Duodenal *Mycobacterium genavense* infection in a patient with acquired immunodeficiency syndrome

Mycobacterial infection is sometimes fatal in patients with acquired immunodeficiency syndrome (AIDS). *Mycobacterium genavense*, a rare pathogen identified in 1992, causes about 10% of disseminated nontuberculous mycobacterial infections in patients with AIDS and mainly involves the small intestine [1–3]. The endoscopic findings of intestinal *M. genavense* infection are known to be nodules with a velvety appearance that is similar to that seen with *Mycobacterium avium-intracellulare* (*M. avium* complex [MAC]) [4].

A 23-year-old homosexual man with known human immunodeficiency virus (HIV) infection and a past history of hepatitis B and syphilis infections was referred to our hospital. Laboratory tests revealed his HIV RNA level to be $1.6 \times 10^5$ copies/mL and his CD4 count to be 11 cells/μL. He was admitted 2 months later with intermittent fever, general fatigue, and dry cough. A computed tomography (CT) scan of his chest showed a ground-glass appearance, suggestive of pulmonary infection.

A routine esophagogastroduodenoscopy performed 2 days after admission revealed widespread yellowish white nodules like xanthelasma in the second portion of the duodenum (Fig. 1). Pathological examination of the biopsy specimen showed an accumulation of macrophages in the lamina propria and submucosal layer (Fig. 2). Ziehl–Neelsen staining demonstrated numerous acid-fast bacteria being phagocyted by macrophages (Fig. 3). Cultures of bronchoalveolar lavage fluid and blood also detected acid-fast bacteria, which were finally identified as *M. genavense* by DNA amplification techniques. On the basis of these results, the patient was diagnosed as having disseminated *M. genavense* infection. Despite treatment with azithromycin, ethambutol, and levofloxacin, he died of respiratory failure.

**Fig. 1** Endoscopic view in the second portion of the duodenum in a 23-year-old man with known human immunodeficiency virus (HIV) infection showing widespread yellowish white nodules like xanthelasma.

**Fig. 2** Pathological appearance after hematoxylin and eosin (H&E) staining of the duodenal biopsy specimen showing an accumulation of macrophages in the lamina propria and submucosal layer: **a** in a low-power field; **b** in a high-power field.

**Fig. 3** Ziehl–Neelsen staining of macrophages showing acid-fast bacteria.

**Competing interests:** None

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Fig. 3 Pathological appearance after Ziehl–Neelsen staining of the duodenal biopsy specimen showing numerous acid-fast bacteria being phagocytosed by the macrophages: a in a low-power field; b in a high-power field.