



Images in Clinical Hematology

Systemic fungal infection by *Histoplasma capsulatum*: intracellular fungus in peripheral leukocytes



Valéria Salgado, Mayara Caldas Ramos, Ricardo Ambrósio Fock*

Hospital Universitário, Universidade de São Paulo (USP), São Paulo, Brazil

ARTICLE INFO

Article history:

Received 18 September 2015

Accepted 15 December 2015

Available online 3 February 2016

A middle-aged woman was admitted to the Teaching Hospital of the Universidade de São Paulo, Brazil with pneumonia symptoms. She had fever, cough and weakness associated with epigastric pain. An abdominal computed tomography scan showed extensive adenopathy with an enlarged spleen.

Serology for HIV was positive and yeast forms were observed in the peripheral blood smear (Figures 1 and 2).

Diagnosis of histoplasmosis is made by the detection of *Histoplasma capsulatum* in sputum, blood or liquor but it is common to observe negative results due to technical

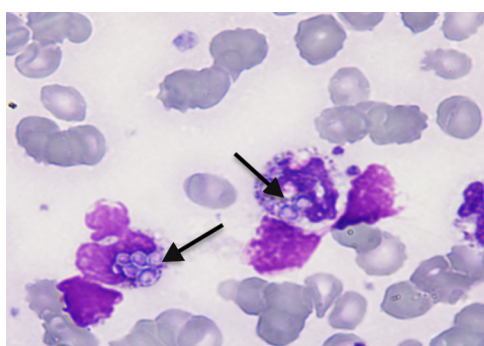


Figure 1 – Arrows show phagocytes containing one or more intracellular *Histoplasma capsulatum* (magnification: 1000×; May-Grünwald stain).

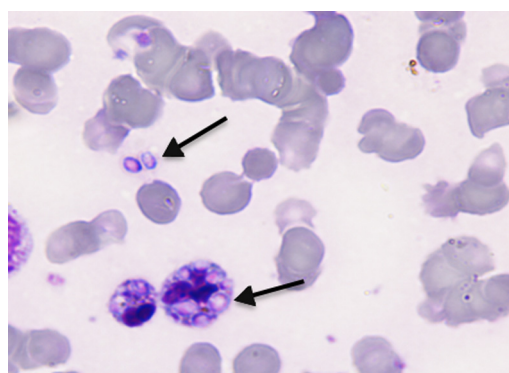


Figure 2 – Arrows show intracellular and extracellular *Histoplasma capsulatum* (magnification: 1000×; May-Grünwald stain).

* Corresponding author at: Divisão de Laboratório de Análises Clínicas, Hospital Universitário, Universidade de São Paulo (USP), Av. Lineu Prestes, 2565, 05508-900 São Paulo, SP, Brazil.

E-mail address: hemato@usp.br (R.A. Fock).

<http://dx.doi.org/10.1016/j.bjhh.2015.12.002>

1516-8484/© 2016 Associação Brasileira de Hematologia, Hemoterapia e Terapia Celular. Published by Elsevier Editora Ltda. All rights reserved.

constraints wherein a reduced number of fungal forms are found in samples.¹ Imaging, diagnostic scanning tests and biopsy of target organs are important to differentiate from tuberculosis, sarcoidosis or metastatic carcinoma and lymphoma and usually the culture of biological samples and serological assays are performed to confirm the diagnosis.^{1,2} However, a blood smear is important to establish the diagnosis of disseminated histoplasmosis and, after *in vitro* contamination is excluded, the presence of both free and intracellular *H. capsulatum* should be reported.

Conflicts of interest

The authors declare no conflicts of interest.

REFERENCES

1. de Oliveira RB, Atobe JH, de Souza SA, Castro Lima Santos DW. Epidemiology of invasive fungal infections in patients with acquired immunodeficiency syndrome at a reference hospital for infectious diseases in Brazil. *Mycopathologia*. 2014;178(1-2):71-8.
2. Carreto-Binaghi LE, Damasceno LS, Pitangui Nde S, Fusco-Almeida AM, Mendes-Giannini MJ, Zancopé-Oliveira RM, et al. Could *Histoplasma capsulatum* be related to healthcare-associated infections? *Biomed Res Int*. 2015:982429.