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# A caustic ingestion consequence mistaken for gastric cancer: A case report

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## ABSTRACT

**INTRODUCTION:** This report is a case of a suicide attempt by bleach ingestion, mistaken for gastric cancer after oral contrast studies and esophagogastroduodenoscopy. We report this case to encourage physicians to take this etiology into consideration as part of differential diagnosis especially in front of a secretive patient.

**PRESENTATION OF CASE:** We report a case of a 38-year-old lady admitted for an acute onset of symptoms leading to a diagnosis of antral stenosis. Further workup which included endoscopic and surgical biopsies failed to reveal an underlying malignancy. After 24 days of inconclusive inpatient investigations, and due to failure of conservative treatment, distal gastrectomy was performed. Final pathology also revealed an absence of any signs of malignancy, and reported only inflammatory changes. One month after discharge, the patient confessed that she had attempted suicide by ingestion of corrosive agents before the symptoms started and wanted to keep the incident as a secret.

**DISCUSSION:** Gastric stenosis is seldom encountered in adult patients, however, it can occasionally result secondary to gastric ulcer disease, malignancies, foreign body ingestion, certain drugs or chemicals, or after endoscopic or surgical interventions. These etiologies do not usually cause acute gastric obstruction, and usually follow a more indolent course. Identification of an underlying etiology is mandatory to determine the proper medical or surgical treatment to relieve the obstructive symptoms.

**CONCLUSION:** We report this bizarre case to encourage physicians to keep this etiology in mind in otherwise unexplained gastric stenosis.

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## 1. Introduction

Gastric strictures causing gastric outlet obstruction (GOO) are an uncommon entity in adult patients, with multiple corresponding etiological factors. We report a curious case of acute GOO suspected to be secondary to gastric cancer. Despite extensive inpatient workup, no definite diagnosis was found. Only after gastrectomy did the patient reveal that she had attempted suicide by ingesting caustic agents.

This case was reported in line with Scare 2018 criteria [1].

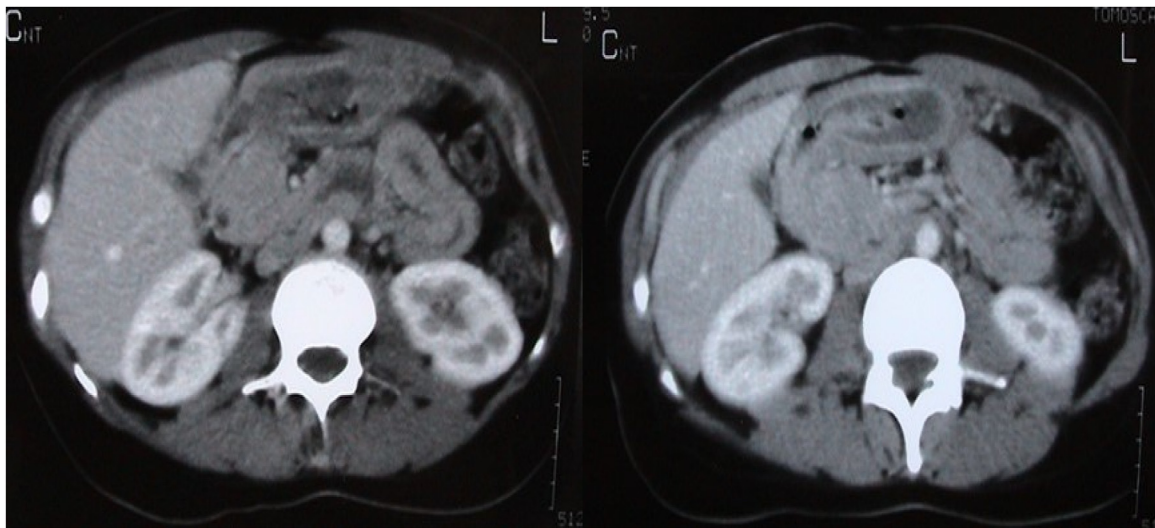
## 2. Case description

A 38 years old lady, smoker, with no significant medical or surgical history presented to our emergency department for epigastric pain associated with postprandial nausea and vomiting occurring for ten days. The patient declares that she had started losing weight forty-five days prior to presentation (around 10 Kgs). This was associated with a decreased appetite. Review of system otherwise was negative. On physical examination, her vital signs were within the normal range. Abdominal examination was unremarkable, and no abnormal findings were noted except for a yellow-white tongue.

An Esophagogastroduodenoscopy was done and showed a stenosing tumor of the antrum infiltrating the distal two-third of the stomach with a malignant appearance. Despite difficulty crossing the tumor, duodenal examination showed no abnormalities. Biopsies were taken and revealed helicobacter pylori gastritis with the absence of malignant cells. The patient was on started

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**Fig. 1.** Enhanced abdominal and pelvic CT showing gastric parietal thickening.



**Fig. 2.** An oral contrast study showing a fixed and constant narrowing at the level of antrum-pylorus, associated with rigidity of the gastric wall.

on antibiotics and proton pump inhibitors (PPIs) for helicobacter pylori.

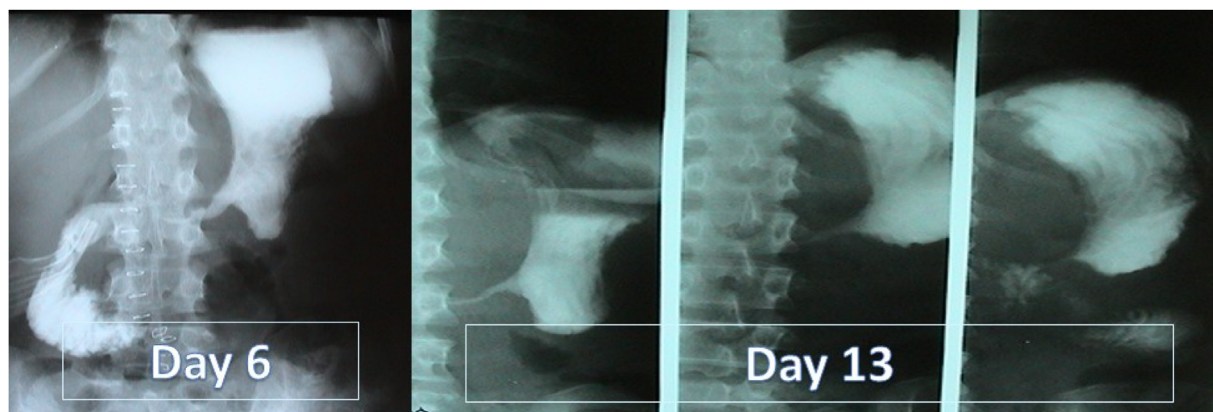
Still suspecting malignancy, an enhanced abdominal and pelvic CT scan was done and showed gastric parietal thickening. No parietal pneumatosis, no infiltration of peri-gastric fat, and no pneumoperitoneum and intraperitoneal fluids were seen (Fig. 1). Purified protein derivative (PPD) skin test was done to rule out primary gastric tuberculosis and was negative. An oral contrast barium study was then ordered and it showed a fixed and constant narrowing on several radiographs at the level of antrum-pylorus, associated with rigidity of the gastric wall extending over the distal half. These findings raised suspicion of gastric malignancy, specifically Linitis Plastica (Fig. 2).

Supportive treatment was continued, with nasogastric tube decompression and parenteral feeding, however, the patient's condition failed to improve. Ten days after admission, and due to high suspicion of malignancy and absence of a definite diagnosis, surgical biopsy by laparotomy was planned. During surgery, the stenosis at the level of antrum was palpable and had circumferential rigidity infiltrating the lesser curvature upward till 3 cm distal to the cardia. No perigastric infiltrates, adhesions or invasion were noted. A biopsy was taken to rule out lymphoma and a feeding jejunostomy was created by the primary surgeon. The anatomopathological report was identical to the prior biopsies, showing chronic ulcerative changes associated with chronic gastritis lesions and no signs of malignancy.

Post-operative supportive treatment continued without any improvement in obstructive symptoms. Follow up oral contrast studies on postoperative days six and thirteen showed the same findings without any improvement in the stenosis (Fig. 3).

On the fourteenth postoperative day (24th day after admission), and due to failure of medical treatment and absence of a definite diagnosis, the final decision to perform distal gastrectomy was taken. Intraoperatively, an extemporaneous examination of the resection edges was exempt from malignant cells. Reestablishment of digestive continuity was done using a Billroth II anastomosis. The final pathology report was of a chronic antral peptic ulcer, associated with peri-ulcerous chronic gastritis. Foreign body granulomas were also seen in the specimen. Again no malignant cells were identified. The patient recovered quickly postoperatively and was discharged home a few days later without complications. The true etiology that caused her condition was never found during her hospital stay.

One month later, we received a phone call from the patient's spouse informing us that his wife was severely anxious and threatened that she will repeat what failed to kill her the first time. She subsequently confessed that she had attempted suicide by ingesting bleach right before she developed GOO. She had decided to keep the incidence a secret throughout her stay, even when invasive surgery was planned. This was the true etiology behind the presentation.



**Fig. 3.** A Follow up with oral contrast study at day 6 and day 13 post operation, no improvement.

### 3. Discussion

Gastric outlet obstruction (GOO), is a rare entity with multiple related etiologies that are separated into two main groups according to their histological growth pattern [2]. The benign etiologies of GOO include peptic ulcer disease, hypertrophic pyloric stenosis, certain drugs, caustic ingestion, infectious and inflammatory causes, iatrogenic causes, and some invasive interventions. On the other hand, malignant causes include neoplasms arising from the stomach, pancreas, duodenum, gallbladder, and bile ducts, along with gastric lymphoma and metastatic neoplasms [2].

Today, gastric outlet obstruction is becoming an uncommon complication of peptic ulcer disease with the emergence of effective treatments for helicobacter pylori and the usage of proton pump inhibitors. In contrast, the incidence of gastric malignancies is increasing [2].

Multiple imaging modalities can be used to identify the cause of GOO, however, endoscopy seems to be the most beneficial examination, allowing reliable elimination of malignancy [2]. Oral barium studies are becoming less popular and are largely replaced by endoscopy and other advanced imaging modalities. Nevertheless, it remains a safe, non-invasive, and cost-effective technique and is still considered an accurate modality in the diagnosis of gastric malignancies with high specificity and sensitivity [3].

The main initial step in the management of GOO is adequate fluid resuscitation and correction of electrolyte disturbances followed by nasogastric decompression. The final treatment depends on the underlying etiology and may range from simple supportive management to surgical intervention [2].

Few studies were done about caustic ingestion as a cause of GOO, one of which reported that the median age of patients was 53 years, with female predominance (60% of cases), and an association of psychiatric disease in 77% of cases. Ingestion was voluntary in 83% of cases and was considered as a suicidal attempt [4].

Acutely, caustic ingestion leads to small vessel thrombosis and necrosis, followed by shedding of the mucosa. Scar formation and tissue retraction eventually start by the third week of ingestion leading to strictures [5]. Both acidic and alkaline chemicals are implicated and can cause GOO up to 60% of cases [2]. Strictures develop at the level of the esophagus in 95% of cases [5], in contrast to our case, where the obstruction was at the gastric outlet. When the stomach is involved, achlorhydria and, rarely, carcinomatous changes may be found in addition to the strictures [5]. These may be the result of the accumulation and stasis of the corrosive agent in the antropyloric segment for an extended time resulting in stricture [5].

Gastric strictures are classified into five types according to their location and extension. The 4th type is the “Linitis-Plastica-like”

appearance [5], which consists of obvious narrowing of the lumen of the distal body and pyloric antrum, associated with limited distensibility [3] and an obvious decrease of gastric volume [5]. The resemblance with Linitis Plastica, like our case, was reported once more than thirty years ago in a patient who had also ingested corrosive agents [6].

The management of caustic gastritis ranges from supportive to surgical treatment. Mensier et al. showed that an enhanced CT of the thorax, abdomen, and pelvis with has an essential role in deciding management, providing evidence of mucosal perfusion states, which may mandate surgery if defects are present [4].

### Declaration of Competing Interest

This article has no conflict of interest with any parties.

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### Ethical approval

The study type is exempt from ethical approval.

### Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images.

A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

### Author contribution

Writing the paper: Etienne El-Helou, Mersad Alimoradi.  
Data collection: Hassan Sabra, Jessica Naccour.  
Supervision: Henri Bitar, Marwan M Haddad.

### Registration of research studies

1. Name of the registry: N/A
2. Unique identifying number or registration ID: N/A
3. Hyperlink to your specific registration (must be publicly accessible and will be checked): N/A

**Guarantor**

Dr Henri Bitar.

**Provenance and peer review**

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