‘Anchoring’ the diagnosis: A Case of Boerhaave Syndrome complicated by Persistent Esophageal Leak

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Introduction

Boerhaave syndrome(BH) is one of the most lethal gastrointestinal disorders which results from esophageal rupture commonly from forceful emesis. Here, we review a classic presentation of BH but with delayed diagnosis due to atypical imaging findings, low clinical suspicion and early anchoring on presentation.

Case Presentation

- Previously healthy 69 year old man presented with severe abdominal and back pain which was preceded by post-prandial nausea, vomiting, and diarrhea, after eating from a street vendor.
- Vitals were normal. Labs revealed leukocytosis of 19 K/UL. CT abdomen showed features of gastroenteritis and CT chest revealed a moderate pleural effusion with atelectasis, a small pneumothorax and pericardial effusion. He was started on 100% FiO2, fluid hydration and analgesia.
- He later revealed additional history of chest pain with bouts of retching associated with the vomiting.
- Within 24hrs, his clinical status deteriorated due to an enlarging complex pleural effusion. EKG showed diffuse ST segment elevations. A surgical chest tube was placed (D3) which drained purulent material and he was started on antibiotics and antifungals. Pleural fluid amylase was normal.
- Given a high suspicion for esophageal perforation a CT with gastrografin was ordered, however was delayed by his altered mentation. A definitive diagnosis of BH was made via CT (D4), showing contrast in the distal esophagus.
- His hospital course was prolonged; multiple esophograms and EGDs showed persistent leak despite repeated attempts at stents and clip placements.
- He underwent robotic VATS, pneumolysis, decortication and surgical J tube placement (D10).
- After repeated interventions the leak closed and he was discharged to rehab two months after his initial presentation.

Investigations

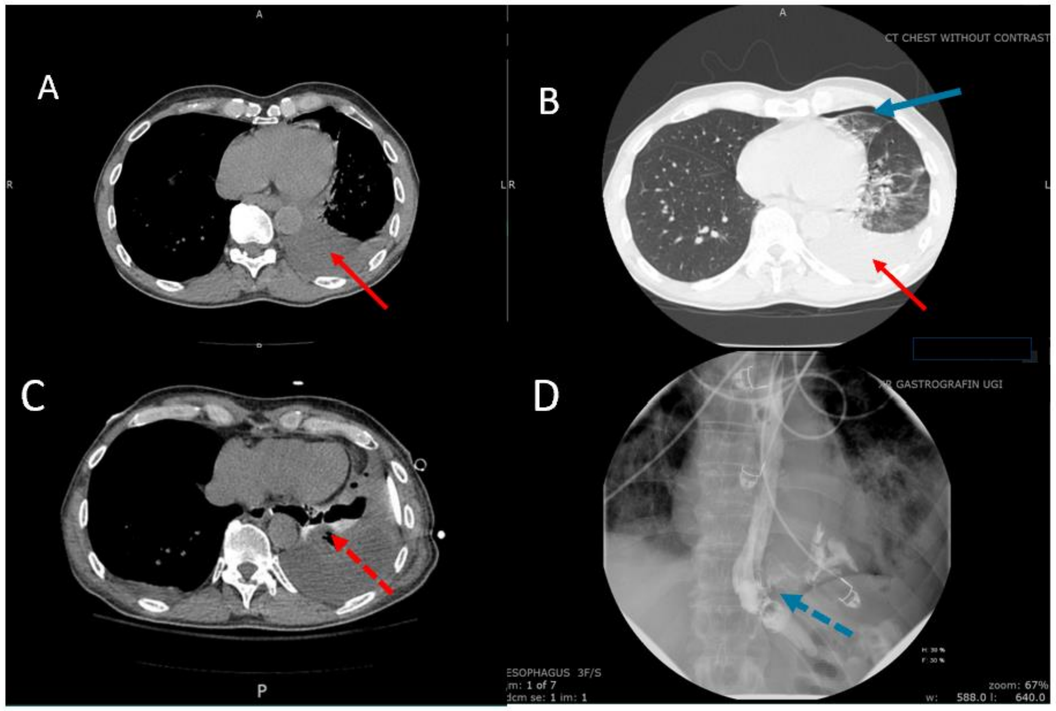

Fig 1: Image A&B: CT chest done on day 1 of admission showing a moderate left pleural effusion (red arrows), small pericardial effusion and a left pneumothorax (blue arrow). Image C: CT chest with oral contrast done on day 4 of admission; loculated left pleural effusion with chest tube, extravasation of intraluminal air and oral contrast in the distal esophagus to the left pleural space. (red dotted arrow). stent (Image D, blue dotted arrow). Xray gastrografin- distal left esophageal perforation with extravasation of contrast proximal to the GE stent.

Pleural fluid

Appearance: turbid, brown

Cell count: WBC 148K CU/MM, RBC 110K CU/MM, many bacteria

LDH>7500, Amylase: 32

Culture: Streptococcus mitis, Hemophilus parainfluenza, Rothia mucilaginosa, Enterobacter aerogenes

Discussion

- Esophageal perforation is rare with an incidence of 3.1 per 1 million per year. BH accounts for 15% of cases and carries a mortality rate of 90% if left untreated.[1]
- It classically presents with Mackler’s triad of vomiting, chest pain, and subcutaneous emphysema, but its rarity and varied presentation makes it a diagnostic dilemma.
- Chest pain is seen in ~70% of cases, but vague co-existent symptoms can lead to a missed diagnosis in 17% of cases, only to be diagnosed at autopsy.[2]
- Hydropneumothorax is a less common presenting feature (~20%) and rarer still is pericardial effusion[2,3,4], both of which were seen in our patient.
- Diagnosis relies on a good history, a high index of suspicion and radiographic evidence of contrast extravasation at the site of perforation. Early anchoring led to a diagnosis of gastroenteritis, aspiration pneumonia with associated pleural effusion and pericarditis as individual diagnoses and therefore, delayed the diagnosis of BH leading to significant morbidity.

Conclusion

BH is a rare and lethal condition that has a varied clinic presentation. Prompt diagnosis requires a hypothesis-driven history and imaging. Early intervention is key to decreasing significant morbidity and mortality.

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