

## **Mycobacterial Esophagitis in AIDS**

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**Abstract.** A patient with acquired immune deficiency syndrome (AIDS) who presented with dysphagia is described. Barium swallow demonstrated diffuse esophagitis with longitudinal ulceration and sinus tracts to the mediastinum. Mycobacteria were seen on esophageal biopsies and *Mycobacterium tuberculosis* was cultured from a pleural effusion. Mycobacterial esophagitis should be considered in the differential diagnosis of esophagitis in AIDS, particularly when sinus tracts are demonstrated.

**Key words:** Esophagitis – Mycobacteria – Tuberculosis – AIDS

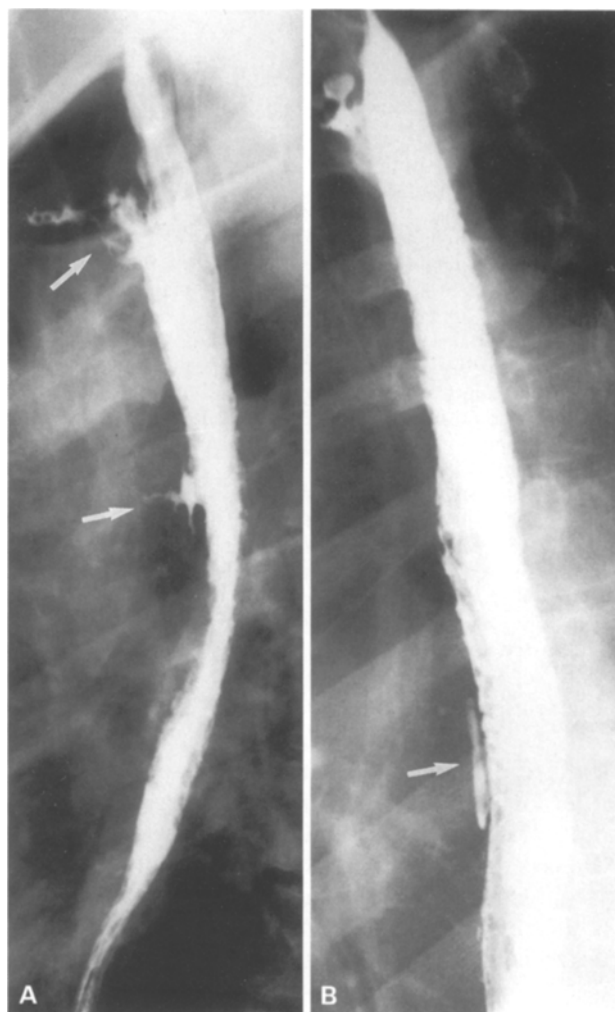
Mycobacterial esophagitis is a rare disease, usually occurring in the late stages of pulmonary tuberculosis [1]. An increased incidence of mycobacterial infections often involving extrapulmonary sites has been noted in acquired immune deficiency syndrome (AIDS) [2]. The radiological features of mycobacterial esophagitis in a patient with AIDS are discussed.

### **Case Report**

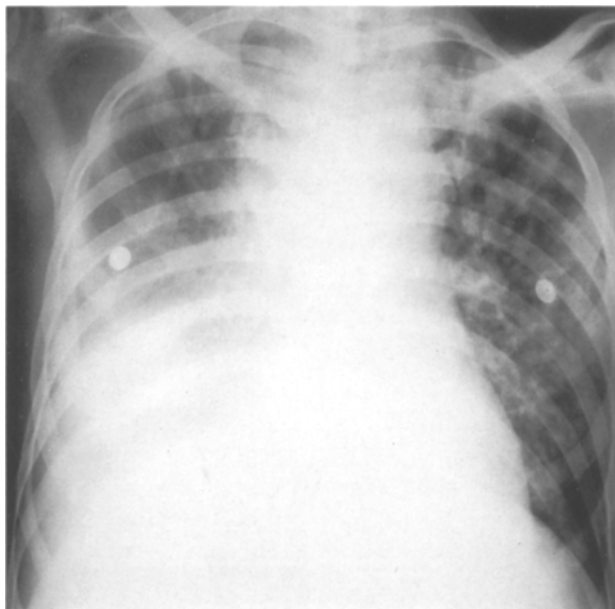
A 46-year-old man with AIDS was admitted to the Institute for Immunological Disorders with a three-week history of dysphagia, nausea and vomiting, weight loss, dyspnea, and fatigue. On physical examination, he appeared emaciated and dehydrated with gross thrush in the mouth.

An esophagram showed severe diffuse esophagitis with two sinus tracts extending anteriorly from the thoracic esophagus into the mediastinum and a long shallow ulcer in the distal esophagus (Fig. 1). The patient was treated with broad-spectrum antibiotics for possible fungal, bacterial, or viral infection.

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**Fig. 1. A** Esophagram shows sinus tracts extending anteriorly from the thoracic esophagus into the mediastinum (arrows). Diffuse mucosal irregularity of the esophagus is also present. **B** A long shallow ulceration is seen in the midportion of the esophagus (arrow).



**Fig. 2.** Anteroposterior view of the chest shows widening of the mediastinum, multiple pulmonary nodules, and a right pleural effusion.

A repeat esophagram following six days of antibiotic coverage showed no change in diffuse esophagitis. Because the patient continued to spike fevers to 103° F, esophagoscopy was performed to obtain tissue diagnosis. Severe ulcerations and necrotic material were visualized, and histological examination of esophageal brushings and biopsies revealed no evidence of fungus, but abundant mycobacteria. Final identification of the organisms could not be obtained since subsequent cultures of the specimens were negative for mycobacteria as well as for fungus and viruses.

Chest films obtained at this time showed multiple bilateral pulmonary nodules, widening of the superior mediastinum, and a large right pleural fluid collection (Fig. 2). Subsequent thoracentesis showed this collection to be a transudate and cultures yielded *M. tuberculosis*. The patient's condition deteriorated rapidly and he died 12 days after admission. An autopsy was not performed.

## Discussion

Acquired immune deficiency syndrome is a disorder of cell-mediated immunity associated with unusual malignancies and opportunistic infections. Mycobacteria represent the most prominent bacterial infection occurring in AIDS, and include both *M. tuberculosis* and *M. avium-intracellulare* complex (MAI) [3].

Since the gastrointestinal tract is a major target organ of AIDS [4], it is not surprising that mycobacterial infections occur there. Involvement of the duodenum and mesenteric small bowel by MAI has been well described [5, 6], and a case of *M. tuberculosis* involving the stomach has been reported

[7]. However, mycobacterial infection of the esophagus in AIDS is rarely seen.

Mycobacterial esophagitis has long been considered a rare disease, with most reported cases occurring secondary to advanced *M. tuberculosis* infections of the lungs or mediastinum. Proposed routes of spread to the esophagus in these cases include extension from caseating mediastinal lymph nodes, or from disease in the pharynx, larynx, or thoracic spine. Other mechanisms include hematogenous infections in miliary tuberculosis and inoculation of preexisting esophageal mucosal lesions by swallowed infectious sputum [1].

Reported findings on barium swallow in tuberculous esophagitis include displacement and distortion of the esophagus by adjacent adenopathy or adhesions, mucosal irregularity and ulceration, spasm, stricture, and sinus tracts to the mediastinum [8, 9]. Mediastinal widening on chest films is also commonly seen due to the frequency of mediastinal involvement in pulmonary tuberculosis [10, 11]. A single reported case of MAI esophagitis in AIDS described nodularity and ulcerations on barium swallow [4]. To our knowledge, esophagitis secondary to *M. tuberculosis* has not been described in AIDS despite the fact that approximately 10% of AIDS patients are infected with this organism [2].

In our case, diffuse mycobacterial esophagitis occurred in a patient with AIDS and proven extrapulmonary infection with *M. tuberculosis*. The mediastinal widening and noncavitary pulmonary nodules seen in this case commonly occur with *M. tuberculosis* infection in AIDS. Apical disease is unusual and extrapulmonary involvement is seen in nearly 50% of cases. Although these findings are more consistent with primary or recently acquired infection, epidemiological data suggest reactivation as the primary mechanism of infection [2].

Similar findings may be seen in infection with MAI. These atypical mycobacteria occur in up to 20% of patients with AIDS. Chest films may show mediastinal adenopathy, pulmonary nodules, and even miliary disease. Extrapulmonary involvement is common and often widespread with significant morbidity and mortality. Unlike in *M. tuberculosis* infection in AIDS, clinical treatments for MAI have proven ineffective [2].

Opportunistic infections of the esophagus are commonly seen in AIDS, and usually represent fungal or viral esophagitis [12]. However, it is important to consider mycobacterial disease in the differential diagnosis since both *M. tuberculosis* and MAI occur with increased frequency in AIDS

and often involve extrapulmonary sites. Although the radiographic findings in mycobacterial esophagitis are considered nonspecific, the presence of sinus tracts to the mediastinum may suggest this diagnosis since sinus tracts have not been described in fungal or viral esophagitis in AIDS. The radiologist may suggest the need for obtaining appropriate histological specimens and cultures when mycobacterial esophagitis is suspected on a barium swallow.

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