Upper Gastrointestinal Bleeding in a Patient with HIV Infection

(See page 321 for the Photo Quiz)

DIAGNOSIS: disseminated Mycobacterium avium intracellulare complex (MAC) with nodular infiltration of the duodenum.

Upper gastrointestinal (GI) bleeding has a broad differential diagnosis in a patient with HIV infection. Bleeding may result from conditions associated with HIV infection or may be completely unrelated [1]. The likelihood that the etiology of upper GI bleeding is related to HIV infection is primarily dependent on the patient’s CD4+ cell count; patients with lower CD4+ cell counts are more likely to have an HIV-related cause of the bleeding than are patients with higher CD4+ cell counts [1].

Causes of upper GI bleeding in HIV-infected patients include Kaposi sarcoma, bacillary angiomatosis, mucosal ulcerations secondary to viral diseases (e.g., cytomegalovirus and herpes simplex virus infection), mycobacteria (e.g., Mycobacterium tuberculosis and MAC), (e.g., histoplasmosis), and non-Hodgkin lymphoma [1–3]. In addition, non–HIV-related causes of upper GI bleeding include esophageal varices, Mallory-Weiss tear, gastritis, and peptic ulcer disease [2]. Esophagoduodenoscopy is the primary diagnostic and potentially therapeutic intervention for a patient with upper GI bleeding (figure 1).

The portal of entry for MAC appears to be through either the respiratory or gastrointestinal tract, with colonization subsequently leading to dissemination [4]. The pathogens responsible for MAC are ubiquitous in the environment, and this disease was formerly a very common opportunistic infection during the pre-HAART era [4, 5]. Disseminated MAC infection occurs in HIV-infected patients primarily when CD4+ cell counts are <50 cells/mm³. The most common syndrome associated with disseminated MAC infection includes fever, night sweats, and weight loss with or without abdominal pain and diarrhea [4, 5].

Involvement of the GI tract with MAC has been reported at every site from the esophagus to the rectum. One review found the most common site of involvement to be the duodenum (in 76% of cases), followed by the rectum (24%), ileum (6%), colon (4%), esophagus (4%), jejenum (2%), and stomach (2%) [6]. The most common endoscopic finding in one series was a multitude of raised nodules that were usually yellow, white, or pink [6]. Other findings include grossly normal mucosa, ul-
cerations, erythema, edema, and friable mucosa [6]. Because no particular lesion is pathognomonic for MAC in the GI tract, biopsy and culture must be performed. The index of suspicion for MAC infection should be elevated in patients who present with severely depressed CD4+ cell counts and any of the classic symptoms of disseminated MAC infection.

In our patient, both the duodenal biopsy sample (figure 2) and cultures of peripheral blood grew *M. avium intracellulare*. The patient was treated with combination therapy for disseminated MAC infection and was prescribed a new HAART regimen. She was unable to complete the course of therapy, and the family withdrew care during a subsequent hospitalization; she died 2 months after receiving the original diagnosis of disseminated MAC infection.

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**References**