

Endobronchial ultrasound transbronchial needle aspiration in the diagnosis of visceral leishmaniasis in a patient with human immunodeficiency virus infection

Dear Editor,

Endobronchial ultrasound transbronchial needle aspiration (EBUS-TBNA) has a significant diagnostic role in the evaluation of mediastinal adenopathy in patients with human immunodeficiency virus (HIV) infection/acquired immunodeficiency syndrome (AIDS), with previous studies showing a diagnostic yield ranging between 61–89%.^[1] Mycobacterial and fungal infections have been the most diagnosed infections in these patients. However, parasitic infections can be an important cause of mediastinal adenopathy with considerable morbidity in such patients. The role of EBUS-TBNA in the diagnosis of parasitic infections has not been established.

A 45-year-old Honduran man with HIV on HAART presented with worsening left-sided abdominal fullness and pain. In his 20s, he developed a slow-healing right thigh ulcer as a farm worker harvesting cantaloupe amidst rubber trees. He was hemodynamically stable but in mild distress, with a palpable spleen to the pelvic crest. Laboratory workup revealed mild anaemia, elevated liver enzymes, inflammatory markers, and PTH-independent hypercalcaemia. His CD4 count was 73 cells/mm³ with an undetectable HIV viral load, and tests for other opportunistic infections were negative. A chest computed tomography (CT) scan demonstrated diffuse ground glass

opacities and mediastinal lymphadenopathy [shown in Figure 1a and b]. CT scan of the abdomen revealed massive hepatosplenomegaly with mesenteric and para-aortic lymph node enlargement [shown in Figure 1c]. Given concerns for a possible granulomatous process, the patient underwent bronchoscopy with EBUS-TBNA of the subcarinal station lymph node (Station 7) and bronchoalveolar lavage (BAL). Cytological examination of smears and cell blocks revealed many intra- and extra-cellular oval organisms within the macrophages and lymphocytes morphologically consistent with leishmania amastigotes [shown in Figure 1d and e]. The results of special stains such as acid-fast bacilli, periodic acid-schiff, Gomori methenamine-silver, and PAS diastase were negative. Cytology was negative for malignancy. Antiretroviral and liposomal amphotericin B was started, and follow-up appointments were scheduled to evaluate his therapeutic response and course.

This case underscores the challenges of diagnosing opportunistic infections in advanced HIV, particularly with atypical presentations like visceral leishmaniasis (VL) without fever or weight loss. The diagnosis was confirmed by identifying leishmania amastigotes in BAL/EBUS fluid despite the rarity of lung involvement and hypercalcaemia. VL and HIV co-infection is an emerging challenge with VL accelerating disease progression of HIV.^[2] With

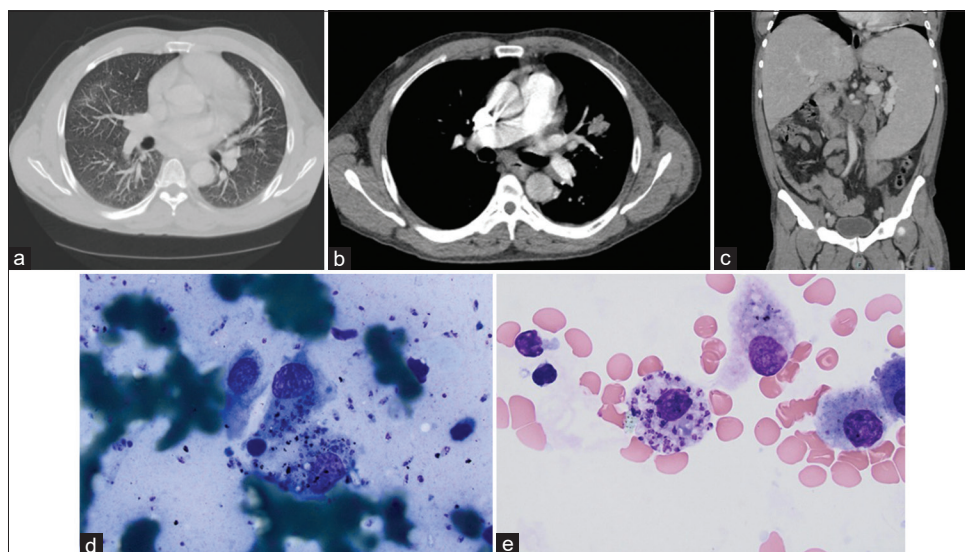


Figure 1: (a) Chest CT scans (lung window) in axial view showing ground glass opacities. (b) Chest CT scans (mediastinal window) showing mediastinal adenopathy. (c) CT scans in the coronal window showing hepatosplenomegaly, particularly massive splenomegaly. (d) Smears of EBUS-TBNA showing numerous intra and extra-cellular oval bodies within macrophages consistent with leishmania amastigotes. (e) BAL smears showing the leishmania amastigotes

worsening immunosuppression, atypical sites such as the lungs may be involved.^[3] The sensitivity of serological tests decreases in HIV-AIDs due to low antibody titers, necessitating histopathologic confirmation in these patients.^[2] Antiretroviral and anti-leishmanial treatments in HIV/AIDS patients reduce leishmaniasis risk, delay relapses, and improve survival rates.^[1] Our case highlights EBUS-TBNA's effectiveness in diagnosing leishmaniasis in lymph nodes, with only two prior endoscopic cases reported both of which were diagnosed by endoscopic ultrasound fine needle aspiration (EUS-FNA) through the oesophagus.^[4,5]

Authors' contributions

MAA, RMEYM and SVC are responsible for the conception and design, acquisition of radiological data, drafting of the article, critical revision of intellectual content and final approval of the version to be published. YHZ provided the pathologic images, helped draft the article, critically revised and gave final approval for the manuscript.

Data availability statement

All data generated or analyzed during this study are included in this article. Further enquiries can be directed to the corresponding author.

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Conflict of interest statement

The authors have no conflicts of interest to declare.

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