

## CONTINUING MEDICAL EDUCATION ΣΥΝΕΧΙΖΟΜΕΝΗ ΙΑΤΡΙΚΗ ΕΚΠΑΙΔΕΥΣΗ

### Hematology Quiz – Case 19

A 43-year-old woman presenting with confusion, anemia, lymphopenia, thrombocytopenia and cervical microlymphadenopathy was admitted to the Hospital after complaining for 20 days of fever, headache and rachialgia. The past medical history has included a chronic diarrhoea syndrome for the last 5 months, which was due to non-specific colitis.

Physical examination revealed pallor, generalized microlymphadenopathy, mild splenomegaly (2 cm below left costal margin), and confusion. The laboratory findings included normochromic/normocytic anemia (Hb 9.6 g/dL), mild leukocytosis ( $11 \times 10^9/L$ ) with severe lymphopenia ( $0.2 \times 10^9/L$ ), and thrombocytopenia ( $56 \times 10^9/L$ ). Peripheral blood evaluation showed the presence of a small proportion of blast cells (<1%). The investigation for rheumatoid disorders, thyroid, liver and renal function was normal. Chest X-rays were within normal limits. Abdomen CT scan confirmed mild splenomegaly but showed no lymphadenopathy. A bone marrow aspiration showed an infiltration by myeloblasts at a proportion of 45%. Conventional cytogenetic analysis revealed a 46, XY, del(16)(q22) karyotype. Immunophenotyping showed positivity of blastic cells for myeloperoxidase, CD13, CD15, CD33. Patient was positive for HIV antibodies. OKT4 lymphocytes were 6%.

A lumbar puncture was performed and cerebrospinal fluid (CSF) was found to have a cell count of 500/ $\mu L$  (figures 1–3), hypoglycorrhachia (18 mg/dL), and increased protein levels. CT and MRI scans of the brain showed multiple contrast-enhancing lesions in the basal ganglia and multiple lesions with ring-enhancement over the cerebellum, frontal and temporal lobes. During antifungal treatment left hemiparesis appeared. A new

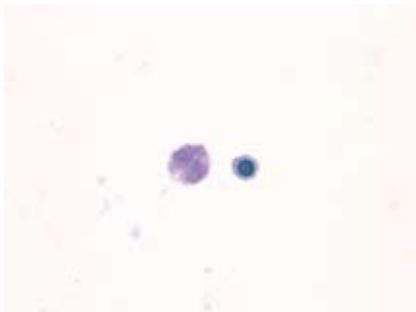


Figure 1



Figure 2

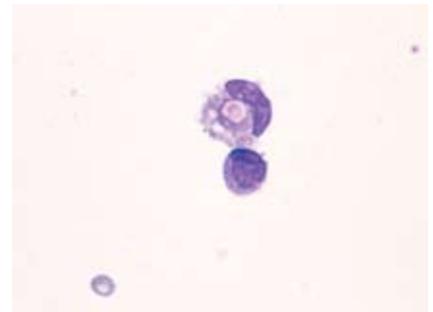


Figure 3

ARCHIVES OF HELLENIC MEDICINE 2010, 27(4):717–718  
ΑΡΧΕΙΑ ΕΛΛΗΝΙΚΗΣ ΙΑΤΡΙΚΗΣ 2010, 27(4):717–718

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brain CT showed a hypodense lesion in the posterior brachium of the left inner capsule; at its base the lesion showed a hypodense streak coherent with thromboembolic damage. The antimycotic treatment entirely cured the hemiparesis and normalized the CSF. However, patient died two months later during therapy for hematological malignancy.

#### Comment

*Opportunistic fungal infections are frequent complications in the immunocompromised patients such as in malignancies, after*

organ transplantation and in HIV-patients, especially in prolonged periods of neutropenia. Especially susceptible are the patients during treatment of acute leukemia, or after bone marrow transplantation. The most frequent systemic fungal infection pathogens are *Candida* and *Aspergillus* species, than *Cryptococcus* species and *Mucor*. Most cryptococcal infections are caused by *Cryptococcus neoformans*. Cryptococci have been reported to cause pulmonary disease, cryptococemia and meningitis. Most patients with cryptococcosis have several immunologic defects such as lymphopenia, T-cell dysfunction and other immunologic dysfunctions, like in patients with lymphoma or AIDS as a result of the underlined disease and previous therapies.

The symptoms of cryptococcosis may develop gradually resulting in the delay of diagnosis. Unexplained neurologic symptoms in these patients require laboratory examination for cryptococcosis, and differential diagnosis for bacterial meningitis, leptomeningeal disease and brain tumors.

Microscopic and chemical analyses of the CSF may reveal only slight abnormal values for cell counts, protein and LDH concentrations. It is necessary to perform cryptococcal antigen test, cryptococcal cultures in vitro in different temperatures, of identification of ribosomal gene fragments by sequence analysis for *Cryptococcus* species.

Early diagnosis, controlled underlying disease, as well as the

early treatment with antifungal drug regimens for cryptococcosis is very important for the patient's course.

## References

1. BAIN BJ. *Leukemia diagnosis*. 3rd ed. Blackwell Publ, Oxford, 2003:7–36
2. MELETIS J. *Atlas of Hematology*. 3rd ed. Nireas Publ Inc Athens, 2009:601–626
3. PERFECT JR, DISMUKES WE, DROMER F, GOLDMAN DL, GRAYBILL JR, HAMILL RJ ET AL. Clinical practice guidelines for the management of cryptococcal disease: 2010 update by the Infectious Disease Society of America. *Clin Infect Dis* 2010, 50:291–322
4. RIMEK D, HAASE G, LÜCK A, CASPER J, POBBIELSKI A. First report of a case of meningitis caused by *Cryptococcus adeliensis* in a patient with acute myeloid leukemia. *J Clin Microbiol* 2004, 42:481–483

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