Introduction

Acute mediastinitis due to esophageal perforation is a rare condition that is often misdiagnosed leading to inappropriate initial therapy and high mortality rates [1]. We present a case of acute mediastinitis due to esophageal perforation presenting as a mediastinal mass.

Case Report

A 22-year-old Caucasian man presented to the hospital with chest pain and fevers of one-week duration. His symptoms started after experiencing a loud eructation while drinking beer followed by retrosternal chest pain. He denied any tobacco or drug use. He had no recent travel or significant exposures. He had a history of childhood asthma and no surgical history. On examination, patient had a temperature of 38.5 °C, heart rate of 122 bpm and blood pressure of 95/48 mmHg. The remaining physical exam was unremarkable. Laboratory work up revealed a neutrophilic (82.5%) predominant leukocytosis of 18,000/μL. Electrocardiogram, chest radiograph and serum Troponin T were normal. A computed tomography angiography (CTA) of the chest revealed a soft tissue mediastinal mass involving the subcarinal region (figure 1) concerning for lymphoma. A bronchoscopy with endobronchial ultrasound-guided transbronchial needle aspiration of the subcarinal mass revealed evidence of inflammation with necrosis and bacteria nidus without evidence of lymphoma. These findings were consistent with mediastinitis from possible esophageal perforation. All cultures remained negative. Esophagram showed no signs of perforation (Figure 2). Repeat CT scan of the chest showed an enlarging pericardial effusion and bilateral pleural effusions (Figure 3). Esophagogastroduodenoscopy (EGD) showed esophagitis. Echocardiogram revealed a large pericardial effusion, with mobile debris encircling the heart. The patient underwent a pericardial window due to impending tamponade followed by robotic assisted thoracoscopy mediastinoscopy and drainage of the mediastinum. The pathology showed chronic fibro-fibrinous pericarditis (Figure 4). It was believed the patient developed a small esophageal perforation leading to mediastinitis that had spontaneously healed by the time of endoscopic examination. His chest pain, fevers, and leukocytosis resolved. He was discharged on antibiotics with hospital follow up. A four-month follow up CT of the chest showed resolution of the pericardial and pleural effusions (Figure 5).

Discussion

Acute mediastinitis can occur in the context of cardio-thoracic surgery, esophageal perforations and oropharyngeal infections condition. Forty-five percent of esophageal perforations occurs during simple endoscopy. Spontaneous perforation (Boerhaave syndrome) accounts for 15% of perforations, and twelve percent are due to the ingestion of foreign bodies. Other causes include blind or penetrating trauma, and circa 9% to intraoperative lesions. CT scan is the standard investigation that reveals direct signs of mediastinitis.

In contrast, mediastinal lymphoma is more common, either as part of disseminated disease or less commonly as the site of primary involvement. Lymphomas are responsible for approximately 15% of all primary mediastinal masses, and 45% of anterior mediastinal masses in children. Only 10% of lymphomas which involve the mediastinum are primary (i.e. mediastinal involvement not part of systemic disease) and the majority are Hodgkin lymphomas (~ 60%) [2].
Figure 1: Initial CTA Chest with mediastinal mass

Figure 2: Esophagram obtained in on hospital day number three showed no signs of esophageal perforation
Figure 3: Follow up chest CT showed bilateral pleural effusion and enlarging pericardial effusion.

Figure 4: Fragments of tissue with areas of fibrosis and crush artifact. There is abundant fibrinopurulent material composed of mixed inflammatory cells including numerous neutrophils. Findings suggestive of inflammatory response.
This case highlights the importance of a detailed history to establish an accurate diagnosis of mediastinitis particularly since the initial CT of the chest revealed a mediastinal mass suggestive of primary lymphoma. It is crucial to have a high index of suspicion for alternative diagnosis that if appropriate treatment is delayed could be fatal. Acute mediastinitis has been reported to occur in 1% of patients with esophageal perforations [3]. The severity varies from mild pleuritis or pericarditis to fulminant infection [4]. The treatment includes avoidance of oral intake, proton pump inhibitors, broad-spectrum antibiotics and surgical interventions if indicated [5-8].

**References**
