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Introduction
In developed countries, the prevalence of tuberculosis is high, mainly due to transglobal immigration, aging of the population and socioeconomic deprivation. In addition, HIV infection is associated with an increase in primary or reactivation of tuberculosis.

In tuberculosis, involvement of the esophagus is rare [1–3]. Primary involvement of the esophagus is even more uncommon. There are neither diagnostic signs or symptoms nor typical X-ray or laboratory findings [1]. Furthermore, histology often fails to establish a reliable diagnosis, so esophageal tuberculosis might be mistaken for esophageal carcinoma.

We describe the features of esophageal tuberculosis in a white elderly woman without HIV infection.

Case Report
A 78-year-old white Greek woman was admitted to the hospital because of dysphagia which she had suffered from for 3 months. The patient did not have anorexia, weight loss, nausea, vomiting or pulmonary symptoms (cough, fever).

The patient had been well until 3 months earlier. There was no history of diabetes mellitus, hemoglobinopathy, tuberculosis (or family history of it), cough, sputum, hemoptysis, weight loss, fever, chills, nor use of tobacco or alcohol.

During physical examination, the patient was well. Her blood pressure was 160/90 mmHg. Her pulse was 69 and regular. The temperature was 36.7 °C. The neck was supple with a hypertrophic thyroid gland (the patient had thyrocele and was under therapy with L-thyroxin 0.1 mg/day) and without lymphadenopathy. There were no palpable breast masses or retractions and no axillary adenopathy. The lungs were clear. There was a 1/6 systolic ejection murmur at the left sternal border without radiation. Examination of the abdomen was normal. The results of rectal examination were normal, with brown stool that was negative for occult blood. There was no peripheral edema or rash. Laboratory data were unremarkable. Serology for HIV was negative.

A skin test for tuberculosis with purified protein derivative (PPD), performed on day 5 of hospitalization, generated a negative result.

Figure 1. Computed tomography of the mediastinum showing enlarged lymph nodes subcarinal (arrow) without thickening of the esophageal wall.
Chest X-ray suggested a mediastinal mass and no other pulmonary lesions. A CT scan of the thorax, obtained without iv injection of contrast material, showed a solid subcarinal mass of about 3.5 cm without any other pulmonary opacities (Figure 1). A bronchoscopy was subsequently performed. There were no abnormalities. The direct smears and PCR from bronchoalveolar lavage (BAL) for acid-fast bacilli were negative.

The mediastinoscopy and biopsies were performed to obtain a punctate from the mass. This punctate revealed an epithelioid cell granuloma without caseation; direct examination for acid-fast bacilli proved negative.

An initial upper endoscopy was carried out using a side-view endoscope. A sign of erythema, a thickening in the esophageal wall and a small ulcerative lesion were identified in the mid-esophagus, 25 cm from the teeth. Biopsies of this lesion revealed an epithelioid cell granuloma, inflammation grade 3 and no sign of malignancy. Direct examination for acid-fast bacilli was positive. Cultures of esophageal biopsies were positive for Mycobacterium tuberculosis.

After diagnosis, therapy was initiated with rifampicin, isoniazide, ethambutol and pyrazinamide. Within 2 weeks of treatment there was remarkable improvement of the patient’s dysphagia.

The total duration of antituberculous treatment was 6 months.

**Discussion**

Inflammatory involvement of the esophagus is a rare phenomenon within the broad spectrum of manifestation of classical adult tuberculosis. Damtew et al. [4] recently analyzed 19 cases of esophageal tuberculosis reported in the literature before 1987. The average age of the patients was 43 years and the male : female ratio was 1.7:1. Most patients were black or of Asian origin.

Primary esophageal tuberculosis, with no other systemic manifestation of the disease, is extremely rare [1, 2]. Although the PPD skin test is still recommended by the Centers for Disease Control and Prevention for all age-groups, its value in elderly patients remains a subject of debate [5]. A negative PPD skin test certainly does not rule out tuberculosis, since advancing age may be accompanied by declining delayed hypersensitivity reactions.

The patient in our case presented with extrapulmonary tuberculosis in the form of tuberculous lymphadenitis. 20–25% of patients with extrapulmonary tuberculosis due to M. tuberculosis have lymphadenitis [6].

Clinical symptoms are often nonspecific. Esophageal tuberculosis most commonly presents with odynophagia or dysphagia and constitutional symptoms, although patients can be asymptomatic [7, 8]. The patient under discussion presented only dysphagia. The physicians caring for her thought that the physical signs were due to a malignant condition and attempted to confirm this diagnosis.

The definite diagnosis is difficult to establish in most cases. Confirmation of the diagnosis in our patient was achieved by positive culture for M. tuberculosis from biopsy specimens of the mediastinal mass. Histological findings most commonly reveal nonspecific granulomatous inflammation, thus not allowing any differentiation between tuberculosis, sarcoidosis, Crohn’s disease or fungal esophagitis. The microbiological microscopic identification of M. tuberculosis has a sensitivity of 40–60%. Culture techniques were more sensitive than simple microscopic evaluations. In general, the sensitivity of culture is 80–85% with a specificity of approximately 98% [9]. When noninvasive techniques have not provided a diagnosis, tissue should be obtained for histologic examination and culture.

Lesions of the deep mediastinum are often difficult to conclusively diagnose with nonendoscopic studies. Endoscopic ultrasound and endoscopic ultrasound-guided fine-needle aspiration can access this region to aid in the diagnosis and management of these lesions. With endoscopy it is possible to obtain tissue for auramine stain, histology and culture. Esophagogastroduodenoscopy does not usually detect any typical abnormalities [7]. Lesions found by endoscopy appear as mucosal irregularities or ulcers in the middle third of the esophagus. Three histomorphologically distinct forms exist: ulcerous, hyperplastic and granular esophageal tuberculosis; the ulcerous form is most frequent. The endoscopic appearance often mimics carcinoma, as in our case.

The treatment of choice is antituberculous chemotherapy, whereas surgical intervention should be considered only in patients who do not respond to conservative therapy, particularly those with non-healing fistulas. Given the excellent tissue penetration of antituberculous agents and the relative paucity of the organisms at extrapulmonary sites of infection compared with the numbers of organisms in the lung, the treatment of extrapulmonary disease should be no more difficult than that of pulmonary disease. Thus, a 6-month regimen as outlined above should suffice.

In summary, this case demonstrates the importance of an awareness of the prevalence of tuberculosis in the elderly, the altered presentation of disease and the frequency of multiple coexisting conditions in this age-group. Tuberculosis is a disease known to have an atypical presentation and even its typical presentation is altered in elderly patients. The nonspecific presentation of tuberculosis in an elderly patient led to an early misjudgment and subsequent biased interpretation of information, and resulted in lengthy hospitalization, unnecessary testing and a delay in initiating appropriate therapy.

**References**