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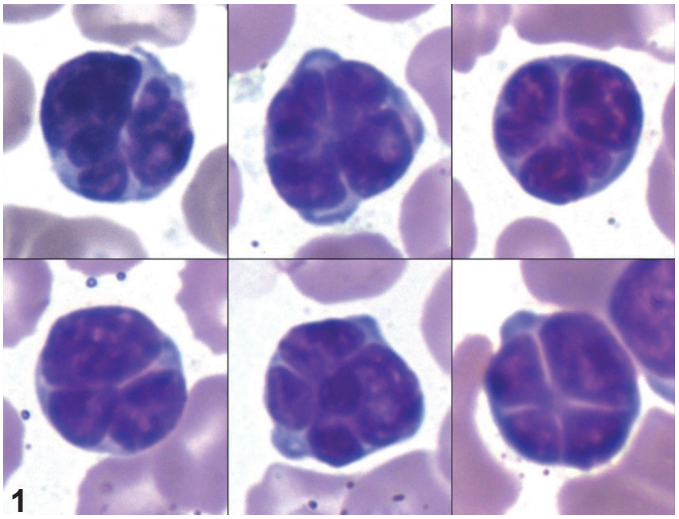
Images in Infectious Diseases

Central nervous system infiltration by HTLV-1-associated T-cell leukemia/lymphoma in an AIDS patient

***Luzia Beatriz Ribeiro Zago*[1], *Vanessa Afonso da Silva*[1],[2], *Fernanda Bernadelli De Vito*[2] *and Leonardo Rodrigues de Oliveira*[1]**

[1]. Universidade Federal do Triângulo Mineiro, Hospital de Clínicas, Serviço de Hematologia e Hemoterapia, Uberaba, MG, Brasil.
[2]. Universidade Federal do Triângulo Mineiro, Hospital de Clínicas, Laboratório de Citometria de Fluxo, Uberaba, MG, Brasil.



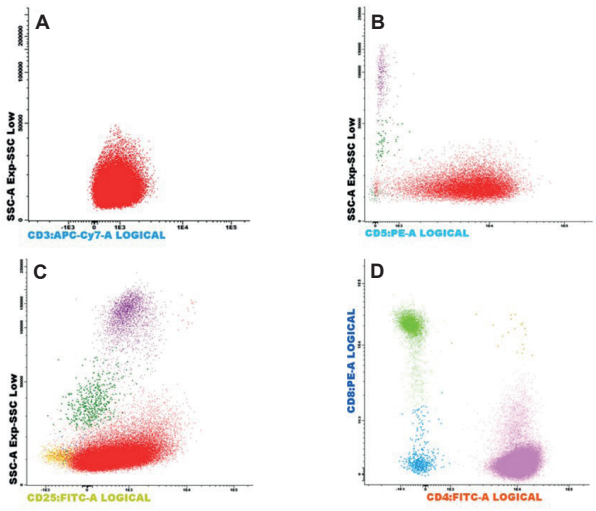


FIGURE 1: Atypical lymphocytes in peripheral blood showing classical "flower cell" morphology. Leishman stain, magnification × 1000.
FIGURE 2: Blood lymphocyte immunophenotyping by flow cytometry. Lymphocytes (marked by red color in dot-plots) were CD3+ **(A)**, CD5+ **(B)**, and CD25+ (C). D: CD3+ T-lymphocytes with CD4+/CD8- phenotype (marked by pink color in dot-plots) in 97.3% of cells analyzed.

A 59-year-old woman was admitted for progressive ataxia and decreased consciousness, which had commenced two months previously. The patient had *human immunodeficiency virus (*HIV)/*human* T-cell lymphotropic virus-1 (HTLV-1) co-infection for 10 years with regular use of antiretroviral therapy, resulting in satisfactory virological control (undetectable HIV load, CD4+ T lymphocyte count: 354 cells/mm³). Laboratory data revealed leukocytosis (142.3 × 10^9/L - 78% lymphocytes, some with "flower cell" morphology [**Figure 1**]), hypercalcemia, elevated serum lactate dehydrogenase, and acute renal dysfunction without anemia or thrombocytopenia. Cranial computed tomography scans revealed calcification in basal ganglia. Cerebral spinal fluid (CSF) analysis revealed 30 cells/mm³ (86% atypical lymphocytes). Cytomegalovirus and *Toxoplasma gondii* IgM and IgG antibody screening were negative. No infectious agents were identified by CSF direct analysis and culture.

Blood and CSF lymphocyte immunophenotyping by flow cytometry revealed positivity for CD3, CD4, CD5, CD25, and CD38 markers, and negativity for CD8 (**Figure 2**)[1]. A diagnosis of central nervous system infiltration (lymphomatous meningitis) by HTLV-1-associated adult T-cell leukemia/lymphoma (acute subtype) was considered[2]. No test for detecting clonal integration of the HTLV-1 pro-virus within tumor cells was conducted. Systemic and intrathecal chemotherapy were administrated. The patient died due to *Pseudomonas aeruginosa* infection 25 days later.

Corresponding author: Leonardo Rodrigues de Oliveira.
e-mail: leonardorodoli@hotmail.com
https://orcid.org/0000-0003-1882-1694
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The spectrum of complications associated with HTLV-1 infection is broad, with predominant hematological and neurological manifestations[3]. The detection of lymphocytes with "flower cell" morphology may be useful for investigation of HTLV-1 infection. Guidelines for standardizing follow-up of patients with HTLV-1 infection should be considered for early detection of potential infection-related complications.

AUTHORS' CONTRIBUTIONS

LBRZ: Acquisition, analysis, and interpretation of data, final approval of the version to be submitted; **VAS**: acquisition, analysis, and interpretation of data, final approval of the version to be submitted; **FBV**: Acquisition, analysis, and interpretation of data, final approval of the version to be submitted; **LRO**: Conception and design of the study, acquisition, analysis, and interpretation of data, drafting the article, final approval of the version to be submitted.

CONFLICTS OF INTEREST

The authors declare that there are no conflicts of interest.

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