A CASE REPORT ON BOERHAAVE SYNDROME IN THE ELDERLY

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ABSTRACT

Significance

Boerhaave Syndrome, defined as a spontaneous esophageal rupture, is rare but life-threatening. A delay in diagnosis is often encountered due to the heterogeneity of clinical presentation resulting in delayed treatment. 15-40% of all esophageal perforations are spontaneous and usually occurs in 40 to 60 year old age group.

Clinical Presentation

An 88 year old female, previously admitted ~2 weeks prior for pneumonia, presented at the emergency room due to sudden onset of difficulty breathing and subcutaneous emphysema.

Management

On initial work up, noted with right sided pleural effusion and underwent thoracentesis. Plain Chest CT scan was done and the patient was subsequently managed as a case of pneumothorax. Antibiotics were started however, there were persistent episodes of hypotension and desaturation. The patient was then referred to gastroenterology service and underwent Neck and Chest CT Scan with water soluble contrast revealing ruptured mid to distal esophagus. The patient subsequently underwent esophagogastroduodenoscopy which revealed boluses of food along the mid to distal esophagus. The point of rupture was identified however, the patient was noted to be bradycardic and underwent cardiac arrest. Return of spontaneous circulation was noted after 15 minutes of resuscitation. The patient then underwent VATS, with evacuation of pleural fluid, necrotic tissue and food materials.

Recommendation

Recognition of spontaneous esophageal rupture, especially among the elderly is of utmost importance for timely and appropriate management. The authors highly recommend further studies comparing endoscopic and surgical interventions among elderly patients with Boerhaave Syndrome.

Keywords: Case report, Boerhaave Syndrome, esophageal rupture, elderly

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INTRODUCTION

Esophageal rupture is rare but life-threatening.[1] The heterogeneity of symptoms often lead to a delay in diagnosis and subsequent delay in appropriate treatment leading to systemic adverse events such as sepsis and mortality. Spontaneous esophageal rupture, otherwise known as Boerhaave Syndrome occurs in 15-40% of all esophageal perforations and usually occurs among 40-60 year old individuals but was also reported in the elderly.[2] Boerhaave Syndrome refers to spontaneous esophageal perforation of a normal esophagus unrelated to foreign bodies, previous instrumentation, surgery, or trauma.[3] Clinical clues for the diagnosis of esophageal perforation include a rapidly progressive pleural effusion, pneumomediastinum, subcutaneous emphysema, and hydropneumothorax.[4] Diagnostic evaluation may include chest radiography, esophagography, CT scan and endoscopy. Among the elderly population, a delay of greater than 48 hours to treatment, and presence of perforation in the thoracic and abdominal esophageal segments predisposes this population to poorer outcomes.[4] This paper aims to present the clinical presentation of Boerhaave Syndrome in the elderly and to demonstrate the consequence of delayed treatment in this clinical entity.

CLINICAL PRESENTATION AND MANAGEMENT

An 88 year old female, Filipino-Chinese came in at the emergency department due to dyspnea. Ten hours prior to consult, the patient was noted to have difficulty breathing, with associated right shoulder pain and subsequently noted with facial puffiness. At the emergency department, the patient was noted to be hypertensive, tachypneic, and febrile. There was noted crepitation over the anterior chest extending to the base of the neck, and further extending to the area of the nape.

On initial work-up, there was note of opacification of the right mid to lower lung fields with subsegmental atelectasis and subcutaneous emphysema on the neck, no pneumomediastinum noted (Figure 1).

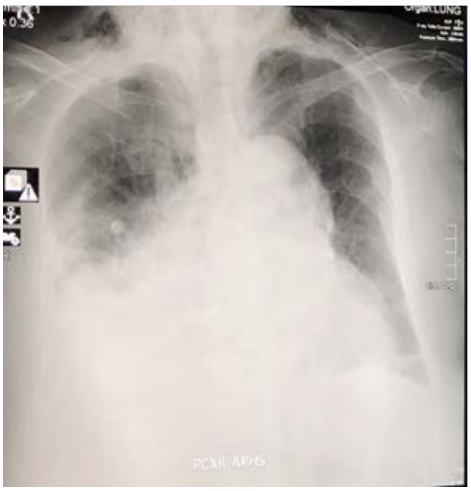

Fig.1 Chest Xray on admission, showing right sided pleural effusion with subsegmental atelectasis and subcutaneous emphysema.

Chest ultrasound was then done, which revealed 721mL of free, non-loculated pleural fluid on the right hemithorax. The patient subsequently underwent pigtail insertion on the right lateral chest wall, draining 800mL of serosanguinous fluid, with fecaloid odor. Pleural fluid culture revealed moderate growth of Enterococcus faecalis and was started on Ampicillin Sulbactam. On the 3rd hospital day, neck and chest CT scan with water soluble contrast, given thru the nasogastric tube, revealed ruptured mid to distal esophagus with extravasation of contrast (Figure 2).

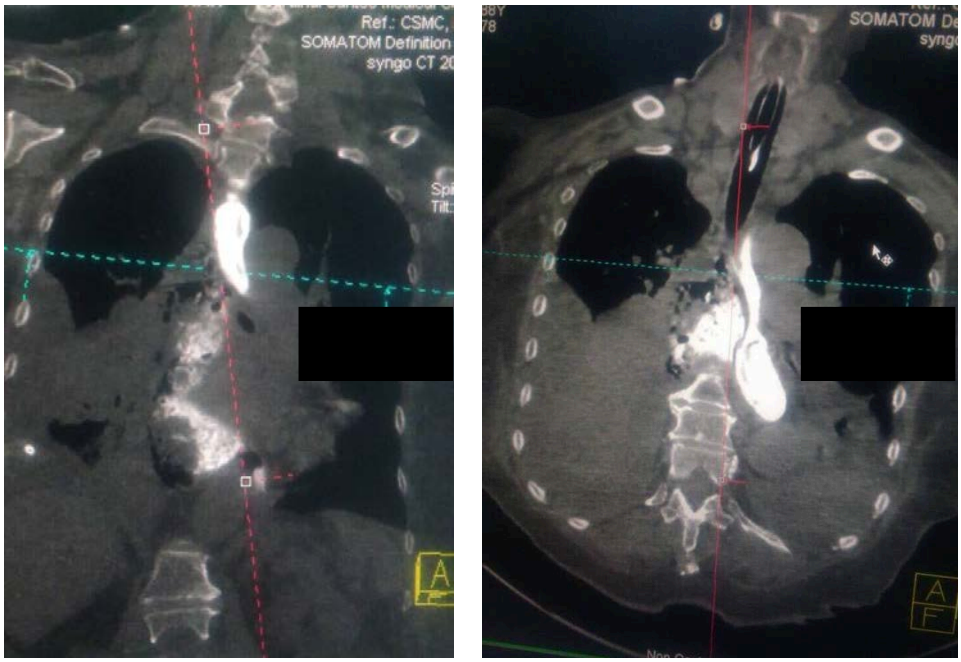

Fig. 2 Chest CT scan with water soluble oral contrast revealing contrast extravasation on the mid to distal esophagus.

Patient's family then opted to perform endoscopic management instead of open thoracotomy. On endoscopy, the point of rupture at the right mid-esophagus was noted. (Figure 3). The procedure, however was terminated because the patient became bradycardic, and went into cardiac arrest. Return of spontaneous circulation was noted after 15 minutes of resuscitation.

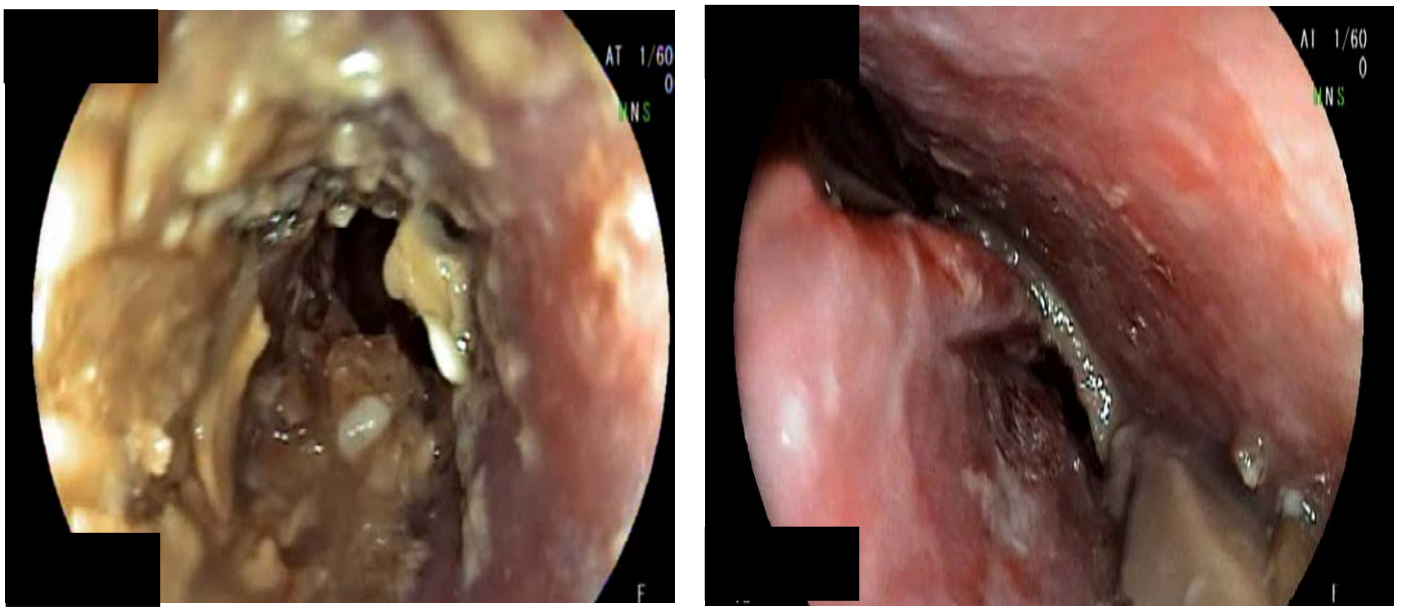

Figure 3. Esophagogastroduodenoscopy revealing boluses of food and the point of rupture in the mid esophageal area.

The patient then underwent video assisted thoracoscopic surgery (VATS), with deloculation and decortication, mediastinal debridement, evacuation of pleural fluid, necrotic tissue, and food materials. There were note of pus like lesions along the mucosa of the right pleura and lungs, with necrotic tissues along the lung parenchyma. The patient however, was persistently bradycardic and hypotensive. The patient subsequently expired on the seventh hospital day secondary to acute respiratory failure and septic shock.

DISCUSSION

Spontaneous esophageal rupture, otherwise known as Boerhaave Syndrome, has heterogenous clinical features and would often be misdiagnosed, initially. Incidence of esophageal perforation is low, estimated at 3.1 per 1,000,000 persons, and only 15% of these have Boerhaave Syndrome.[5] The most commonly observed symptoms compose the Mackler's triad and this

includes vomiting, lower chest pain and subcutaneous emphysema.[5] There are, however atypical presentations including hoarseness of voice or neck and upper back pain.

Early recognition of Boerhaave syndrome may lead to earlier administration of appropriate treatment and possibly, better prognosis. Radiographic evidence of Boerhaave Syndrome include evaluation through plain radiograph, esophagography, CT scan, and endoscopy.[5] Chest radiography identifies the presence of hydropneumothorax, pneumomediastinum mediastinal widening, and subcutaneous emphysema. Contrast studies often reveal direct extravasation highly indicative of esophageal perforation. Endoscopy on the other hand, can be both diagnostic and therapeutic.

Boerhaave Syndrome may be approached conservatively, endoscopically or operatively. Conservative management include utility of antibiotics, and percutaneous drainage of abscess. Endoscopic management involve use of hemoclips or self-expandable metal stents. Operative management involves primary esophageal repair or video assisted thoracic surgery. Although there are reports of elderly patients, who survived even with delayed recognition of spontaneous esophageal rupture, it is still more commonly observed that delays in the diagnosis of Boerhaave Syndrome, often lead to delayed treatment and subsequent poor prognosis.[6] Complications of esophageal perforation include pneumonia, mediastinitis, and mortality.

CONCLUSION

Boerhaave Syndrome, otherwise known as Spontaneous Esophageal Rupture is rare and life-threatening, especially among the elderly population. Early recognition of this clinical entity translates into earlier administration of appropriate and timely intervention. Treatment options include conservative management, endoscopic treatment, or surgery. However, due to the heterogeneity of clinical presentation of Boerhaave Syndrome, delays in making the correct diagnosis occur, and often lead to poor prognosis and increased mortality. Hence, it is important for the clinician to recognize Boerhaave Syndrome early for better prognosis, especially among the elderly.

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