaction is rarely coarse with diffuse or concourse positivity.

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Diagnosis: Acute monoblastic leukemia, M5a.