International Journal of Scientific Reports
Sulaimani M et al. Int J Sci Rep. 2017 Jan;3(1):19-21
http://www.sci-rep.com
pISSN 2454-2156 | eISSN 2454-2164

DOI: http://dx.doi.org/10.18203/issn.2454-2156.IntJSciRep20164844

Case Report

Emphysematous gastritis: a case report

Mohammed Sulaimani[1], Abdulaziz Rashed Alshehri[1], Mohammed Hmoud[1]*, Najat Waggas[2], Ghaleb Aboalsamh[3]

[1]King Saud bin Abdulaziz University for Health Sciences, Jeddah, Kingdom of Saudi Arabia
[2]Ibn Sina National College of Medical Studies, Jeddah, Kingdom of Saudi Arabia
[3]Department of General Surgery King Abdulaziz Medical City – National Guard Health Affairs, Jeddah, Kingdom of Saudi Arabia

Received: 12 December 2016
Revised: 24 December 2016
Accepted: 27 December 2016

***Correspondence:**
Dr. Mohammed Hmoud
E-mail: drhmoodm@gmail.com

ABSTRACT

Emphysematous gastritis (EG) is a rare disease entity related to infection of the gastric wall. It is caused by gas-forming pathogens including *Enterobacter* species, *Clostridium perfringens* and others. EG patients clinically present with symptoms similar to acute abdomen and can have a mortality that can reach up to 80%. Alcoholism was identified as a risk factor for such a disease. Different diseases like diabetes mellitus, ulcerative colitis and use of nonsteroidal anti-inflammatory agents were found to be associated with EG. To date, no clear guidelines regarding EG management, however, early detection and management is crucial to prevent related deaths. In the acute setting, the role of surgery is limited. Surgical interventions might be needed if obstruction of gastric outlet or perforation ensues. Fifty six years old male, heavy smoker, alcoholic with a history of ischemic heart disease, presented to Emergency Department with a complaint of severe epigastric abdominal pain for two days. The patient was vitally stable, conscious, oriented, however, looks in severe pain. His lab investigations were within normal ranges. Computed tomography (CT) of the abdomen was consistent with emphysematous gastritis. To our knowledge, this is the first case of emphysematous gastritis reported in Saudi Arabia using only radiological modality.

Keywords: Emphysematous gastritis, Epigastric abdominal pain, Computed tomography

INTRODUCTION

Emphysematous gastritis (EG) is a rare infection of the gastric wall with less than 100 cases reported in the English literature.[1] It is caused by gas-producing organisms. It has a mortality rate that ranges from 60% to 80% despite early aggressive treatment.[2] Patients present with symptoms of acute abdomen, so an early diagnosis is crucial. To the best of our knowledge, we present the first reported case in Saudi Arabia using only a radiological modality.

CASE REPORT

Fifty six years old male, heavy smoker, alcoholic with a history of ischemic heart disease, presented to emergency department with a complaint of severe epigastric abdominal pain for two days. The pain was stabbing in nature, associated with heavy meals, nausea and vomiting, and responding well to pain killers. No history of diarrhea, constipation, upper nor lower GI bleeding, gallstones, regular medication, blood transfusion nor fever were noted.

Upon arrival, he was vitally stable (blood pressure 167/99 mmHg, heart rate 70 beats/min, body temperature 36.0 ℃, respiratory rate 20 breaths/min), conscious, alert, oriented, looks in pain. Abdomen was soft and lax. Superficial palpation showed epigastric area tenderness, while deep palpation revealed generalized tenderness. Murphy sign was negative. Other physical examination and review of systems were unremarkable.

Laboratory investigations showed a high white blood cell count of 24.4 $x10^9$/L (reference range 4-11$x10^9$/L) with neutrophils predominance of 21.35 $x10^9$/L (reference range 2.0-7.5$x10^9$/L), with normal hemoglobin and platelets. High C- reactive protein (CRP) of 159.8 mg/L (reference range 0.0-5.0 mg/L), Erythrocyte sedimentation rate (ESR) of 40 mm/hr (reference range 0.0-15 mm/hr), and normal amylase 41 U/L, (reference range 31-118 U/L). Electrolytes, kidney function, cardiac enzymes, coagulation profile and liver profile were all within normal except for a slight rise in alkaline phosphatase 128 U/L (reference range 39-114 U/L). Blood and urine cultures did not grow any organism.

The Initial differential diagnoses were severe gastritis, pancreatitis or biliary colic. An enhanced multi-axial cut of CT abdomen and pelvis with coronal and sagittal reformats as shown in Figure 1 ruled out acute pancreatitis & bowel ischemia, however, it was highly suggestive of emphysematous gastritis.

Figure 1: CT of the abdomen demonstrating gastric wall thickening with intramural gas forming the appearance of irregular bubbles.

The patient was admitted under the care of gastroenterology and general surgery. The patient was kept on nil per os protocol and was started on intravenous (IV) fluids and piperacillin/tazobactam antibiotic (IV 3.375 g every 8 hours) for the duration of admission. Surgical intervention was not needed due to absence of perforation, bowel ischemia or deteriorating sepsis.

The patient was discharged against medical advice after three days when he clinically improved, with complete resolution of pain, nausea and vomiting, without any pain or anti-emetic medications. No other CT was done for him, and he was discharged on ciprofloxacin, metronidazole and esomeprazole. Although the patient did not show up in the clinic afterwards for follow up, he also did not show up in the emergency department even though it is the only hospital he has a health insurance in. Unfortunately, we cannot know for certain whether the patient remained asymptomatic or deteriorated.

DISCUSSION

Emphysematous gastritis (EG) is a rare variant of phlengmonous gastritis. EG is a very rare disease with less than 100 cases reported in the English literature. It was first described as a pathological entity by Fraenkel in 1889 while the first radiological diagnosis was first made by Weens in 1946.[3] Since then, it has been noted to have high mortality, that can reach up to 62%.[1]

EG is caused by gas-forming bacteria. These organisms produce air and diffuse inflammation within the stomach wall.[4-6] The most common organisms isolated from reported cases of EG were Enterobacter species, Staphylococcus aureus, Clostridium perfringens, Escherichia coli, Pseudomonas aeruginosa, and Candida albicans.[7,8] EG should be differentiated from gastric emphysema, a condition which describes the similar feature of air within the wall of the stomach but without the association of bacterial infection and with a more benign and self-limiting course.[7,8]

Alcohol abuse was found to be a risk factor in 22% of the cases reported.[2] Conditions like diabetes mellitus, hepatitis, ulcerative colitis and peptic ulcer disease were more common among the reported cases. Malignancies, abdominal surgeries, chronic use of anti-inflammatory drugs also were found to be common risk factors for EG.[1] EG diagnosis is usually made on the basis of radiological imaging in correlation with the clinical presentation. CT scan is considered to be the most accurate modality to diagnose EG. It typically shows gastric wall thickening with intramural gas. This gas forms irregular bubbles that are usually present around the fundus and greater curvature.[2,9]

Early detection and treatment is crucial in preventing EG-related deaths. The early institution of IV fluids, appropriate nutrition, and antibiotics - with both anaerobes and gram negative bacilli coverage- are considered the mainstay of treatment.[5,10] Apparently the optimal duration of treatment remains based on the

clinical response and the resolution of symptoms however there is no clear guidelines due to the rarity of this condition. In addition, surgery does not have a role during the acute setting of this condition. Surgical management, if needed, is usually reserved for cases were the infection resolved and the patient developed a fibrosis related obstruction or perforation.[6,8,9]

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES

1. Iannuzzi J, Watson TJ, Litle VR. Emphysematous gastritis: A young diabetic's recovery. Int J Surg Case Rep. 2012;3:125–7.
2. Iqbal M, Ishtiaq O, Akhtar A, Chaudery Y, Khizar B. Empysematous Gastritis - a case report with literature review. J Pak Med Assoc. 2006;56(12):605-7.
3. Al-Jundi W, Shebl A. Emphysematous gastritis: Case report and literature review. Int J Surg. 2008;6:63-6.
4. Takano Y, Yamamura E, Gomi K, Tohata M, Endo T, Suzuki R, et al. Successful Conservative Treatment of Emphysematous Gastritis. Internal Med. 2015;54:195-8.
5. Allan K, Barriga J, Afshani F, Davila R, Tombazzi C. Emphysematous Gastritis. Am J Med Sci. 2005;329(4):205-7.
6. Loi TH, See JY, Diddapur RK, Issac JR. Emphysematous Gastritis: A Case Report and a Review of Literature. Ann Academy Med. 2007;36:72-3.
7. Jehangir A, Rettew A, Shaikh B, Bennett K, Qureshi A, Jehangir Q. A case report of emphysematous gastritis in a diabetic patient: favorable outcome with conservative measures. J Community Hosp Intern Med Perspect. 2015;5:1-3.
8. Szuchmacher M, Bedford T, Sukharamwala P, Nukala M, Parikh N, Devito P. Is surgical intervention avoidable in cases of emphysematous gastritis? A case presentation and literature review. Int J Surg Case Rep. 2013;4:456–9.
9. Yusef D, Waran A, Vamvakiti E. A 16-year-old boy with emphysematous gastritis and oesophageal candidiasis. BMJ Case Reports. 2014;10:1-3.
10. Paul M, John S, Menon MC, Golewale NH, Weiss SL, Murthy UK. Successful medical management of emphysematous gastritis with concomitant portal venous air: a case report. J Med Case Reports. 2010;4:140-3.

Cite this article as: Sulaimani M, Alshehri AR, Hmoud M, Waggas N, Aboalsamh G. Emphysematous gastritis: a case report. Int J Sci Rep 2016;3(1):19-21.