



Boerhaave Syndrome: A Case Report of Spontaneous Esophageal Perforation

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Abstract

Boerhaave syndrome is an uncommon but potentially fatal condition caused by spontaneous rupture of the esophagus, usually following forceful vomiting. Delay in diagnosis significantly increases morbidity and mortality. We present a 38 year old man who arrived with chest discomfort, facial swelling, and respiratory distress after repeated vomiting following alcohol binge intake. Imaging demonstrated pneumomediastinum, bilateral pleural effusion, and contrast leakage from the esophagus into the pleural cavity. Emergency thoracic drainage and surgical intervention were performed. Early recognition, aggressive resuscitation, and multidisciplinary management were essential for survival. This report highlights the importance of considering esophageal perforation in patients with chest pain and subcutaneous emphysema following forceful emesis and retching.

Keywords: Boerhaave Syndrome, Case Report, Esophageal Perforation, Pneumomediastinum, Subcutaneous Emphysema, Thoracic Emergency

1. Introduction

Boerhaave syndrome refers to a full thickness tear of the esophageal wall resulting from a sudden rise in intraesophageal pressure associated with forceful vomiting or retching¹. Although rare, it is considered a surgical emergency because mediastinal contamination may rapidly lead to sepsis and shock². The condition commonly presents with severe chest pain after vomiting; however, the clinical manifestations are often variable and may mimic other thoracic emergencies such as myocardial infarction, pulmonary embolism, or pneumothorax³. Early diagnosis remains difficult because the classical Mackler triad of vomiting, chest pain, and subcutaneous emphysema is present only in a minority of patients⁴. Imaging studies, especially Contrast-Enhanced Computed Tomography (CECT), play a major role in establishing the diagnosis by

demonstrating mediastinal air, pleural collections, and contrast leakage⁵. Prompt intervention improves outcomes and reduces mortality⁶.

2. Aim and Objectives

The purpose of this report is to emphasize the need for rapid diagnosis and timely treatment of Boerhaave syndrome. The objectives include describing the clinical presentation, discussing diagnostic difficulties, reviewing imaging findings, and summarizing current management approaches.

3. Review of Literature

Boerhaave syndrome contributes to a small percentage of esophageal injuries but carries a very high mortality

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rate if untreated². Middle aged men are more commonly affected, especially after episodes of severe retching or alcohol intake³. The classical Mackler triad of vomiting, chest pain, and subcutaneous emphysema is seen only in a minority of patients, making diagnosis difficult. CT thorax with oral contrast is currently one of the most reliable diagnostic tools because it can detect mediastinal air, pleural collections, and contrast leaks. Treatment depends on the timing of diagnosis, extent of contamination, and general condition of the patient. Conservative management may be considered in selected stable patients with contained perforations, whereas unstable patients with extensive contamination generally require operative management^{6,7}. Endoscopic stenting has also emerged as a useful treatment option in selected cases⁸.

4. Materials and Methods

4.1 Study Design

This study is a retrospective case report and literature review of a 38 year-old male with chest Discomfort and respiratory distress, subcutaneous emphysema and suspected Boerhaave syndrome, rare spontaneous Perforation of esophagus.

4.2 Patient Data Collection

Clinical history, including presenting symptoms, examination finding, and response to treatment, was obtained from electronic medical records. Radiological findings (Bed side ultrasonography, CT, CECT) and laboratory results (complete blood Count, serum ESR, CRP, serum amylase and serum lactate level, Arterial blood gas analysis) were Reviewed.

4.3 Ethical Considerations

Patient data were anonymized to ensure confidentiality, and institutional guidelines for case reporting Were followed.

5. Case Presentation and Results

A 38 year old male presented to the emergency department with chest discomfort and facial swelling

for two days. He had repeated episodes of vomiting mixed with food particles and blood after binge alcohol intake. On examination, extensive crepitus was noted over the neck, chest, and face. The patient was hypotensive and tachycardic. Breath sounds were reduced bilaterally.

Laboratory tests showed leukocytosis, elevated inflammatory markers, metabolic acidosis, and raised serum lactate. CT thorax demonstrated pneumomediastinum, bilateral pleural effusions, and widespread subcutaneous emphysema. Contrast-enhanced imaging confirmed a perforation in the distal esophagus with leakage into the pleural cavity.

The patient underwent immediate resuscitation with intravenous fluids and broad spectrum antibiotics. Bilateral tube thoracostomy drained pleural collections containing food particles. Emergency cervical esophageal diversion with feeding jejunostomy was subsequently performed. Intensive care monitoring and multidisciplinary management contributed to stabilization of the patient.

6. Discussion

Spontaneous esophageal rupture remains a diagnostic challenge because the presenting features overlap with many cardiothoracic and abdominal emergencies³. Delay in recognition can result in mediastinitis, empyema, septic shock, and multi organ failure⁴. Imaging is therefore critical in suspicious cases. Chest radiography may show pleural effusion or mediastinal air, but CT scan provides better visualization of the perforation and associated complications.

Management strategies include conservative therapy, endoscopic techniques, and surgery⁶. Stable patients with limited contamination may be treated conservatively, whereas unstable patients with extensive leakage usually require operative management⁷. Endoscopic stenting has shown promising results in selected patients⁸. In this patient, severe contamination and septic features necessitated urgent surgical intervention. Early pleural drainage, broad-spectrum antibiotics, and intensive supportive care played an important role in recovery. In the present case, severe

contamination and septic features necessitated urgent surgical intervention.

7. Conclusion

Boerhaave syndrome is an uncommon yet life-threatening emergency that requires a high degree of clinical suspicion. Patients presenting with chest pain, vomiting, and subcutaneous emphysema should be evaluated promptly for esophageal perforation. Timely imaging, early drainage procedures, antibiotic therapy, and definitive surgical management significantly improve patient outcomes.

8. References

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