RESPIRATORY AND ENTERAL TRANSEPITHELIAL INFECTIONS OF MYCOBACTERIUM AVIUM COMPLEX IN A PATIENT WITH ADVANCED HIV INFECTION

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Abstract  Pulmonary manifestation of Mycobacterium avium complex (MAC) disease is an unusual event in patients with advanced HIV infection. Here, we present a case of disseminated MAC disease in a 29-year-old acquired immune deficiency syndrome (AIDS) patient that had both pulmonary and enteral involvement. The mycobacteria isolated from the pulmonary and enteral lesions were genetically identical. Based on a dendrogram analysis with variable-number tandem-repeat typing, the isolate appears to cluster with M. avium subsp. avium and M. avium subsp. paratuberculosis. Biopsies of both the pulmonary lesion and the enteral lesion were conducted; the resulting histology showed infections of the epithelia, implicating both sites as being the source of the transepithelial infection. The patient was then treated with anti-mycobacterial therapy, and antiretroviral therapy for the treatment of AIDS was introduced on the 13th day. The patient's general condition improved, so he was discharged on the 69th day. To our knowledge, this is the first case report of a MAC transepithelial infection through the airways in the lung of a patient with advanced human immunodeficiency virus infection. However, the information collected in the present study is insufficient to determine the mechanism by which the enteral lesion developed. Further study will be required to determine whether or not the specificity of the isolates is related with the mechanism of lesion development.

Key words: Mycobacterium avium complex, AIDS, Pulmonary involvement

INTRODUCTION

Mycobacterium avium complex (MAC) contains two genetically distinct species: Mycobacterium intracellulare and M. avium. M. intracellulare is more common among immunocompetent individuals. Although M. avium also occasionally infects immunocompetent individuals, it typically invades patients with human immunodeficiency virus (HIV) infection. In immunocompetent subjects, pulmonary MAC disease is caused by airborne infection. In contrast, MAC disseminated disease is generally caused through enteral invasion in patients with HIV infection. Additionally, pulmonary involvement during MAC disease is an unusual event in patients with HIV infection; the percentage of pulmonary involvement is reported to be 0%–22% in these patients. It is generally thought that these pulmonary lesions are formed following bacteremia. However, it was previously unknown if airborne infection could occur in patients with advanced HIV infection. In this report, we present a case of disseminated MAC disease in a patient with HIV infection. This case had dual pulmonary involvement and enteral involvement, and both sites were histologically suggested as being the transepithelial infection. This is the first reported case demonstrating diverse infectious routes (airborne and enteral) in the same individual.

CASE REPORT

(1) Clinical presentation

A 29-year-old homosexual man with herpes zoster consulted the ophthalmologic department at the University of the Ryukyus Hospital with the complaint of an unpleasant sensation in his right eye (Fig. 1). Based on the results of an ophthalmologic screening test, cytomegalovirus retinitis was diagnosed, and a subsequent hematological examination detected the presence of anti-HIV antibodies. Based on these findings, he was admitted to our department, the Department of Infectious, Respiratory, and Digestive Medicine. Upon admission, the patient’s level of HIV RNA was 1.57×10^5 copies/mL, and his CD4+ T cell count was 7 cells/µL, so he was diagnosed as having AIDS. The patient had a history of sex with men over the last nine years but no history of drug
Abstract An 84-year-old man was admitted to our hospital because of smear positive pulmonary tuberculosis. On admission, hemogram revealed no abnormality. We started antituberculous chemotherapy including isoniazid, rifampicin and ethambutol. Leukopenia appeared after five days of treatment. Drug-induced cytopenia was suspected and all the antituberculous drugs were discontinued on day 52. However, white blood cell count did not recover and chemotherapy was resumed with ethambutol and levofloxacin. Because leukopenia lasted even after drug withdrawal, complication of blood disorders were suspected and further bone marrow examination led to a diagnosis of myelodysplastic syndrome. Drug-induced leukopenia is frequently observed during antituberculous chemotherapy. However, when an elderly patient develops leukopenia during treatment for tuberculosis, the possibility of blood disorders should be taken into account.

Key words: Tuberculosis, Leukopenia, Myelodysplastic syndrome

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