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Case Report

Gastric emphysema: a case report of an elderly female patient with vomiting

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ABSTRACT

Gastric emphysema is the presence of air in the stomach wall. it is rare radiological sign. Different etiological factors associated such as gastric outlet obstruction, trauma, severe vomiting, air from the mediastinum, and or ischemia. The management is by different approaches depending on the underlying cause. Only a few cases published in the literature about gastric emphysema, so we published our rare case including our approach to such a disease with achievable outcomes. 88 years old female presented complaining of nausea and vomiting with stable vital signs and computed tomography (CT) findings of diffused gastric submucosal oedema and emphysematous changes appear as a linear distribution with portal vein gas involving the left hepatic lobe which was treated conservatively with successful outcome. Gastric emphysema is rare, and non-infectious entity, it is a benign condition. The patients usually present with mild, non-specific vague mild, or moderate symptoms, like epigastric pain and vomiting. The diagnosis is made by radiological studies. Initially, a plain abdominal X-ray may show gastric distension. Confirming study by CT, which is the study of choice. It has an excellent prognosis with conservative management, long-term complications are rare and complete resolution is usually achieved with conservative management, although there are few cases of recurrent disease reported in the literature.

Keywords: Gastric emphysema, Portal vein, Gastrointestinal surgery, Gastric wall

INTRODUCTION

Gastric emphysema is the presence of air in the stomach wall.[4] it is rare radiological sign and believed to be critical findings however different etiological factors associated with such a disease make it more reliable to be less critical and managed with different approaches depending on the underlying cause.[1,2,4] Multiple etiologies can cause gastric emphysema such as gastric outlet obstruction, trauma, severe vomiting, air from the mediastinum, and or ischemia.[1,2,4] Some reported cases presented concurrent findings of portal vein gases and were thought to be more critical. There is no specific clinical presentation for a patient with gastric emphysema and often they presented with stable hemodynamically status the management can be conservative with treating the underlying cause, however, if the patient presented with unstable hemodynamically, the surgical intervention is needed.[3,4]

Due to only a few cases published in the literature about gastric emphysema, we are interested in publishing our rare case including our approach to such a disease with achievable outcomes.

CASE REPORT

This is an 88-year-old female, a known case of dementia (history was taking from her home care nursing) and diabetic, presented to the emergency department with nausea and vomiting for few days.

She experienced multiple episodes of vomiting an intermediate amount food content with no history of hematemesis, associated with epigastric abdominal pain that was moderate and intermittent.

No history of eating from outside, nor change in her eating habits, she was not on any medication at the time of admission. No change in bowel habits, no blood in the stool however she was not a smoker or alcoholic and did not use any illicit drugs.

She had a history of multiple visits to the emergency department due to the same complaint.

On physical examination, she was alert but disoriented, confused, and dehydrated, vital sign examination revealed his blood pressure of 100/59 mm Hg, heart rate of 115 beats/min, temperature of 36.9, respiratory rate19/min and oxygen saturation of 97% on room air.

On abdominal examination, no previous scars, no abdominal distension, audible bowel sounds by auscultation, and diffuse mild tenderness noticed in the epigastric region to the deep palpation with no signs of peritonitis.

Table 1: Laboratory results.

Laboratory parameter	Patient result
White blood count	19.44
Haemoglobin	13
Haematocrit	0.399
Platelets	366
Sodium	139
Potassium	4.0
Creatinine	141
Blood urea nitrogen	15.5
Amylase	110
INR	1.1
Glucose random	10.7

Her chest X-ray showed normal size heart and no active lung lesions was found or air under the diaphragm, Abdominal X-ray (supine) showed dilated stomach and no small or large bowel dilatation (Figures 1 and 2).

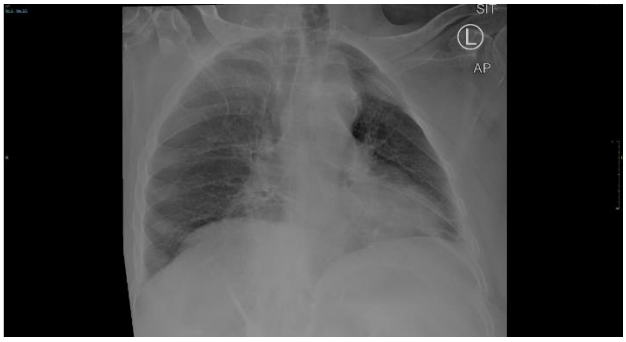

Figure 1: Chest X-ray AP view.

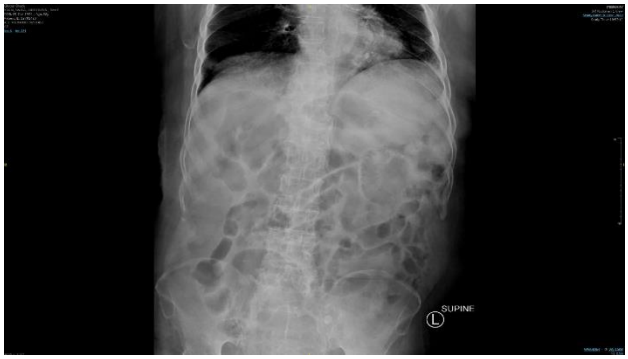

Figure 2: Abdominal X-ray supine view.

The patient underwent a CT scan of the abdomen with IV contrast showed diffused gastric submucosal oedema and emphysematous changes appear as a linear distribution (Figures 3-6). There is portal vein gas involving the left hepatic lobe and no pneumoperitoneum was seen nor free abdominal fluid and patent abdominopelvic vascular findings, no evidence of small nor large bowel ischemia.

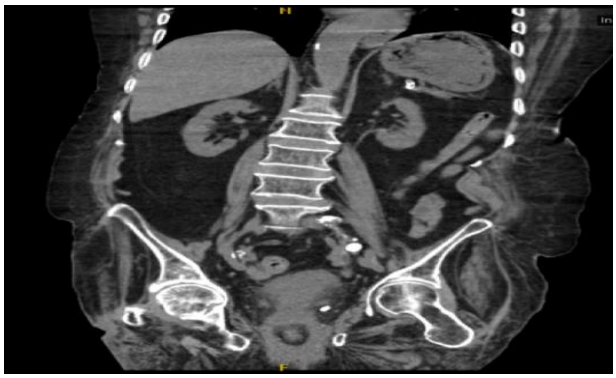

Figure 3: CT abdomen coronal view.

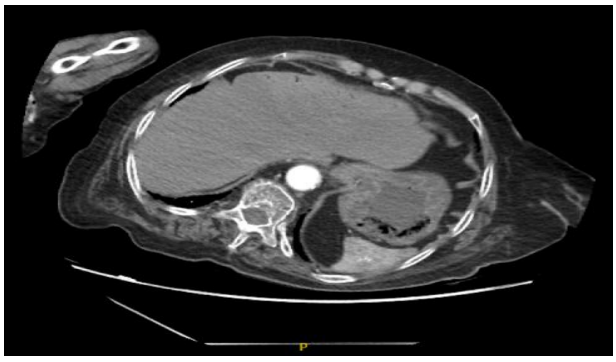

Figure 4: CT abdomen axial view.

Management

The patient was admitted to the hospital, kept NPO, and received good hydration, antiemetic medications, PPI, and antibiotics. She has been observed over three days in the hospital and started in regular diet gradually with good tolerance and stable conditions.

She has been discharged in good stable condition. Upon the follow-up period patient was doing fine without new onset of any GI complaints.

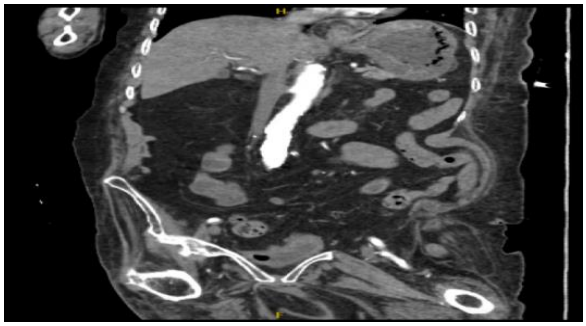

Figure 5: CT abdomen coronal view.

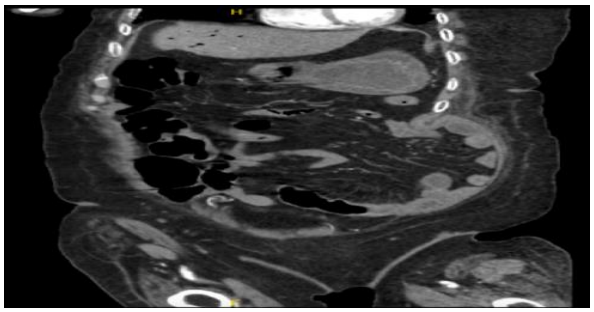

Figure 6: CT abdomen coronal view.

DISCUSSION

Gastric emphysema is rare, and non-infectious entity. It develops due to disruption of gastric mucosa and entry of air in any gastric layers of the gastric wall.[5]

There are a variety of causes that lead to gastric emphysema, including endoscopic or surgical trauma, severe vomiting, acute gastric distention like in eating disorders, gastric outlet obstruction, and air leak from rupture of alveolar space or dissection of air from mediastinum as in pneumothorax.[4,5] The gastric emphysema is a benign condition.[5] The patients usually present with mild, non-specific vague mild, or moderate symptoms, like epigastric pain and vomiting.[4-6] The diagnosis is made by radiological studies. Initially, a plain abdominal X-ray may show gastric distension. Confirming study by CT, which is the study of choice. CT finding of gastric distention, intraluminal air, portal vein gases, and linear gas distribution without gastric wall thickening.[4,5] In the cases of equivocal underlying etiology for example, the cases with suspension of ischemia, there are roles for endoscopy and or diagnostic laparoscopy.[4] The gastric emphysema treatment depends solely on the patient's hemodynamic stability, in a stable patient, conservative management with gastric decompression, bowel rest, proton pump inhibitor, and fluid hydration will suffice.[4-6] The gastric emphysema has an excellent prognosis with conservative management, long-term complications are rare and complete resolution is usually achieved with conservative management, although there are few cases of recurrent disease reported in the literature.[5]

Emphysematous gastritis resembles gastric emphysema in the clinical presentation and radiological findings, but the management differs.[4] Emphysematous gastritis is an infectious entity in which the patients have evident sepsis, like increased leukocyte count, fever, septic appearance, and hemodynamic instability.[4-6] In emphysematous gastritis, imaging features are similar in gastric emphysema in gastric distension and intraluminal air, but it differs in mural thickening.[4-6] Emphysematous gastritis is a severe disease and carries a high mortality rate of 61%. Emphysematous gastritis treatment is supportive with intravenous fluid, parenteral antibiotics, proton pump inhibitors, and bowel rest. The surgical intervention is reserved for failed medical treatment because of tissue friability.[5,6]

CONCLUSION

The gastric emphysema has an excellent prognosis with conservative management, long-term complications are rare and complete resolution is usually achieved with conservative management, although there are few cases of recurrent disease reported in the literature.

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