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Rare case of cocaine, cannabis and alcohol induced vomiting leading to Boerhaave syndrome

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Abstract

Oesophageal perforations are rare, with an incidence of 3.1 per 1,000,000 per year. Boerhaave syndrome is associated with high morbidity and mortality and is fatal in the absence of therapy. The occasionally nonspecific nature of the symptoms may contribute to a delay in diagnosis and a poor outcome. We present a case study of the above with cocaine and substance abuse leading to rupture of oesophagus. A 31-year-old male was brought to the emergency department by London ambulance during COVID with abdominal pain. The ED staff was informed that the patient experienced chronic diarrhoea and vomiting because of cocaine, cannabis, and alcohol usage.

Patient presented with vomiting, chest, neck pain and had evidence of subcutaneous emphysema. On auscultation patient also had a crunching noise synchronised with the heartbeat (Hamman's sign). Patient was urgently referred to surgeons and a fast access CT Chest, Abdo, Pelvis was performed. A diagnosis of Boerhaave syndrome/ oesophageal perforation was made. Treatment: Antifungals and antibiotics to help prevent sepsis from acute mediastinitis.

Mackler's triad is a rare condition and not all patients present with Boerhaave or oesophageal rupture. This patient had a history of heavy vomiting to the point where there was severe chest pain, and streaks of blood in the vomitus. Our case demonstrates the clinical high yield value in concreate history taking, examination, alongside targeted image modalities in diagnosis of this syndrome as misdiagnosis has catastrophic implications

for the patient. Should an insistent vomiter come in with chest pain, Boerhaave should always be considered.

Introduction:

With death rates as high as 40%, Boerhaave syndrome is one of the most dangerous gastrointestinal illnesses in modern medicine. Symptoms might vary and determining the cause can be difficult. Boerhaave's syndrome has a short survival rate if not recognised promptly and treated appropriately. A lack of initial management can be lethal; thus, it must focus on prompt detection and response. The oesophagus ruptures because of violent emesis, resulting in Boerhaave syndrome. The illness may appear with a variety of symptoms, such as vomiting, chest pain, and subcutaneous emphysema, or it may present with the traditional Mackler triad of vomiting, chest pain, and subcutaneous emphysema.

Case Presentation and Discussion:

A 31-year-old male was brought to the emergency department by London ambulance during COVID with abdominal pain. The ED staff was informed during triage that the patient experienced chronic diarrhoea and vomiting because of cocaine, cannabis, and alcohol usage. Interestingly, the same patient had a similar episode only a few months before. He had been brought in by ambulance after experiencing a low mood and consuming a combination of cocaine and alcohol. He noticed blood streaks after initially vomiting violently. He had stopped vomiting at some point during his prior admission, with normal blood panel, but he later fled the hospital.

On current admission patient exhibited excessive vomiting associated with chest pain and neck pains. Blood panel showed raised white cells of 15.4x10*9/L and neutrophilia of 12.2x 10*9/L, an AKI stage II (urea 11.1, creatinine 154) and a potassium of 2.4 on the blood gas. His potassium was aggressively treated with intravenous KCL additives, and chest pain diagnosed as GORD. At some point he suffered a fall, falling face first into the floor requiring a CT trauma series.

Patient was then handed over to the medical team for the diagnosis of hypokalaemia on background of diarrhoea and vomiting and a possible discharge. The CT head was normal, with no

intracranial bleed. However, in the CT cervical spine a report was made of: “extensive abnormality within the soft tissue of the neck and along the prevertebral soft tissue (alongside his complaint of neck pain). There is also evidence of free air in the mediastinum and within the soft tissue of the anterior wall of the chest. The above-mentioned appearances could raise possibility of further ruptured viscus.”

This patient had come in with vomiting, complained of chest, neck pain initially and now had evidence of subcutaneous emphysema (radiographic evidence). The above is the classic Mackler triad in Boerhaave syndrome. On auscultation patient also had a crunching noise synchronised with the heartbeat (Hamman’s sign) . Patient was urgently referred to surgeons and a fast access CT Chest, Abdo, Pelvis was performed. CTCAP showed: “pneumomediastinum which tracks anteriorly and posteriorly but disproportionate insufflation in the posterior mediastinum suggests a source within the aerodigestive tract. Surgical emphysema tracks to the supraclavicular fossa and the neck. A diagnosis of Boerhaave syndrome/ oesophageal perforation was made.

Treatment:

Patient was started on antifungals and antibiotics to help prevent sepsis from acute mediastinitis, kept nil by mouth whilst being hydrated with intravenous fluids and was being discussed with the cardiothoracic team at a tertiary centre. Unfortunately, the patient discharged against medical advice and his status is unknown.

Conclusion:

This case highlights some key patient safety questions. Whilst Boerhaave is a rare condition and not all patients present with Mackler's triad some key points were given to us as tools here.

Firstly, this patient had a known heavy alcoholic history. It is well known the corrosiveness of alcohol on the GI tract and alcohol associated vomitus. Not only this but he complained of aggressive vomiting to the point of subjectively letting us know that he had streaks of blood in vomiting. He has now re-presented months later with the same symptoms but complaining of chest pain, and neck pain. The vomiting is still occurring. Although the CT was requested

for a unrelated issue, it identified a potential catastrophic medical problem that carries a 40% mortality rate.

Key Learning points:

- When patients come in with a long history of heavy vomiting to the point where there is severe chest pain, we should have a very low threshold of oesophageal rupture.
- An X-ray is a relatively quick, inexpensive modality of imaging that can be done in patients in which there is a suspicion of oesophageal rupture. Although not diagnostic, could be a good starting point
- On auscultation crunching sounds in synch with systole phase of the heart is almost pathognomonic for pneumomediastinum and coupled with the above symptoms of vomiting and chest pain should raise suspicion for oesophageal perforation.

List Of abbreviations:

GORD: Gastro-oesphageal reflux disease

ED: Emergency Department

KCL: Potassium Chloride

CT: Computer tomography

Figures:

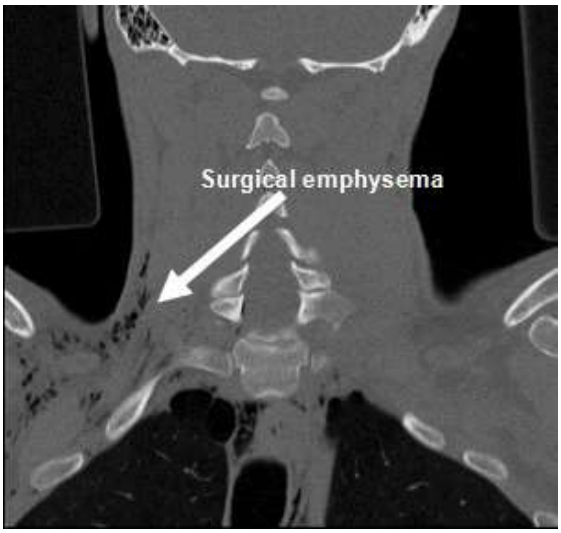

Figure 1 Subcutaneous emphysema Left side.

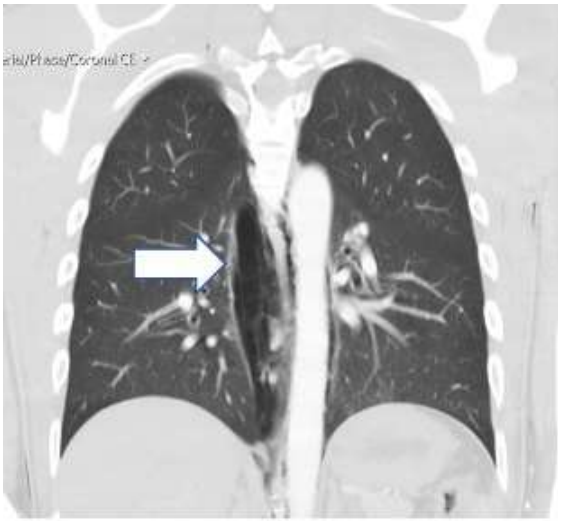

Figure 2 Large volume of pneumomediastinum with compressive affect can be seen

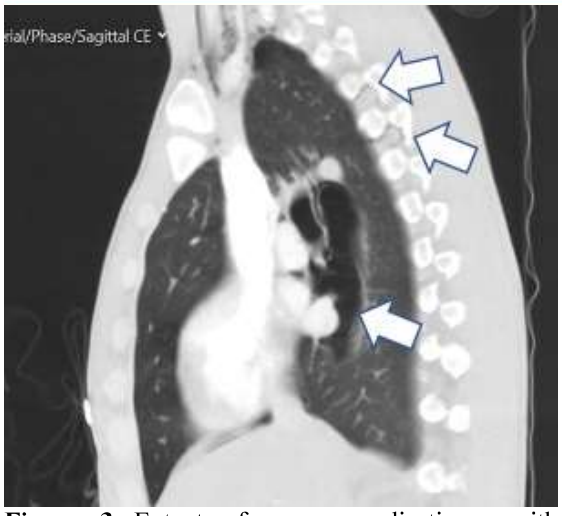

Figure 3 Extent of pneumomediastinum with visible pneumorrhachis

Keywords: Gastro-oesphageal reflux disease, Boerhaave syndrome, heavy vomiting, Mackler triad, mediastinitis, emphysema.

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Competing interests and conflict of interest:

Authors declare no competing interests or conflict of interest.

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Disclosure:

Details were anonymised were possible, permission was granted for image use. Case report may be used for learning please cite.

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