



Rare Case of Successful Conservative Management of Emphysematous Gastritis Presenting with Portal Venous Gas and Pneumobilia

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Abstract

Here we describe the case of a 62-year-old female who presented with emphysematous gastritis with portal venous gas and Pneumobilia on subsequent imaging. The patient reported two weeks of vague abdominal pain and vomiting. On presentation to our institution's emergency department, she was hemodynamically stable with a rather benign abdominal exam. Thus, we elected for conservative management with high clinical concern for decompensation and low threshold for operative intervention.

Keywords: Emphysematous gastritis; Pneumobilia; Portal venous gas

Introduction

Air in the gastric wall is a rare and concerning finding. It can be introduced into the mucosa by abdominal trauma, ischemia, gastroduodenal surgery, corrosive ingestion, or chronic obstructive pulmonary disease. It can be classified as emphysematous gastritis, gastric emphysema, or gastric pneumatics. Emphysematous gastritis must be differentiated from the others due to its severe prognosis, high probability of complications, and a mortality rate of up to 60% despite intensive treatment reported in the literature (>75% when associated with portal venous gas). This case describes the successful conservative management of an elderly woman with emphysematous gastritis with portal venous gas and Pneumobilia.

OPEN ACCESS

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Received Date: 16 Dec 2019

Accepted Date: 24 Jan 2020

Published Date: 30 Jan 2020

Citation:

Foster Do P. Rare Case of Successful Conservative Management of Emphysematous Gastritis Presenting with Portal Venous Gas and Pneumobilia. *Ann Surg Case Rep.* 2020; 3(1): 1025.

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Case Presentation

A 62-year-old female presented to our institution with vague, diffuse abdominal pain. Her past medical history was significant for chronic kidney disease stage III and treatment for left sided inflammatory breast cancer in the distant past. Her pain had been ongoing for one month, which she attributed to a change in her medications, but had significantly worsened over the past three days with associated nausea, vomiting, and hematemesis. She was hemodynamically stable on admission. Her abdomen was tender in the epigastrium but otherwise soft and non-distended. Laboratory studies in the emergency department were significant for a leukocytosis of 17,700 and an elevated CPK of 202. Subsequent Computed Tomography of her abdomen and pelvis demonstrated gastric Pneumatosis and portal venous air (Figure 1). The patient was placed on Piperacillin/Tazobactam, made nil per os, and admitted to the Intensive Care Unit for close monitoring with serial abdominal examinations. She was additionally placed on Carafate elixir and intravenous Pantoprazole. On hospital day two, laboratory studies revealed that her leukocytosis had improved. Upper

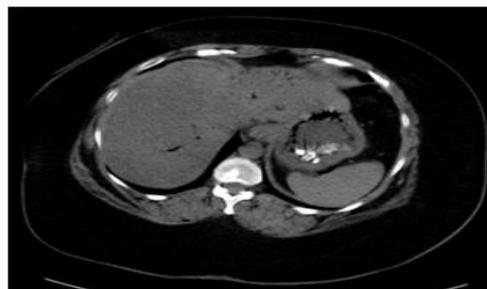


Figure 1: CT Demonstrating Diffuse Gastric Pneumatosis with Portal Venous Gas.



Figure 2: Upper Endoscopy demonstrating diffuse ulcerative gastritis.



Figure 3: CT Demonstrating Diffuse Gastric Pneumatosis with Pneumobilia.

endoscopy showed diffuse continuous erosive ulcerative gastritis with mucosal ischemia and contact bleeding (Figure 2). Multiple stomach biopsies showed reactive Gastropathy with mucosal erosion without intestinal metaplasia or dysplasia. Subsequent cultures revealed gas forming bacteria in the gastric wall. She underwent a repeat enhanced Computed Tomography Angiography to assess for vasculature abnormality that could explain her symptoms (Figure 3). This revealed improvement of portal venous gas with stable gastric wall edema but was otherwise unremarkable. Additionally, at this time, her abdominal pain had resolved. She was started on a clear liquid diet, which she tolerated and was transferred out of the ICU to the surgical floor. On hospital day three, she was discharged home after tolerating a general diet, and with complete resolution of her presenting symptomatology.

Discussion

Emphysematous gastritis is characterized by air in the stomach in association with acute infection from gas forming organisms such

as *Escherichia coli*, *Proteus vulgaris*, *Clostridium perfringens*, and *Staphylococcus aureus* [1]. Affected individual may present with an acute fulminating illness characterized by severe abdominal pain, hematemesis, tachycardia, fever, and shock. Radiographically, it is characterized by multiple streaks, bubbles, or mottled collections of gas in the wall of the stomach, silhouetting the gastric shadow on abdominal radiographs [2]. Our patient was described as not only having the radiographic imaging usually associated with emphysematous gastritis, but also the finding of portal venous gas, which is very rare and difficult to explain. Air in the gastric wall without a source of infection is described as gastric emphysema. In contrast to emphysematous gastritis, gastric emphysema is characterized by long, linear collections of intramural gas that extend circumferentially around the stomach. In gastric emphysema, gas is thought to enter the wall of the stomach via mucosal tears caused by increased intraluminal pressure [3]. Lastly, gastric Pneumatosis is a rare form of Pneumatosis intestinalis in which multiple gas-filled cysts or blebs are found in the wall of the stomach. When present in the stomach, the gas-filled intramural cysts may be indistinguishable from the bubbly gas collections associated with emphysematous gastritis. This case demonstrates both a difficult to explain and rare presentation in which a patient was found to have not only the usual associated radiographic imaging of emphysematous gastritis, but also concomitant portal venous gas. To our knowledge, the successful conservative management of this phenomenon has yet to be described in the literature.

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