

Case report



GASTRIC ULCER PENETRATING TO THE DUODENOJEJUNAL FLEXURE – MANAGEMENT AND PITFALLS. CASE REPORT AND REVIEW OF THE LITERATURE.

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ABSTRACT:

Introduction: The penetration into adjacent organs is a classical complication of peptic ulcer despite being less frequent than the other complications. The current work presents a rare case of gastric ulcer penetrating the duodenojejunal flexure and discusses the diagnostic difficulties, pitfalls, and current treatment strategy.

Case report: A 63-years-old woman was admitted complaining of intermittent black stools defecations, and a weight of 44 kg. The referral gastroscopy revealed a 10 cm ulcer on the posterior wall of the stomach. The histology demonstrated severe gastritis with atypical cells. The hemoglobin level was 88g/l. The patient was scheduled for elective resection for suspected gastric cancer. The intraoperative finding was completely different – there was an ulcer approximately 4-5 cm in diameter infiltrating the transverse mesocolon and duodenojejunal flexure. The case was considered T4 cancer and we decided against elective gastrectomy. The postoperative CT showed an ulcer penetrating the duodenojejunal flexure. The second gastroscopy found an ulcer with a size of 3-4 cm. The multiple biopsies showed exacerbated chronic peptic ulcer with H. pylori infection, which was treated with proton pump inhibitors and antibiotics. The follow-up gastroscopy four months later demonstrated shrinkage of the ulcer to 15 mm with complete epithelization. One year later she gained 23 kg and was free of complaints.

Conclusion: Penetration and fistulization to the duodenojejunal flexure are uncommon but possible complications of peptic ulcer disease. They are not an absolute indication for surgery. Decision-making should take into account the clinical presentation, patient age, and comorbidity

Keywords: gastric ulcer, penetration, duodenojejunal flexure, management, pitfalls,

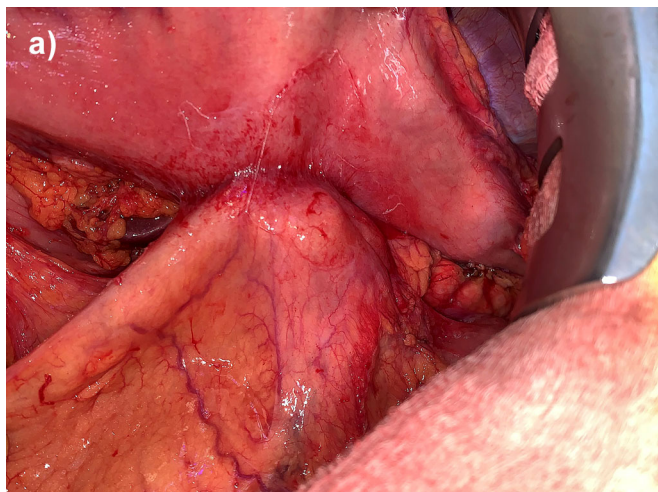
INTRODUCTION

The prevalence of peptic ulcer disease (PUD) is 5-10% with an annual incidence of 0.1-0.3%. [1] The implementation of the proton pump inhibitors and H. pylori eradication therapy has significantly reduced the rate of hospitalization and surgical treatment of PUD. The penetration into adjacent organs is a classical complication of PUD despite being less frequent than bleeding, perforation, and gastric outlet obstruction. Duodenal ulcers usually penetrate the pancreas, while gastric ulcers affect the liver, transverse colon, and occasionally the duodenum. [2-5] Herein we present a rare case of gastric ulcer penetrating the duodenojejunal flexure and discuss the diagnostic difficulties and pitfalls.

CASE REPORT

A 63-years-old woman was admitted complaining of intermittent black stools defecations, upper abdominal pain, and weight loss of approximately 10 kg for a year. The weight was 44 kg. There was no remarkable past history. The gastroscopy revealed a 10 cm ulcer on the posterior wall of the stomach with histology demonstrating severe active gastritis with atypical cells suspicious of gastric cancer. The outpatient CT showed a thickened gastric wall and enlarged lymph nodes up to 2 cm in diameter along the lesser curvature. Laboratory was normal except for a hemoglobin level of 88g/l. An elective resection for suspected gastric cancer was scheduled. The intraoperative finding completely differed from the preoperative scenario – there was an ulcer with a size of 4-5 cm in diameter infiltrating the transverse mesocolon and duodenojejunal flexure and indistinguishable from the lower border of the pancreas (Fig. 1. a, b). The lymph nodes were normal.

Fig. 1. a, b. An intraoperative view – a lesion of the posterior wall of the stomach infiltrating the transverse mesocolon and duodenojejunal flexure.

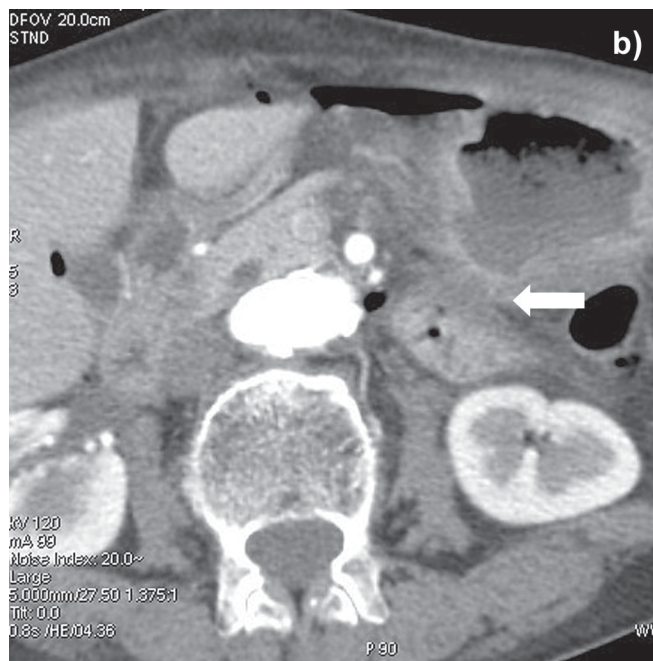
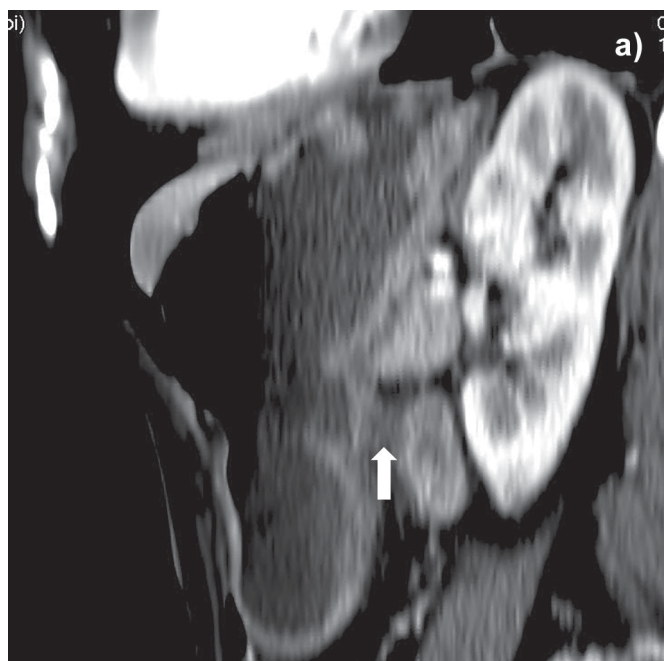


The case was considered T4 cancer. Together with the poor performance status (severe anemia and cachexia), we decided against elective gastrectomy. The right gastric and upper nodes over the pancreatic body and tail were

taken for histological examination.

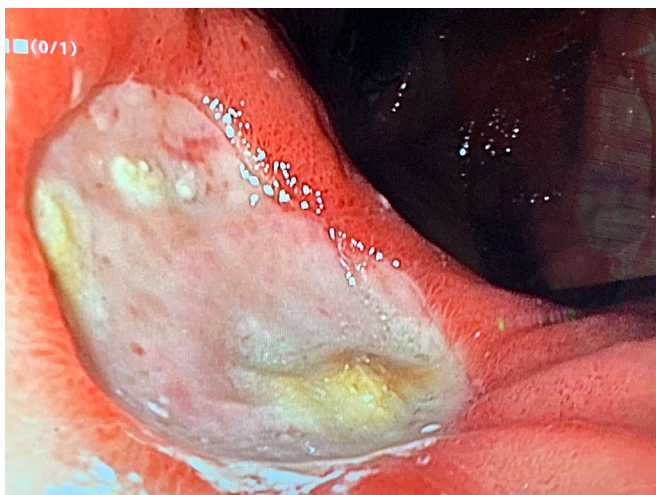
The CT was repeated and showed an ulcer penetrating the soft tissues around the duodenojejunal flexure without infiltration of the bowel or the pancreas (Fig. 2. a, b).

Fig. 2. a, b. Postoperative CT (arrows).



The second gastroscopy, however, revealed an ulcer with a size of 4 cm (Fig. 3)

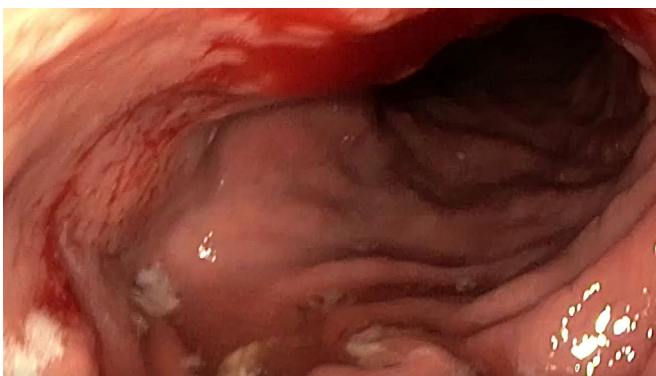
Fig. 3. The endoscopic view before the treatment.



The multiple biopsies showed exacerbated chronic PUD and *H. pylori* infection. Immunohistochemistry of CK AE1/AE3 did not show atypia or cancer.

Based on the postoperative workup and the effectiveness of the modern anti-ulcer therapy we applied a conservative approach with a diet, proton pump inhibitors, and *H. pylori* eradication. Four months later she gained 10 kg. Hemoglobin levels reached 122g/l. The follow-up gastroscopy after 4 months demonstrated a reduction of the ulcer size from 40 mm to 15 mm with almost complete epithelization (Fig. 4).

Fig. 4. The endoscopic view four months later.



One year later she gained 23 kg and is free of complaints. She refused a follow-up gastroscopy and surgical treatment.

DISCUSSION

The modern medical treatment of PUD has led to a significant decrease in hospitalizations (30%), more pronounced for duodenal ulcers (37% vs. 20% in gastric ulcers). Bleeding is the most frequent complication (73%), followed by perforation (9%) and gastric outlet obstruction (3%). [6] Despite the decrease in hospitalizations for bleeding, the rate of perforation and obstruction remains steady. The exact rate of the penetration, however, remains unknown. In the view of pathogenesis, the penetration is considered a type of perforation but in another organ not in the free abdominal cavity.

[7] The affected organ depends mainly on the localization of the ulcer (pancreas, liver, small bowel, colon, splenic artery, pericardium). [8-12]

The fistula with an adjacent organ is a natural evolution of the penetration if the PUD is left untreated. The gastroduodenal fistulae are rare and few papers have been published in the literature. They are two main types. The so-called “double pylorus” (a fistula between the antrum and the first part of the duodenum) is the most common type. It is found in approximately 0.001-0.4% of all upper endoscopies. [5] The first description is attributed to Mohr (1842) who found on an autopsy a huge ulcer on the anterior wall of the stomach, penetrating the pancreas and fistulizing into the duodenal bulb. [13]

The fistulae with the third and fourth parts of the duodenum are extremely rare. Most commonly they originate from an ulcer of the posterior gastric wall. In 1847 Dittrich described the first case of a posterior ulcer with a floor consisting of the pancreas and fistula with a third of the duodenum. [13] In 1852 Cruveilhier described a similar case. In 1927 Monroe et al. presented a case of a woman, who underwent surgery due to vomiting, abdominal pain, and jaundice. They found a dense tumor of the posterior wall considered an inoperable gastric cancer with infiltration of the pancreas. The second surgery due to melena revealed dense adhesions around a covered perforation of the ulcer into the liver. They performed posterior gastro-jejuno anastomosis. The contrast imaging ten years later (due to persistent complaints) showed competent anastomosis and gastro-duodenal fistula, which was treated with medication.

Between 1914 and 1998 a total of 14 cases had been described in the literature. [4] Since then, three more cases were published. [14-16] Johansson et al. reported a case of a 91-year-old woman managed conservatively. [14] Culafic et al. demonstrated a case of gastrojejunal fistula treated via antrectomy and suture of the fistula. [15] In 2019 Mahmoud et al. described a case of pyloric stenosis, diagnosed preoperatively by gastroscopy, CT, and histology of moderate chronic atrophic gastritis. [16] During the surgery, they found a tumor of the major curvature with a size of 5x7 cm. After debridement, an ulcer with a diameter of 3 cm fistulizing to the fourth duodenal part was found. The authors performed an antrectomy with partial resection of the duodenum and an anastomosis between its third part and jejunum. This case demonstrated that gastroscopy and contrast CT are not sufficient for a correct diagnosis of the gastro-jejunal fistulae as in our case.

In certain cases, the fistulas can affect the jejunum distally to the ligament of Treitz. [14, 15] The ulcer localization (pre-pyloric in type I and posterior wall in type II fistula), women with asthenic habitus, and absence of mesenteric fat tissue are known risk factors that promote the penetration. The clinical manifestation of gastrojejunal fistulas is characteristic of PUD (specific abdominal pain, nausea, and upper GIT bleeding) in contrast to gastro-colonic fistulas (diarrhea, and symptoms related to the bypass of the small bowel – malnutrition and electrolytic balance disruption). [3]

Gastroscopy and multiple site biopsies have a pivotal role in the diagnostic algorithm to rule out gastric cancer, while CT and MRI are useful for the evaluation of the depth of the penetration. The differential diagnosis includes gastric and

colonic cancer, Crohn's disease, ulcerative colitis, and intestinal tuberculosis.

The gastroduodenal fistula is not an absolute indication for surgery in asymptomatic patients or absence of complications (intractable gastric bleeding, perforation, obstruction, or malignisation). Decision-making for surgery should take into account the clinical presentation, patient age, and comorbidity. Most of the published cases were treated by surgery, but medical treatment has its place. [4, 14] Similar to the present case, [4, 15] published cases (26.7%) were managed successfully by medication. When gastric cancer is ruled out, most cases can be treated with high doses of proton pump inhibitors and H. pylori eradication.

We are aware of the possible mismanagement of the present case – the first endoscopy, CT, and histology were misleading. However, the penetrating PUD can be accompanied

by the inconsistency of pre-and intraoperative diagnosis. This requires a flexible mind with a change of strategy according to the intraoperative findings. The careful tactic helps to avoid unnecessary and risky operations..

CONCLUSIONS

Penetration and fistulization to the duodenojejunal flexure is an uncommon but possible complication of peptic ulcer disease. They are not an absolute indication for surgery, especially in the background of modern medical treatment. Decision-making should take into account the clinical presentation, patient age, and comorbidity. The different extent of the resection in the case of cancer warrants maximal efforts for an exact preoperative diagnosis. The surgeon should be aware that the penetrating PUD can be accompanied by the inconsistency of pre-and intraoperative diagnosis.

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