

## Letters to the Editor

### Emphysematous gastritis associated with portal venous gas: Medical management to an infrequent acute abdominal pain

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*Key words: Emphysematous gastritis. Medical management. Portal venous gas.*

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Dear Editor,

Emphysematous gastritis is an infrequent cause of acute abdominal pain. Mortality ranges between 60-80%, requiring early diagnosis and intensive medical treatment to reduce morbidity and mortality.

#### Case report

An 85-year-old male with a past medical history of hypertension, cardiomyopathy hypertensive, chronic auricular fibrillation, ischemic stroke without sequels, recurrent respiratory infections and aspiration pneumonia, presented to Emergency Department with hip fracture after accidental fall. He was operated 3 days after correcting the coagulation index. The day after, the patient presented respiratory difficulty and low level of consciousness, due to pneumonia and he was treated with antibiotics. After 3 days, it was evident respiratory improvement, but he presented acute abdominal pain, associated with bloating and vomiting.

The abdominal radiography showed gas within greater gastric curvature wall (Fig. 1). The computed tomography scan showed diffuse and circumferential air within gastric wall extended to low esophagus, small amount of pneumoperitoneum adjacent



Fig. 1. The abdominal radiography: Gas within greater gastric curvature wall.

to lesser gastric curvature, portal venous air and pneumomediastinum adjacent to low esophagus, suggesting emphysematous gastritis (Fig. 2).

The patient was treated with broad spectrum intravenous antibiotic, parenteral nutrition, inhibitors of proton pump and nasogastric tube. Ischemic etiology was ruled out when there was not evident arterial filling defects in computed angiotomography. After 11 days, a new computed tomography scan showed absence of esophageal and gastric pneumatosis (Fig. 2) and complete collapse of left lung. It was made a therapeutic bronchoscopy to remove secretions and mucous plugs. Restoration of airway

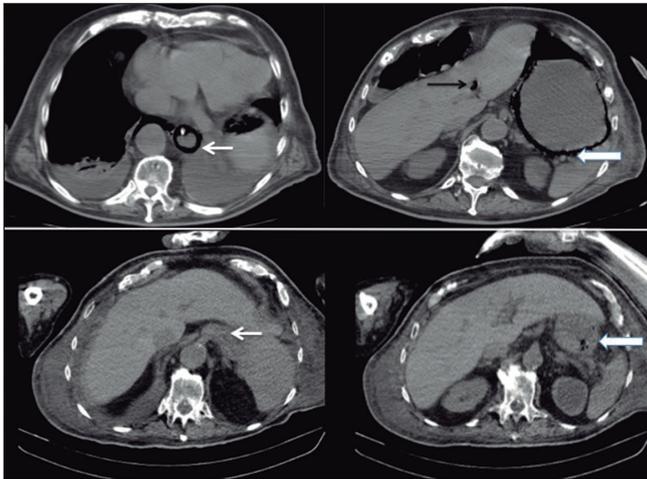


Fig. 2. Upper images: Computed tomography scan. Diffuse and circumferential air within gastric wall extended to low esophagus, pneumoperitoneum adjacent to lesser gastric curvature, portal venous air and pneumomediastinum. Images below: Computed tomography scan after 11 days. Absence of esophageal and gastric pneumatosis and complete collapse of left lung.

patency and lung expansion was achieved. Antibiotic therapy was finished after 14 days and feeding was started successfully. After 96 hours, the patient showed respiratory difficulty and clinical worsening, causing his death.

## Discussion

Air within the wall is a probable condition in abdominal organs, being less frequent in stomach (1). It is necessary a differential diagnosis between gastric emphysema and emphysematous gastritis (2), being completely different etiology, symptoms, prognosis and treatment. Gastric emphysema is caused by damage to the gastric mucosa; it is typically asymptomatic and resolves spontaneously. Emphysematous gastritis is caused by invasion of gas-producing bacteria through the stomach wall; it has a severe prognosis, high probability of complications and high mortality rate of 60% (1-5) (> 75% when associated to portal venous air) (3).

Gastric pneumatosis has different etiologies as mechanical (2,3,6), pulmonary (3), ischemic or infection causes [*Escherichia coli*, *Enterobacter spp*, *Pseudomona aeruginosa*, *Clostridium perfringens* (2-4), *Staphylococcus aureus*, *Klebsiella pneumoniae*, *Streptococcus*, *Clostridium welchii* (1,7), *Sarcina ventriculi* (8), *Mucormycosis* (5) y *Candida albicans* (9)]. Infection is stimulated by several factors [diabetes (5), immunocompromise, renal failure, pulmonary pathology, neoplasm, pancreatitis (10),

phytobezoar (5), major abdominal surgery (9), non-steroidal anti-inflammatory drug treatment or long term steroid use, alcohol abuse or caustic ingestion (1)].

Symptoms are frequently abdominal pain, nausea, vomiting or hematemesis, associated with fever, chills, tachycardia, tachypnea and toxic appearance (2,3).

The treatment is bowel rest and total parenteral nutrition, broad-spectrum antibiotic despite not isolating microorganisms (4); it may be associated antifungal therapy (5).

Surgical treatment is avoided in acute phase due to tissue friability (3), being necessary in septic status persistence or perforation (2,3), and in late strictures [present in 20% of cases (3,5)].

Our patient presented complete radiologic resolution after medical management, despite the presence of portal venous gas and its worst prognosis. The demise was probably due to an aspiration after oral feeding.

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