

A Case of Esophageal Perforation Caused by a Fish Bone Presenting as Typical Chest Pain

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Abstract : Chest pain is a symptom of many serious conditions and is generally considered to be a medical emergency. We treated a 68-year-old female of esophageal perforation presenting severe chest pain after swallowing a fish bone. The perforation of the esophagus was diagnosed by contrast enhanced computed tomography and esophagogastroduodenoscopy. Even though perforation of the esophagus can be fatal, we successfully treated the patient conservatively because the diagnosis was made early and the patient was stable.

Key Words : Chest pain, Esophageal perforation, Foreign bodies

Introduction

Severe chest pain can be caused by a number of conditions such as acute coronary syndrome, acute aortic syndrome, pulmonary thromboembolism and gastrointestinal diseases. It can be very difficult to identify the exact cause especially in the emergency department. Once cardiovascular and pulmonary causes have been ruled out, many other gastrointestinal etiologies must be considered[1]. No identified cause has been reported in 40% of the patients, and most studies consistently pointed out that 18–58% of the cases were resulted from the esophagus including of esophageal

perforation[2].

Case

A 68-years-old female with a medical history of smoking, and dyslipidemia presented to the emergency department complaining of severe chest pain. Symptoms starting one day prior to hospital admission, consisted of a typical pain of squeezing nature at the substernal area, and progressed gradually over the next day. The pain radiated to the patient's left shoulder and scapula. There were no remarkable findings on the physical examination.

At arrival of emergency department chest radiograph showed mild cardiomegaly (Fig. 1A). The initial electrocardiogram showed normal sinus rhythm and no ST segment abnormality (Fig. 1B). The myocardial enzymes including CK-MB and cardiac specific troponin I were within normal range. D-dimer showed normal value. Transthoracic echocardiogram revealed normal left ventricular function and no regional wall

motion abnormality. Chest contrast enhanced computed tomography (CT), which was performed to rule out acute aortic syndrome and pulmonary thromboembolism, demonstrated a foreign material in the proximal esophagus with esophageal perforation (Fig. 2).

Esophagogastroduodenoscopy (EGD) also demonstrated a foreign body (Fig. 3), with ulceration at 22 cm from the incisors (Fig. 3). Because of early diagnosis, her vital signs

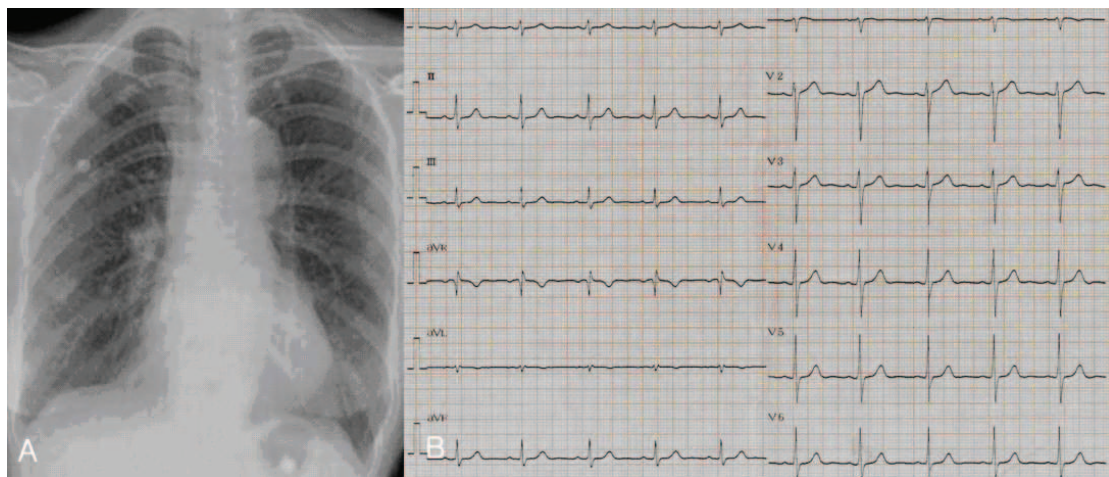


Fig. 1. The findings of chest radiography and electrocardiography on the day of admission. (A) Chest radiograph shows mild cardiomegaly without mediastinal widening. (B) Electrocardiogram shows sinus rhythms without specific ST segment changes.

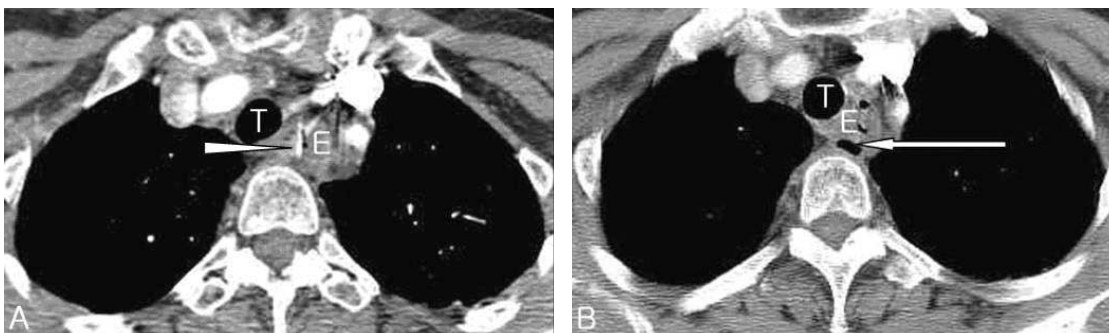


Fig. 2. The findings of computed tomography (CT) one the after admission. (A) CT shows an elongated radio opaque foreign material (arrowhead) at the proximal esophagus (E) and left innominate vein level. (B) CT shows an esophageal wall thickness at the proximal esophagus (E) and a small pneumomediastinum (arrow) around the proximal esophagus (E). T : trachea.

were stable and the chest CT showed no evidence of mediastinitis.

Conservative treatment including nothing by mouth and the injections of antibiotic drugs and antiulcer medications were successful. The symptom gradually subsided while her vital signs remained stable. 10 days after, an esophagogram demonstrated no evidence of leakage from the esophagus, and follow-up chest CT demonstrated no other evidence of

esophageal abnormality (Fig. 4).

Discussion

Chest pain is a common symptom found in patients admitting to the emergency department. The initial evaluations should be always considered life-threatening causes such as aortic dissection, pulmonary

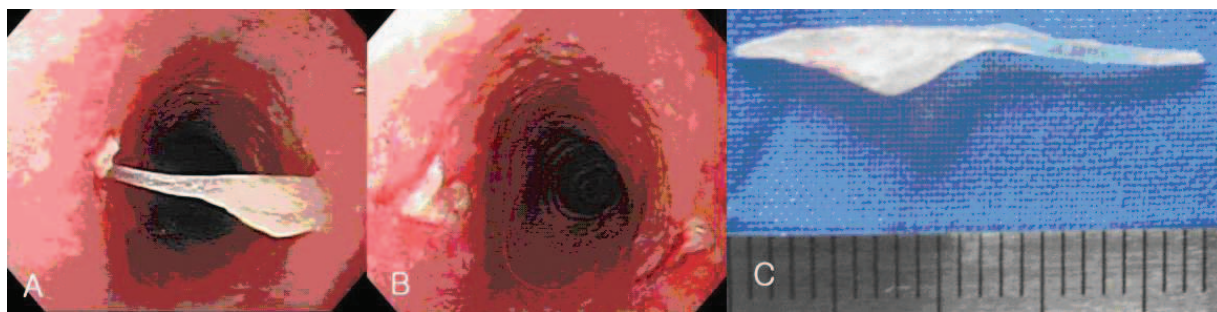


Fig. 3. The findings of esophagogastroduodenoscopy (EGD) one day after admission. (A) EGD shows a foreign material in length at 22cm from the incisors. (B) The esophageal mucosal wall shows a shallow ulceration oozing with blood after the fish-bone was removed by elegator forceps. (C) The foreign body: a transparent fish-bone with irregular margins approximately 2.3 cm in length.

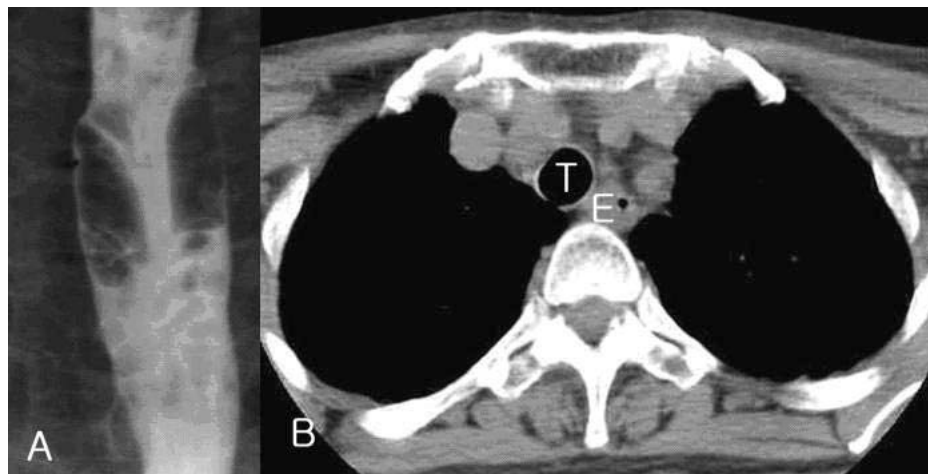


Fig. 4. The radiographic finding at ten days of admission. (A) Esophagogram shows no evidence of leakage into the proximal and mid-portion of the esophagus. (B) Follow-up chest computed tomograph demonstrates no evidence of pneumomediastinum at the periesophageal area of the proximal esophagus. E : proximal esophagus; T : trachea.

embolism, pneumothorax, pneumomediastinum, pericarditis, and esophageal perforation. Especially, cardiovascular conditions such as acute coronary syndrome, pulmonary embolism, and heart failure are found in more than 50 % of the patients admitting to the emergency department with chest pain[3].

Non-cardiac chest pain is also a frequent symptom in patients admitting to emergency department. Once cardiovascular causes are ruled out, many other gastrointestinal etiologies still remain to be investigated regardless of the clinical presentation. Among these, esophageal conditions including gastroesophageal reflux with or without lesions, and motor disorders are clearly predominate. Other causes such as gastroduodenal ulcer, functional dyspepsia, and biliary lithiasis are not common. However esophageal perforation with or without mediastinitis may sometimes present with severe chest pain[4].

Less frequently, esophageal perforation can be caused by foreign bodies. Which may be a potential complicating factor causing significant morbidity or mortality[5]. Seo *et al*[6] reported a case of traumatic acute pericarditis with acute mediastinitis, associated with esophageal and pericardial perforations caused by swallowing a fishhook.

Mediastinitis is one possible outcome of foreign body induced esophageal perforation. In this case, mediastinitis was absent because of early diagnosis and treatment. The success of treatment depends on careful history taking, meticulous physical examination, and chest radiographic findings. Prompt diagnosis of esophageal perforation is essential because the diagnosis is frequently missed at the initial presentation. The interval between the

onset of symptoms and the initiation of therapy affects the outcome. Fortunately, this patient was treated successfully because of early diagnosis and treatment.

The treatment options could be advocated in this case included nonoperative use of antibiotics, incision with drainage, endoscopic stenting, esophageal diversion, repair of the perforation, and esophagectomy [7]. Conservative therapy is generally consisted of intravenous antibiotics, non-oral intake and alternative nutrition.

We present here a case of esophageal perforation caused by the inadvertent ingestion of a foreign body, fish bone. The foreign body became apparently fixed and gradually dissolved in the upper thoracic esophagus. Because of early diagnosis and treatment, we could prevent progression to mediastinitis and sepsis. So we were able to treat this patient successfully with conservative therapy.

Reference

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