

Gastric Emphysema

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Introduction

Presence of intramural gas in the stomach, Gastric emphysema (GE), is rare but alarming radiological finding. The clinical course of GE depends on underlying etiologies such as emphysematous gastritis (infected by gas forming organism), gastric ischemia, increased intraluminal pressure, chemical or mechanical injuries, or perforated gastric ulcer. We report the case of gastric emphysema in a 92 year old patient who presented with gastric ischemia triggered by sliding ventral hernia.

Case Report

A 92 years old African American lady with history of small bowel obstruction, status post diversion colostomy presented with one day duration of vague abdominal pain and multiple episodes of emesis after having heavy meal. Physical examination is remarkable for large reducible ventral hernia, without sign of peritonitis or sepsis. On the initial presentation mild leukocytosis and lactic acidosis were noted. A computed tomography (CT) scan of the abdomen showed gastric pneumatosis along with large left ventral hernia containing a portion of stomach and small bowel (Figure 1). No intra-abdominal free air was reported. Patient was treated conservatively with bowel rest, intravenous fluid, empiric antibiotics and anti-emetic medication. The next day lactic acid was trended down to normal. Endoscopy was subsequently performed and found to have severely nodular erythematous mucosa with whitish exudate seen in body of stomach. The stomach was also appeared to be twisted along the axis where ventral hernia was found (Figure 2). In considering of the patient's age and multiple

comorbidities, conservative management was appreciated. She was discharged home without complication.

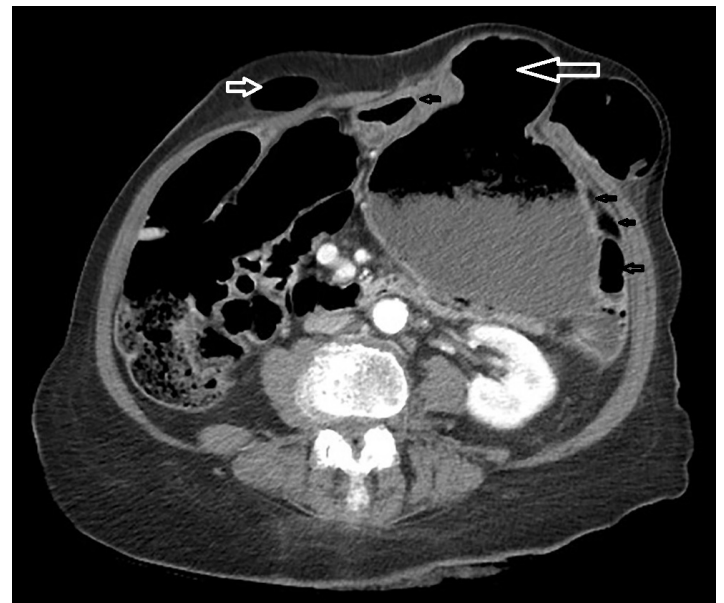


Figure 1: CT scan of the abdomen (a) small dark arrow showing interval appearance of gastric mural pneumatosis, (b) big white arrow showing ventral sliding hernia, (c) small white arrow showing status post subtotal colectomy and right anterior colostomy, and (d) fluid-containing distal thoracic esophagus, dilated stomach containing fluid and particulate matter.

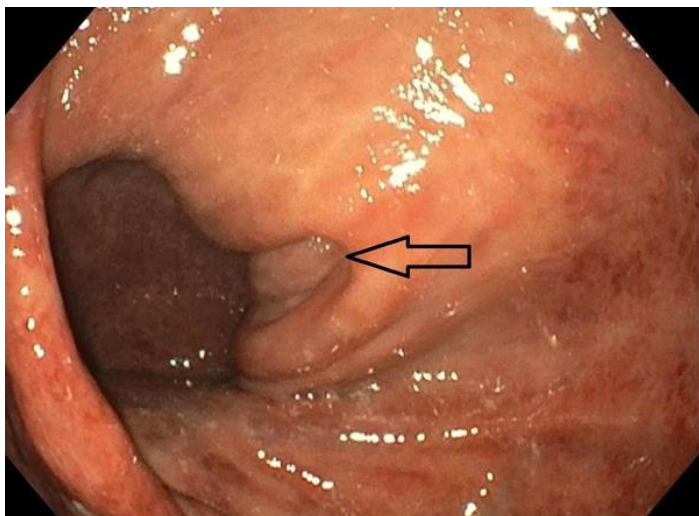


Figure 2: EGD finding of gastric ischemia caused by sliding ventral hernia.

Discussion

We present a case of elderly patient with gastric emphysema in setting of gastric ischemia. The interruption of blood supply to the stomach was likely due to transient strangulation of sliding hernia after a heavy meal. Despite the worrisome finding of imaging, our patient was managed with conservative treatment with bowel rest and intravenous fluid.

The collection of gas in the wall of stomach can be found in 3 circumstances: (1) interstitial gastric emphysema, (2) cystic pneumatosis and (3) emphysematous gastritis [1]. Although less than 100 cases of both gastric emphysema and emphysematous gastritis have been found in last three decades, only 18 cases of GE is recorded in 15 years of period [2].

The presence of intramural gas in the stomach is recognized as gastric emphysema (GE). They usually are rare but alarming radiological finding. Gastric emphysema can be caused by mechanical forces such as NG tube insertion, emesis, alveolar air leaks through mediastinum in chronic obstructive pulmonary disease, chemotherapy induced mucosal ischemia and bacterial infections such as pseudomonas [3]. The finding of round gas bubble in the stomach on the imaging is pathognomonic features

of gastric emphysema. Clinically, the patients are clinically stable compared to emphysematous gastritis.

Cystic emphysema is defined as the presence of several 1-2 mm gas filled cysts in gastric wall on radiological images. They usually present with mild gastrointestinal symptoms.

In emphysematous gastritis, the characteristic radiological finding is presence of streaky and linear air in gastric intramural area. Patients present with severe abdominal pain associated with fever, leukocytosis and complications such as hematemesis and melena and they are more critically ill and toxic looking.

Elevated serum lactate is associated with bad prognosis in gastric pneumatosis [4]. Gastric pneumatosis should be considered as a rare but possible differential diagnosis on presenting with abdominal pain with leukocytosis superimposed by emesis, CAT scan remains the best imaging for diagnosis in all cases.

Surgical intervention can be considered depending on presentation, hemodynamic status, age, comorbidities, extent of bowel involvement, complications such as perforation, peritonitis, and necrotic bowel. Despite the surgical intervention, the outcome is usually poor and unsatisfactory in setting of comorbidities.

In our case report, gastric emphysema is caused by gastric ischemia from interruption of blood supply to the stomach due to transient strangulation of the sliding hernia after heavy meal. In spite of the worrisome radiological findings, conservative management alleviated the symptoms of our patient.

References

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