

Case report - Esophagus

## Esophageal tuberculosis mimicking submucosal tumor

Yao-Kuang Huang, Yi-Cheng Wu\*, Yun-Hen Liu, Hui-Ping Liu

Division of Thoracic and Cardiovascular Surgery, Chang Gung Memorial Hospital, Chang Gung University,  
5 Fu-Hsing Street, Kweishan, Taoyuan, Taiwan, ROC

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### Abstract

Esophageal tuberculosis (TB) is relatively rare. This study presents a case of primary esophageal TB mimicking submucosal tumor. The diagnostic methods and therapeutic options are reviewed.

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### 1. Case report

A 54-year-old female patient complained of non-progressive dysphagia, odynophagia, and postprandial epigastric pain lasting 6 months. She otherwise was in good health and reported no other symptoms. Review of systems revealed no dyspnea, orthopnea, productive cough or intermittent fever with night sweats. She claimed to have no melena, hematochezia, heartburn, ingestion of caustic agents, or recent change in bowel habits. No family members with tuberculosis (TB) were known to exist. Clinical examination appeared normal. Neither neck lymphadenopathy nor hepatosplenomegaly was noted. Laboratory assessment and biochemical profile were also normal. Moreover, urinalysis, prothrombin, and partial thromboplastin times and cortisol level were unremarkable. Barium study revealed a small mucosal lesion in the low esophagus of the woman. Furthermore, chest CT showed asymmetrical thickening of the low esophageal wall and precarinal lymphadenopathy. Esophagogastroduodenoscopy was performed and revealed one submucosal, ovoid-shape mass measuring about 1 cm in diameter, with intact mucosa at 30 cm from the incisors (Fig. 1). Further EUS (Fujinon Optical Co. Ltd and Aloka Co., Ltd, Japan) study was then organized, and showed a 6.3 mm well-defined margin mixed echoic tumor from the esophageal mucosa layer, as well as intact underlying SM and MP layers (Fig. 2). Bronchoscopy failed to confirm an

endobronchial lesion. Surgery was performed because of persistent symptoms and suspicion of malignancy.

A double-lumen endotracheal tube was inserted under general anesthesia, and the patient was positioned in a left lateral decubitus position. Open thoracotomy was then done, and the operative field of the pleural cavity was investigated. After localizing the lesion, mobilization of the esophagus was initially conducted in the tumor-free area. The esophagus was grasped and elevated after being partially freed. The esophageal muscle layers were then dissected to expose the esophageal tumor, and the tumor subsequently was removed. Frozen section shows granulomatous inflammation involving epithelioid histocytes and lymphocytes in the stroma, indicating tuberculosis. Permanent pathology with lymph node sampling also supported the diagnosis of tuberculosis. All specimens were free of malignant cells. No perforation of the esophageal mucosa or bleeding was observed. The patient resumed oral intake 3 days after undergoing surgery, and was discharged 5 days later. The patient underwent 6 months of therapy for tuberculosis with isoniazid, pyrazinamide, rifampin, and ethambutol. No complaints or clinical signs remained after a follow-up period of 6 months. Finally, repeated endoscopy revealed no tumor recurrence 6 months later.

### 2. Discussion

Esophageal TB is a rare disease, estimated to account for 0.15% [1] of deaths from tuberculosis. Moreover, primary esophageal TB without active extraesophageal TB is even

\* Corresponding author. Tel.: +886-3-328-1200; fax: +886-3-328-5818.

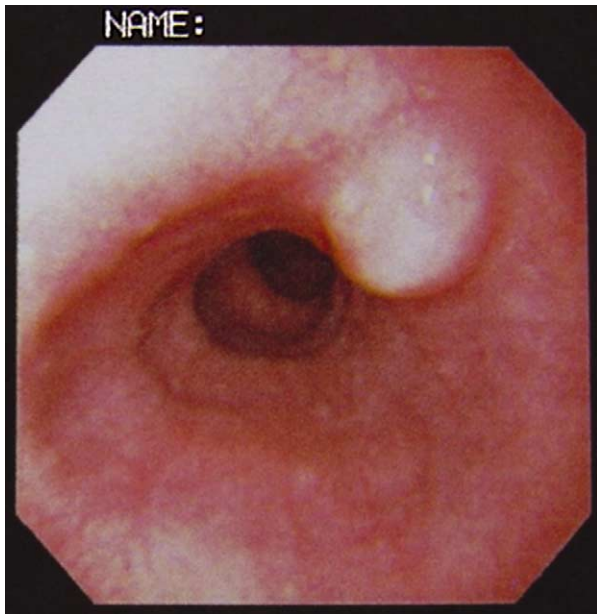


Fig. 1. Esophagogastroduodenoscopy: one submucosal mass measuring 1 cm in diameter.

more uncommon, and most patients with this condition have underlying mucosal defects, such as Barrett's esophagitis or esophageal cancer. Esophageal TB involvement generally

affects the middle-third of the esophagus around the carina. This usually is caused by direct extension and spread from mediastinal structures, the previous mechanism of spreading the inoculation of swallowed sputum, as well as by hematogenous or lymphatic spread.

The esophageal TB has various presentations. Symptoms such as dysphagia and retrosternal pain are the most common complaints. Systemic manifestations such as low-grade fever, general malaise, and body weight loss sometimes are confused with the esophageal malignancy [2–5]. Delay in diagnosis and appropriate therapy might induce severe complications. Paroxysmal postprandial coughing or frequent aspiration pneumonia is suggestive of a fistula to the tracheobronchial tree. Severe upper gastrointestinal hemorrhage from the esophageal ulcers and aorto-esophageal fistulae also has been reported [6,7].

Diagnosing esophageal TB can be difficult, and esophageal TB usually discovered during surgery. Esophageal TB should be suspected in patients with pulmonary or systemic TB who develop dysphagia or odynophagia. Roentgenographic study can provide evidence of pulmonary TB. Approximately 50% of patients with pulmonary TB display radiologic findings on chest X-ray. Mediastinal status, including periesophageal lymph node, esophageal wall thickness, and pulmonary involvement can be further

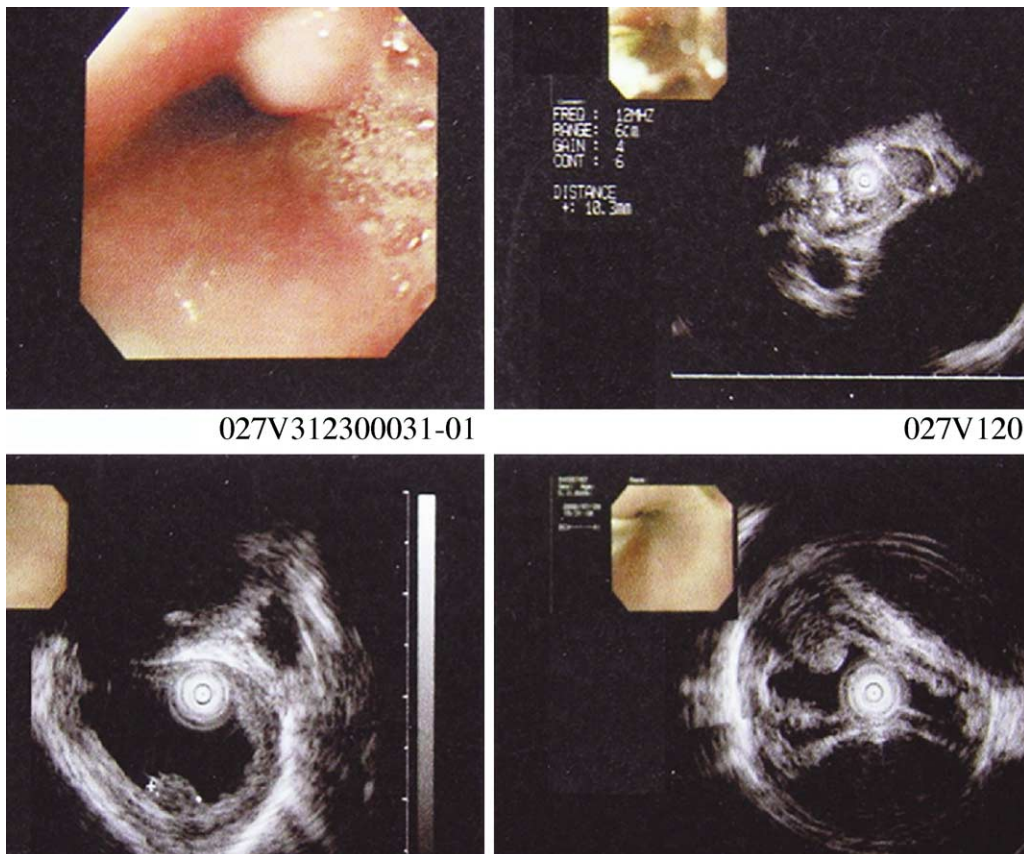


Fig. 2. Endoscopic ultrasound study: a 6.3 mm well-defined margin mixed echoic tumor from the esophageal mucosa layer with intact underlying submucosa and muscularis propia layers.

demonstrated by chest CT scans. Panendoscopy provides a valuable method of diagnosing esophageal TB submucosal lesion by providing material for both histological and bacteriologic examinations [8]. However, endoscopic biopsy should focus on detecting malignancy rather than excluding it. This focus on detection rather than exclusion is necessary because some malignant tumors may coexist with esophageal TB. Biopsied material can be stained to identify acid-fast bacilli or caseating granulomas. Serum antibody testing is less sensitive than chest CT and panendoscopy. Notably, ELISA testing is 80% sensitive for gastrointestinal TB [9].

Treatment with antituberculous agent for esophageal TB is usually effective. However, if complications such as the formation of fistulae between the esophagus and aorta or other mediastinal structures occur, then surgery may be needed for effectively treating esophageal TB [3,10].

In conclusion, primary esophageal TB is rare, and can be difficult to distinguish from malignancy. Chest plain film, chest CT scan and endoscopy examination are valuable for evaluating the progress of this disease. Surgical intervention for local complications and post-operative oral anti-tuberculous medication also obtained good results in such patients.

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