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Negative results - Esophagus

Esophageal laceration with intramural dissection mimics esophageal perforation

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Abstract

Esophageal laceration with intramural dissection is a rare type of injury but without perforation. It is difficult to differentiate from esophageal perforation at presentation time. We report the case of a 46-year-old man who was admitted to our hospital complaining of progressive chest pain, dysphagia, and odynophagia after swallowing a fish bone three days prior to admission. Esophagoscopy revealed a deep longitudinal laceration with pus discharge in the esophagus. Computed tomography of the chest revealed low posterior mediastinal abscess formation. Surgery was performed under the impression of esophageal perforation. The definite diagnosis was esophageal laceration with intramural dissection.

Keywords: Esophageal laceration; Intramural dissection; Perforation

1. Introduction

Esophageal perforation is a serious disorder that is difficult to diagnose and associated with significant morbidity and mortality. Early diagnosis and treatment are essential and reduce the mortality rate by at least 50% [1]. Esophageal laceration with intramural dissection is a rare type of rupture involving mucosa with dissection between the mucosal and muscular layer of the esophagus but without perforation [2]. It is difficult to differentiate from esophageal perforation at presentation time. We describe a patient who sustained esophageal laceration with intramural dissection mimicing esophageal perforation.

2. Case report

A 46-year-old male was sent to our emergency room for surgical intervention under the impression of esophageal perforation with mediastinal abscess formation. He experienced sudden onset of chest pain and odynophagia after swallowing a fish bone three days before admission. He had no previous history of dysphagia or chest pain. He went to a local clinic for help and some antacid and narcotic analgesics were given. Progressive dysphagia, odynophagia, and chest pain had been noted later. Low grade fever was noted at the day of admission. So he went to a local hospital, where endoscopy and chest CAT scan were arranged. Esophageal perforation was found and an emergency operation was recommended. Then he was asked to transfer to our emergency room for further evaluation and management.

At the emergency room, this patient looked acutely ill. Chest CAT-scan from a local hospital showed low posterior mediastinal fluid accumulation around the esophagus (Fig. 1). Esophagoscopy was repeated and revealed a deep, longitudinal laceration about 3 cm in length over the 4 o'clock direction at 35 cm from incisor with peripheral necrotic change and pus discharge (Fig. 2). Under the impression of esophageal perforation, an emergency operation was performed. Right-sideed are exploratory minithoracotomy revealed an intact esophageal wall and intramural fluid accumulation. Esophageal laceration with intramural dissection was diagnosed. NPO and intravenous antibiotics were provided and his symptoms resolved gradually. Esophagoscopy was done two weeks after the operation and revealed normal appearance.

3. Discussion

Esophageal laceration with intramural esophageal dissection is a rare type of rupture involving mucosa with a long laceration between the mucosal and muscular layer of the esophagus without perforation. The most common presented symptoms of intramural esophageal dissection were sudden onset of severe retrosternal pain (83%), hematemesis (71%), odynophagia (41%), and dysphagia (32%) followed 4–5 h after the initial event [2]. These common

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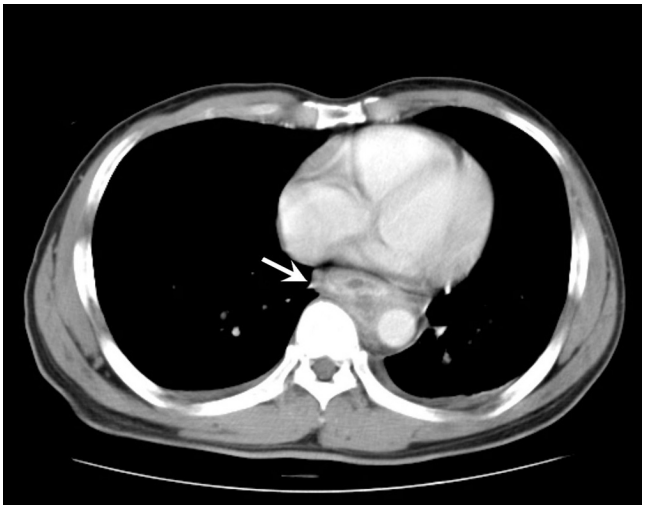

Fig. 1. CT of chest revealed the low posterior mediastinal abscess formation (arrow).

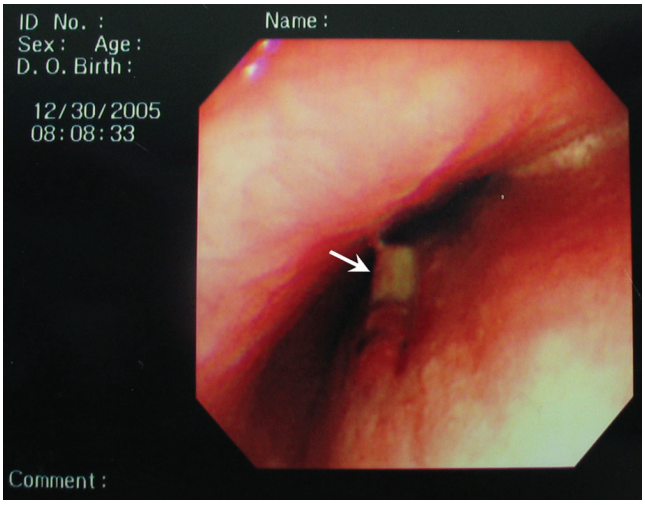

Fig. 2. Esophagoscopy demonstrated a deep, longitudinal laceration in the esophagus with pus discharge (arrow).

clinical manifestations of intramural dissection may mimic an event of esophageal perforation which should be managed with surgical intervention immediately.

Esophageal perforation is a serious disorder that is difficult to diagnose and manage. Early diagnosis and treatment are essential and reduce the mortality rate by at least 50% [1]. Contrast esophagography remains the standard in diagnosis of esophageal perforation. Although water-soluble contrast agents, such as gastrografin, may effectively extravasate in just 50% of cervical and 75–80% of thoracic perforations, it is advocated for first line screening due to their rapid absorption [3]. If a water-soluble study revealed a negative result, serial barium contrast esophagography should follow. Contrast studies have an overall false-negative rate of 10% [4]. Because of the diagnostic uncertainty, surgery was performed for esophageal laceration with intramural dissection as reported in the literature [5].

The diagnosis of intramural esophageal rupture can be made by a water-soluble contrast esophagogram, such as gastrografin. Two signs which had been described for intramural dissection included 'mucosal stripe sign' (or so-called linear stripe) and 'double-barreled sign' [6, 7]. Esophageal lumen narrowing or obstruction may be seen. Extravasation of contrast media was highly suggestive of complete perforation of the esophagus wall and surgical intervention was indicated. Although some authors thought that a fiberoptic flexible endoscope might be traumatic in this situation, some recent reports suggested it can be done safely and could be therapeutic [8, 9]. Computed tomography (CT) and magnetic resonance imaging (MRI) of the thorax can also be helpful in differential diagnosis of other mediastinal lesions. Chest CT-scan may show an eccentric wall thickening or a septum-like lesion separated by true and false lumen [5]. MRI may reveal intermediate signal intensity with scattered area of high signal intensity on T1- and T2-weighted image compatible with subacute hemorrhage [10].

Intramural dissection of the esophagus was usually treated conservatively with intravenous fluid support and forbidden from oral ingestion [7]. The prognosis is usually good. Surgical management and drainage of mediastinal abscess plays no role in the condition if it is not associated with esophageal perforation. Most patients can resume oral intake within several days. The esophagogram and upper GI endoscopy should be repeated two to three weeks later.

In patients with retrosternal pain associated with dysphagia and odynophagia after foreign body ingestion, esophageal lesion should be always taken into consideration, such as esophageal perforation or laceration with intramural dissection. Chest CT-scan and endoscopy can mislead a clinician into unnecessary surgical intervention. Contrast esophagography seems to be a good method to differentiate these two entities.

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