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Coexistent diffuse large B-cell lymphoma and disseminated *Mycobacterium avium* complex infection in a person with AIDS

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People living with HIV (PLWH);
Opportunistic illness

Dear Editor,

People with advanced HIV infection are vulnerable to a multitude of opportunistic illnesses. However, cases of coexistent diffused large B-cell lymphoma (DLBCL) and *Mycobacterium avium complex* (MAC) infection in the same lesions are rarely reported.[1] Here, we present the clinical course of coexistent pulmonary DLBCL and disseminated MAC infection in a person with AIDS.

A 44-year-old man had been in his usual state of health until three months prior to this admission, when a low-grade fever and watery diarrhea developed. Weight loss of 13 kg in one year was also reported. Physical examination was remarkable for grade two splenomegaly. Blood cultures sampled upon admission yielded *Salmonella* O9, group D1. He was a man who had unprotected sex with men during the past several years. A screening test for HIV antibodies and antigens was positive; plasma HIV RNA was 149,925 copies/mL and CD4 count was 24 cells/μL. Coformulated bictegravir, emtricitabine, and tenofovir alafenamide, trimethoprim-sulfamethoxazole, and ceftriaxone (2 g/day) were initiated.

Computed tomography of the chest and abdomen revealed a solid, well-circumscribed tumor measuring 2.8 cm in the greatest diameter at the right upper lung (Fig. 1A), along with hepatosplenomegaly, clustered mediastinal, abdominal, pelvic, and inguinal lymphadenopathy. Mycobacterial cultures of blood, stool and sputum specimens soon revealed acid-fast-positive bacilli, which were later identified as MAC on the 19th hospital day. Ethambutol, amikacin, azithromycin and moxifloxacin were administered for disseminated MAC infection.

However, fever persisted despite antiretroviral therapy and anti-MAC therapy. The histopathology of the ultrasound-guide biopsy of the lung tumor showed atypical lymphoid infiltration with coagulative necrosis (Fig. 1B) and immunohistochemistry staining revealed positivity for CD20, Mum-1 and EBER hybridization, which confirmed the diagnosis of DLBCL (Fig. 1C), and acid-fast bacilli were also found scattered in the necrotic part of the tumor (Fig. 1D). The tissue culture of the lung biopsy specimen yielded MAC.

After two courses of treatment with rituximab, cyclophosphamide, doxorubicin, vincristine and prednisolone, his fever resolved as the primary lung lesion shrank mildly in size. Due to intolerance to chemotherapy, chemotherapy was withheld. However, an ulcerative mass protruding from the hard palate was noted with spiking fever two months later. An incisional biopsy proved recurrence of DLBCL. After a 4-month course of antiretroviral therapy, plasma HIV RNA was 205 copies/mL and the CD4 count was 25 cells/mm^3. Blood, sputum and stool cultures still yielded MAC despite a six-month course of anti-MAC treatment. Despite initiation of salvage chemotherapy, the patient passed away one month later.

People with advanced HIV infection co-infected with more than one opportunistic illness are not rare and might

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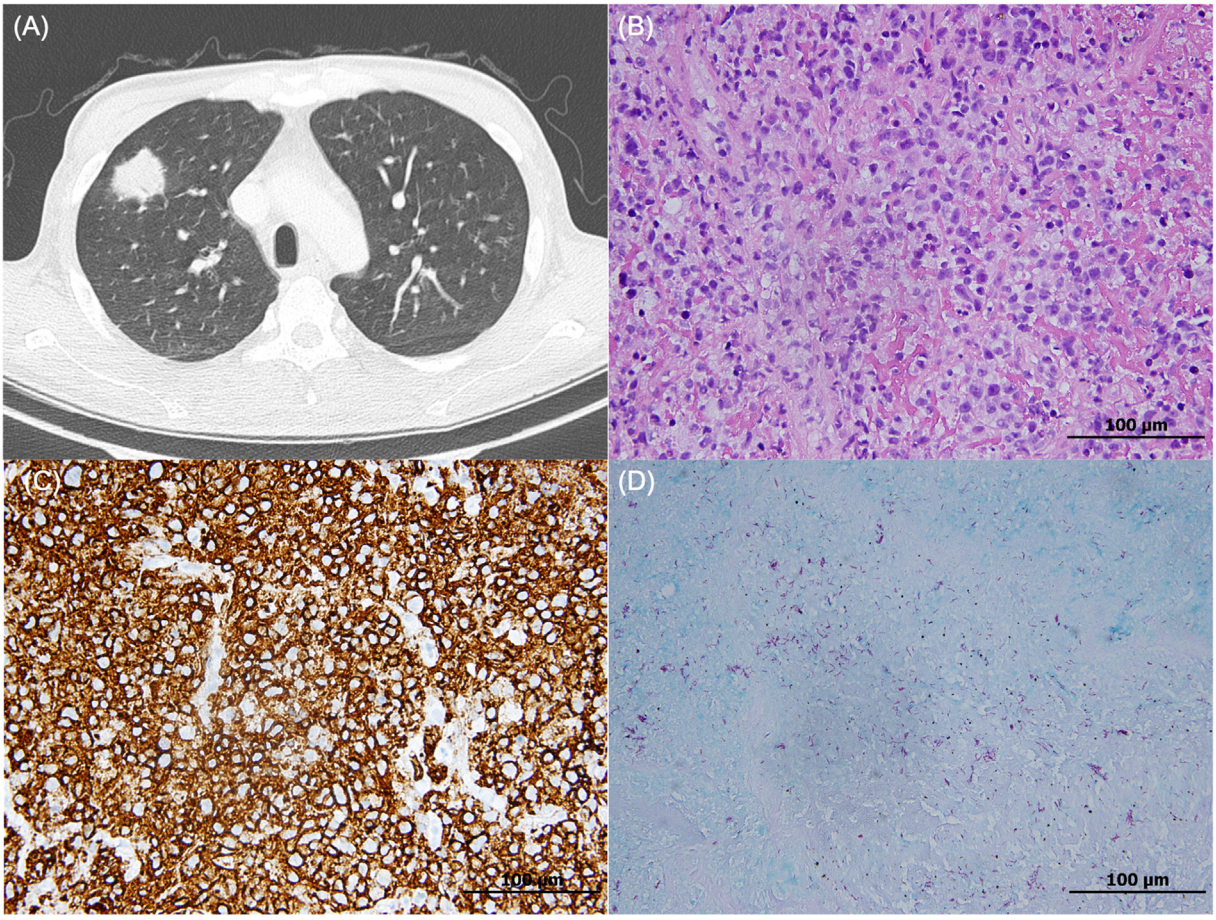

Figure 1. (A) Computed tomography of the chest revealed a solid lung tumor at the right upper lobe (B) Hematoxylin and eosin stain of the histopathology of the lung tumor (C) Immunochemistry staining for CD20 of the lung tumor (D) Acid-fast bacilli were scattered in the lung tumor.

be underestimated.[2] Since lymphomas and disseminated MAC infection share overlapping clinical manifestations, timely diagnosis could be challenging. A histopathology examination is crucial because imaging study and Epstein—Barr virus tests are not reliable surrogate markers.[3,4] Furthermore, initiation of antiretroviral therapy is associated with acceleration of immune recovery, which might subsequently improve the survival. However, in our case, the CD4 count remained extremely low despite antiretroviral therapy, which was commonly observed among those with disseminated MAC infection and subsequently led to rapid relapse of DLBCL.[5]

Declaration of competing interest

All authors have no potential conflict of interest.

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