

CASE IMAGE

Bone marrow aspiration in a patient with systemic microsporidium

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Abstract

A 34-year-old female presented with several weeks of fever, fatigue, weight loss, abdominal pain and hemoptysis. PE revealed moderate pallor, RUQ pain, mild dyspnea, conjunctival injection and hepatomegaly. The CBC showed anemia, mild leukocytosis, hypoalbuminemia, hypertransaminasemia, presence of nucleated red blood cells. Microsporidium was found in BMA.

KEYWORDS

BMA, hematological malignancies, HIV, microsporidium

A 34-year-old woman presented with several weeks of fever, fatigue, weight loss, abdominal pain, and hemoptysis. Physical examination revealed moderate pallor, pain on the right upper quadrant, mild dyspnea, conjunctival injection, and hepatomegaly. The complete blood count showed anemia, mild leukocytosis, hypoalbuminemia, hypertransaminasemia, presence of nucleated red blood cells in peripheral blood, elevated creatinine, and lactic dehydrogenase level of 12,643 IU/L (normal range: 105–333 IU/L). Serial radiographs of the thorax showed the appearance of bilateral parenchymal lesions. Abdominal ultrasound showed moderate hepatosplenomegaly. The presumptive diagnosis at admission was probable hematological malignancy associated with sepsis and multiorgan failure. A bone marrow aspirate was performed, which showed microsporidia within macrophages. HIV ELISA was reactive and confirmed by Western blot. Her HIV viral load was 1,382,000 copies/ml. A peripheral blood smear was performed in which the presence of microsporidia

was also observed (Figure 1A), as in the bone marrow (Figure 1B,C).

Microsporidia are spore-producing protozoa, which often cause illness in immunocompromised patients especially those infected by HIV and, less commonly, post-transplant patients. Because the infection is associated with severe immunodeficiency, microsporidia infections usually occur in patients with defined AIDS, being infrequent as an initial manifestation of HIV infection.¹ Clinical manifestations are often watery diarrhea and colicky abdominal pain, systemic involvement being uncommon in immunocompetent individuals. Other manifestations such as cholangitis or acalculous cholecystitis; bronchiolitis, pneumonitis, sinusitis, nephritis, cystitis, prostatitis, hepatitis, peritonitis, chronic keratoconjunctivitis, encephalitis, nodular cutaneous lesions, and myositis. Diagnosis is usually made by microscopically detecting microsporidial spores in infected secretions (mainly feces) or in tissue specimens.² However,

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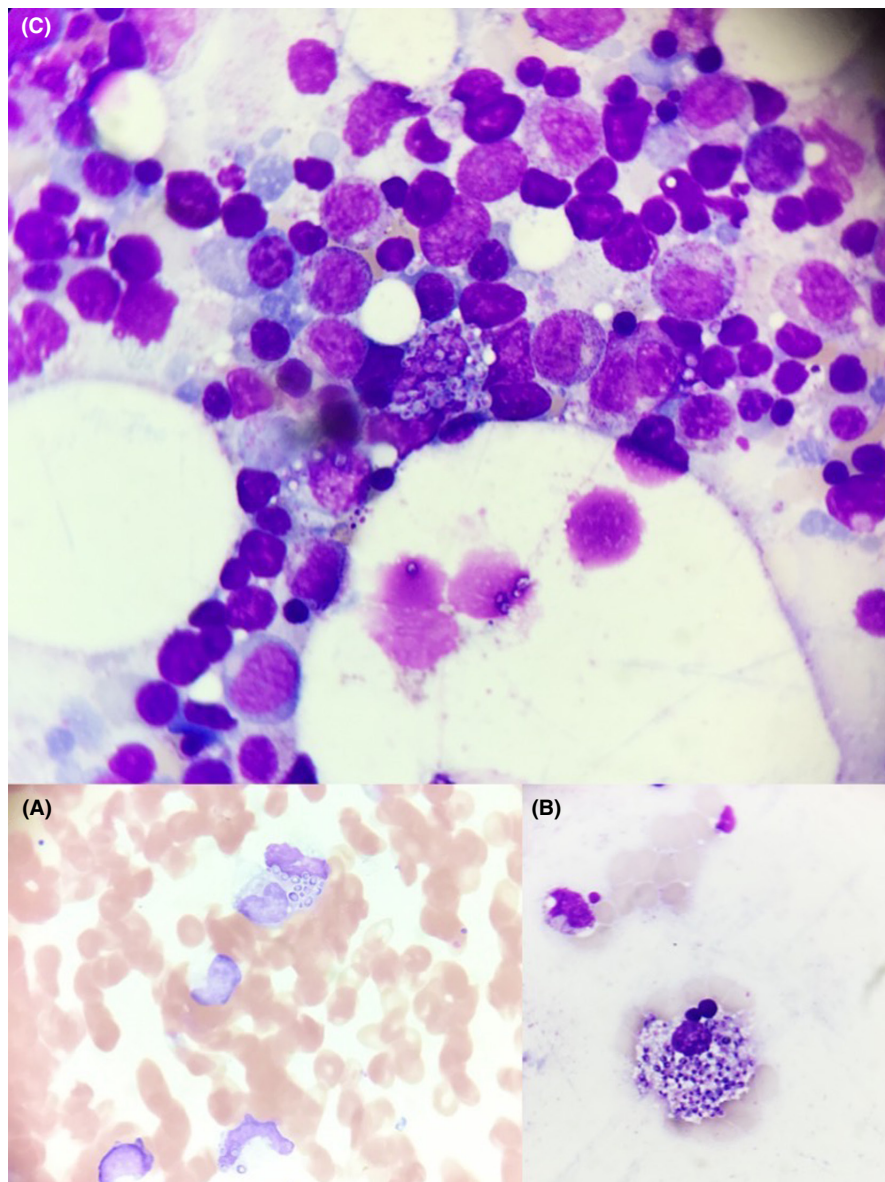


FIGURE 1 Peripheral blood smear in 100× high resolution (A), bone marrow smear in 100× high resolution (B) and 400× high resolution (C) showing the presence of microsporidium phagocytosed by macrophages. Right staining was used in all smears

in cases of multisystem involvement, these findings may be seen in the peripheral blood and bone marrow, the latter being extraordinarily uncommon and reported almost exclusively as a postmortem finding.³ It should be mentioned that the finding of microsporidium in bone marrow involves an infection of at least 3–4 months of evolution.³ This condition should be considered in the differential diagnosis of sepsis and multiple organ failure in immunosuppressed patients.

The authors, of this case report, confirmed that patient consent has been signed and collected in accordance with the journal's patient consent policy.

AUTHOR CONTRIBUTIONS

Ximena E. Gómez (1); Jorge J. Castillo (2); Marco A. Gómez (3). 1. Been involved in drafting the manuscript or revising it critically for important intellectual content and interpretation of data. 2. Been involved in drafting the

manuscript or revising it critically for important intellectual content; and given final approval of the version to be published. 3. Have made substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data.

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CONFLICT OF INTEREST

The authors, of this case report, confirmed that there is no conflicts of interest.

DATA AVAILABILITY STATEMENT

None.

ETHICAL APPROVAL

None.

CONSENT

The authors, of this case report, confirmed that patient consent has been signed and collected in accordance with the journal's patient consent policy.

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