Emphysematous gastritis in a patient with an acute gastrointestinal bleed

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CASE

A 50-year-old man was admitted for scheduled left tibia internal fixation procedure after a motorcycle accident. He has a past medical history significant for obesity, hypertension, COPD, hepatitis C, colorectal cancer status post colectomy, CHF status post single chamber ICD placement, 32 pack-year history of smoking, and prior methamphetamine and cocaine abuse. During his first postoperative night, patient had acute epigastric pain associated with coffee-ground emesis and melena. He denied any recent consumption of alcohol, NSAID use, or prior episodes of melena. He was transferred to ICU for acute GI bleeding. On presentation, patient was diaphoretic with HR of 107 beats/min, RR of 22 breaths/min, and BP of 92/57 mmHg. Laboratory tests showed WBC of 13.99 K/μL and Hb of 12.8 g/dL. Blood cultures were negative. Endoscopy performed the next day revealed nonbleeding ulcerative distal esophagitis and a large necrotic ulcer occupying half of the proximal gastric body. Subsequent abdominal computed tomography scan showed emphysematous gastritis of the fundus and proximal body with perigastric fat stranding and no free air (Figure 1). Abdominal x rays and physical examination were negative for signs of peritonitis or perforation (Figure 2). Therefore, patient's condition was managed conservatively with broad spectrum IV antibiotics (clindamycin, meropenem, vancomycin, and micafungin), proton pump inhibitors (PPI), and fluid resuscitation. He was discharged home on oral PPIs 6 days after hospitalization.

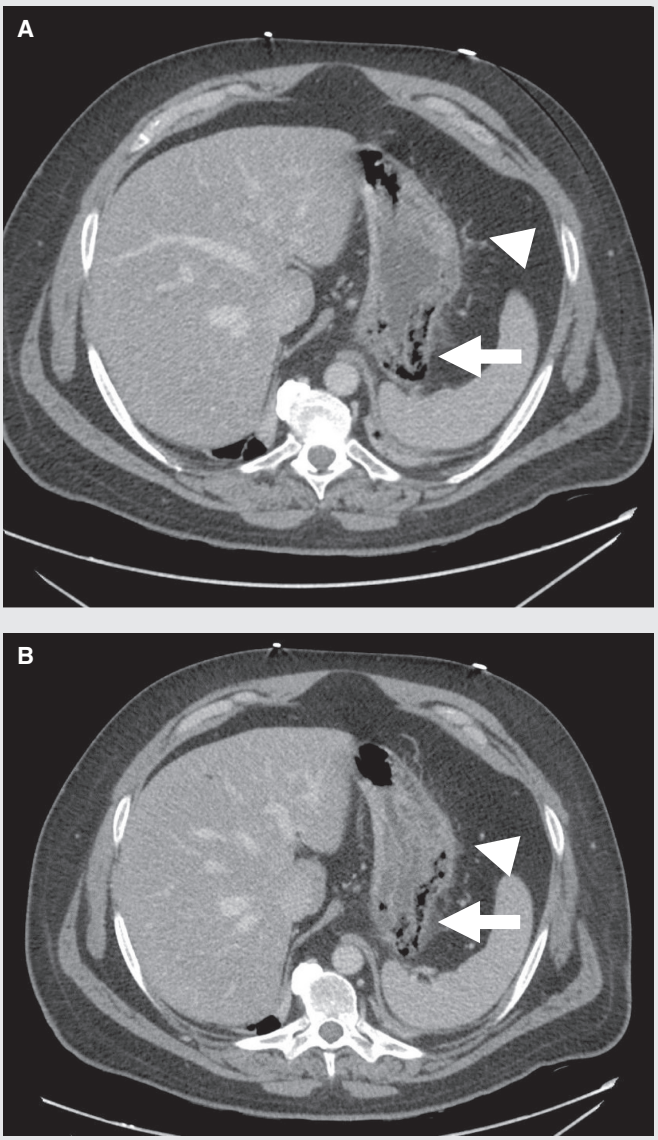

Figure 1A and B. Axial computed tomographic images of the abdomen and pelvis with contrast show intramural gas in the gastric fundus and greater curvature (arrow) consistent with emphysematous gastritis. Pointer showing mild perigastric inflammatory fat stranding.

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DOI: 10.12746/swrccc.v9i40.885

Figure 2. Abdominal x-ray with no signs of intestinal perforation or free intraperitoneal air.

Discussion

Emphysematous gastritis (EG) is a rare form of gastritis characterized by presence of gas in the gastric wall.[2] Up to June 2014, there has been 59 EG adult cases reported in literature.[6] Emphysematous gastritis is more commonly caused by gas producing organisms, including *Streptococcus, Clostridium* and *Enterobacter* species, *Escherichia coli, Staphylococcus aureus, Klebsiella pneumonia, Pseudomonas aeruginosa*, and *Candida* species.[1] Risk factors include any disruption of the gastric mucosal barrier, including prior abdominal surgery, caustic ingestion, use of NSAIDS, alcohol abuse, immunosuppressive status (diabetes, renal failure), and long-term steroid use.[2] Emphysematous gastritis is a potentially fatal disease that carries a mortality rate of 55–61% with systemic toxicity with or without hematemesis and melena as common presentation.[5] Computed tomography is the gold standard for diagnosis with demonstration of intramural gas in the stomach.[3] Management involves bowel rest, PPIs, IV fluid resuscitation and broad-spectrum antibiotics.[4] Surgery is recommended in cases of clinical deterioration in patients who fail conservative therapy or present with peritonitis.[5]

This case of emphysematous gastritis in a middle-aged male had no clear incident event. Gastric vasoconstriction from methamphetamine abuse possibly caused gastric ischemia with secondary infection and gas invasion. Patient also had a colostomy seven months prior and a history of CHF which could contribute to decreased blood flow. No organism was identified; however, no organisms are identified in up to 42.5% of cases.[4] Non-operative treatment has demonstrated lower mortality rate compared with surgical intervention.[6]

Keywords: emphysematous gastritis, gastric perforation, peritonitis, GI bleed

Article citation: Morataya C, Creed K, Del Rio-Pertuz G, Cavazos A, Attaya E. Emphysematous gastritis in a patient with an acute gastrointestinal bleed. The Southwest Respiratory and Critical Care Chronicles 2021;9(40):79–81
From: Department of Internal Medicine (CM, KC, GRP, AC), Texas Tech University Health Sciences Center, Lubbock, Texas; Department of Radiology (EA), University Medical Center, Lubbock, Texas
Submitted: 6/21/2021
Accepted: 7/2/2021
Reviewer: Mohamed Attaya MD
Conflicts of interest: none

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