An Unusual Cause of Fever, Generalized Lymphadenopathy and Eosinophilia in a HCV-Positive 6-Year-Old Boy

Rajesh Kumar¹ · Prashant Sharma² · Pranab Dey³ · Babu Ram Thapa⁴

Received: 9 July 2016 / Accepted: 28 July 2016 / Published online: 3 August 2016
© Indian Society of Haematology & Transfusion Medicine 2016

Abstract A 6-year-old boy presented with a 3-month history of high-grade fever and night-sweats but without chills/rigors. On examination, he had moderate hepatosplenomegaly with multiple enlarged cervical and axillary lymph nodes. His hemogram revealed anemia and marked eosinophilia. Initial investigations were negative, except anti-HCV IgG antibodies, that were positive. Bone marrow aspirate showed a single histiocyte containing suspicious intracellular yeast-like forms. Cervical lymph node aspiration revealed a heavy load of intra- and extracellular *Histoplasma* spp. Disseminated histoplasmosis remains an unusual cause of peripheral eosinophilia and diagnosis can often be rendered fairly easily by cytomorphological evaluation. The case illustrates how Indian pathologists must maintain a high index of suspicion for unexpected infectious disorders in cases with eosinophilia.

Keywords Bone marrow examination · Disseminated histoplasmosis · Eosinophilia · Fungal infection · Hepatitis C · Lymphadenopathy

A 6-year-old boy presented with a since 3-month history of high-grade fever and night-sweats without chills/rigor. On examination, he had moderate hepatosplenomegaly with multiple enlarged cervical and axillary lymph nodes. On investigation, hemoglobin was 63 gm/L, platelets $381 \times 10^9/L$ and total leukocyte count $40.5 \times 10^9/L$ with 53 % morphologically unremarkable eosinophils (Fig. 1). Routine biochemical tests including electrolytes, triglycerides, liver function tests; stool examination for ova/cysts; Galactomannan assay; serology for HIV, Leishmania, Toxoplasma and hepatitis A, B and E; anti-nuclear, anti-rheumatoid factor, anti-smooth muscle, anti-mitochondrial and anti-tissue transglutaminase IgA autoantibodies; malarial antigen and Widal test were all normal or negative. Anti-HCV IgG antibodies by ELISA were positive. Chest x-ray was normal. Ultrasound abdomen confirmed hepatosplenomegaly and was suggestive of enlarged retroperitoneal lymph nodes.

Bone marrow examination revealed normocellular marrow with granulocytic hyperplasia including 15 % eosinophils and eosinophilic precursors. There was no increase in blasts. A single histiocyte containing suspicious intracellular yeast forms was present (Fig. 2). No other similar structures were found despite exhaustive screening of more aspirate smears, examining multiple-level sections in the bone marrow biopsy and multiple special stains for microorganisms. The finding was conveyed verbally to the clinical unit with the suggestion to expedite lymph node sampling. Cervical lymph node aspirate smears showed markedly increased macrophages, epithelioid cell

✉ Prashant Sharma
sharma.prashant@pgimer.edu.in

¹ Pathology Group of Departments, Levels 4-5, Research Block A, Postgraduate Institute of Medical Education and Research, Sector 12, Chandigarh 160012, India

² Department of Hematology, Level 5, Research Block A, Postgraduate Institute of Medical Education and Research, Sector 12, Chandigarh 160012, India

³ Department of Cytology and Gynecological Pathology, Level 4, Research Block A, Postgraduate Institute of Medical Education and Research, Sector 12, Chandigarh 160012, India

⁴ Department of Gastroenterology (Paediatrics), Postgraduate Institute of Medical Education and Research, Sector 12, Chandigarh 160012, India

Fig. 1 Peripheral blood smear showed an absolute eosinophil count of $21.5 \times 10^9/L$. No abnormal cells, dysgranulopoiesis or microfilaria were seen. (May-Grünwald Giemsa $\times 1000$)

Fig. 2 The solitary bone marrow histiocyte with suspicious intracellular yeast forms (May-Grünwald Giemsa $\times 1000$)

collections and numerous intra- and extra-cellular 2–5 μm capsulated yeasts, many with peripheral halos and a few budding forms, morphologically consistent with *Histoplasma* spp. (Figs. 3, 4).

Disseminated histoplasmosis remains an unusual cause of peripheral blood eosinophilia [1]. Diagnosis can often be rendered fairly easily, rapidly and minimally invasively by cytomorphological evaluation of lymph nodes or on bone marrow examination [2]. The case illustrates how Indian

Fig. 3 The cervical lymph node aspirate with numerous histiocytes engulfing poorly-staining classical yeast forms of *Histoplasma* spp. (May-Grünwald Giemsa $\times 1000$)

Fig. 4 The yeast forms of *Histoplasma* spp. as essentially negative images on H&E staining (Haematoxylin and Eosin $\times 1000$)

pathologists must maintain a high index of suspicion for unexpected infectious disorders in cases with eosinophilia.

Compliance with Ethical Standards

Conflict of interest None of the authors have any conflicts of interest to declare for this manuscript.

Ethical Standards All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent We request waiver of the requirement of informed consent as the anonymized patient hails from a far-off area, and is unavailable. No experimental procedures were performed. Care has been taken to remove all identifying data from this report, and patient confidentiality is not breached in the title, text or photographs.

References

1. Bullock WE, Artz RP, Bhathena D, Tung KS (1979) Histoplasmosis: association with circulating immune complexes, eosinophilia, and mesangiopathic glomerulonephritis. *Arch Intern Med* 139:700–702
2. Agnihotri M, Naik L, Fernandes G, Kothari K, Ojha S (2014) Diagnosis of histoplasmosis on lymph node fine needle aspiration cytology utilizing Giemsa stain: a report of three cases. *Anal Quant Cytopathol Histpathol* 36:299–302