



Benign Peptic Ulcer as a Cause of Gastrocolic Fistula

Rakahn Haddadin, MD¹, Danny Aboujamra, BS², Humzah Iqbal, MD³, George Trad, MD⁴, and Ahmed Ali, MD¹

¹Department of Internal Medicine, HCA Healthcare, MountainView Hospital, Las Vegas, NV

²St. George's University School of Medicine, University Centre Grenada, West Indies, Grenada

³Department of Internal Medicine, University of California San Francisco, Fresno, CA

⁴Department of Gastroenterology, HCA Healthcare, Southern Hills Hospital, Las Vegas, NV

ABSTRACT

Gastrocolic fistula is a rare complication and can occur in various conditions, most commonly gastric or colonic adenocarcinoma, followed by benign gastric ulcers secondary to nonsteroidal anti-inflammatory drug use. We report a case of an 82-year-old man with a benign peptic ulcer that led to a gastrocolic fistula, which was not associated with a history of nonsteroidal anti-inflammatory drug use or malignancy. The exact cause of this patient's gastrocolic fistula is unclear, but the patient's medical history of microscopic lymphocytic colitis may have increased his risk of fistula formation.

KEYWORDS: Gastrocolic Fistula; Peptic Ulcer; Stomach; Colon

INTRODUCTION

Gastrocolic fistula, an abnormal connection between the stomach and the colon, represents a rare yet severe gastrointestinal condition. This aberration typically arises as a complication secondary to various underlying factors, including malignancies or benign diseases affecting the gastrointestinal tract.¹ While relatively uncommon, gastrocolic fistulas manifest clinically through a spectrum of distressing symptoms, such as epigastric pain, feculent vomiting, diarrhea following meals, and in some instances, unintended weight loss and electrolyte imbalances.²

Despite its infrequency, when gastrocolic fistulas originate from benign conditions such as gastric ulcers, their occurrence becomes notably rarer, with only slightly over a 100 cases reported.³ Benign gastric ulcers give rise to gastrocolic fistulas, primarily attributed to the nature of the ulcerative process, which begins with local tissue damage and, with significant inflammation, progresses to erosion of gastric walls and extension into adjacent organs, such as the colon.³

CASE REPORT

Our patient is an 82-year-old man with a medical history of Parkinson disease, depression, hypertension, and microscopic lymphocytic colitis who presented to the emergency department with 4 days of poor oral intake along with intractable nausea and vomiting. The patient stated his symptoms were sudden in onset and associated with progressive diarrhea that worsened with oral intake. The patient denied any nonsteroidal anti-inflammatory drug usage. The patient's vitals on admission were within normal limits. All pertinent laboratory tests were within normal levels.

The patient had several prior visits for flares of diarrhea. In 2019, the patient was diagnosed with lymphocytic microscopic colitis from colonic biopsies. The patient opted for conservative management, which included dietary modifications. Since diagnosis, it is unclear if the patient has achieved complete remission.

A computed tomography of abdomen pelvis with contrast obtained on admission showed nonspecific, nondilated, fluid-filled loops of bowel and an area of ulceration involving the anterior gastric wall (Figure 1). The ulceration extended toward the adjacent transverse colon. Per oral contrast went directly from the stomach to the colon, bypassing the small bowel. In turn, the patient was

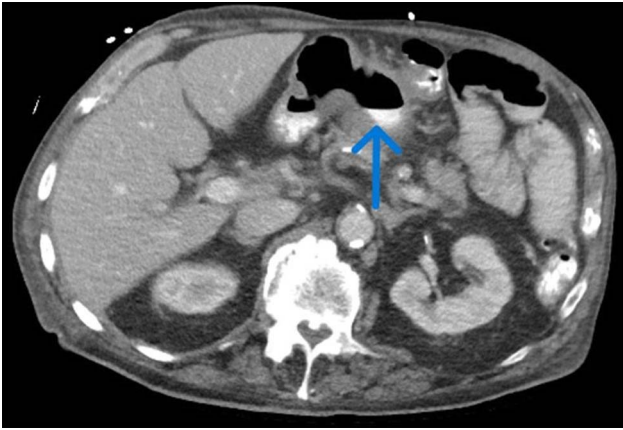


Figure 1. An area of ulceration involving the anterior gastric wall. The ulceration extends toward the adjacent transverse colon. Shows ulceration of the anterior gastric wall with fistulization.

having diarrhea along with fecal impaction, causing overflow diarrhea. The findings suggested developing fistulation between the stomach and the transverse colon.

Gastroenterology was consulted, and an esophagogastroduodenoscopy showed a normal esophagus and a large gastric ulcer along the angular incisure of the stomach with a central fistula (Figures 2 and 3). Biopsies were taken at the site. Biopsy results showed necroinflammatory debris consistent with an ulcer bed and no viable gastric mucosa. The rest of the duodenum up to the second portion was normal.

Surgery oncology was also consulted, given the initial concern for malignancy. Esophagogastroduodenoscopy and computed tomography findings were discussed between gastroenterology, surgery oncology, and the patient. Given the patient's symptoms and comorbid conditions, surgery was suggested as the treatment of choice. A nononcologic partial omentectomy, Billroth II gastrojejunostomy, enteroenterostomy, and

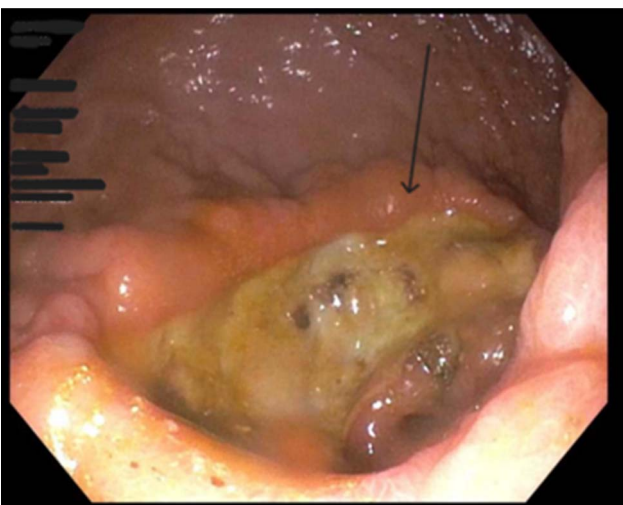


Figure 2. Esophagogastroduodenoscopy image of benign peptic ulcer. Shows ulcer.

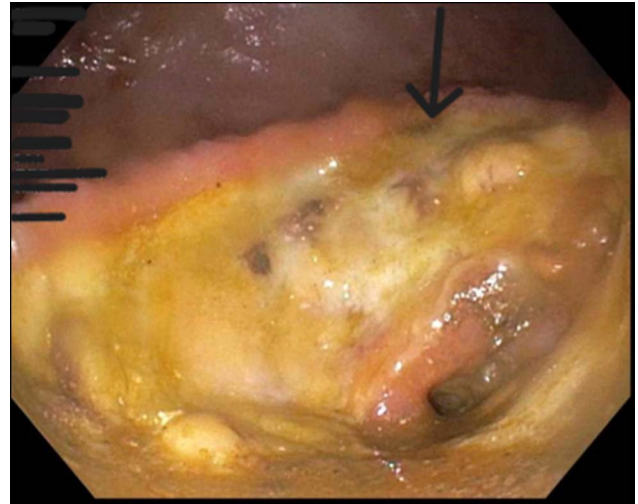


Figure 3. Esophagogastroduodenoscopy image of benign peptic ulcer. Shows ulcer.

segmental transverse colectomy with side-to-side isoperistaltic anastomosis were performed. Biopsies were taken from the transverse colon, stomach, distal gastrectomy, omentectomy, and peritoneal nodule. All results came back showing no evidence of malignancy.

Postoperatively, the patient was doing well and on a clear liquid diet with precautions and total parenteral nutrition. Total parenteral nutrition was weaned off once the patient was meeting their caloric needs. The patient only needed minimal pain control medications. Oral pantoprazole was given to reduce acid buildup. The patient was safely discharged to inpatient rehab and instructed to follow-up with the surgeon outpatient.

DISCUSSION

A gastrocolic fistula represents a direct communication between the stomach and the colon. The usual causes of a gastrocolic fistula come from malignancies that have progressed into an advanced stage.¹ In North America, the most common cause of gastrocolic fistula is colonic adenocarcinomas, whereas the most common cause in Japan and Asian countries is gastric cancer.⁴ The most common patient population to form a gastrocolic fistula from a benign condition is peptic ulcer disease in middle-aged women with a history of anti-inflammatory use.⁵ In rare cases, microscopic colitis may lead to severe complications, such as ulcers or colonic perforation.⁶ Given our patient's history and absence of known culprits of mucosal ulceration, we cannot entirely rule out the potential of microscopic colitis either directly contributing to or serving as a risk factor for gastrocolic fistula formation.

Regarding location, the most common site for these fistulas to occur is between the distal transverse colon and the greater curvature of the stomach.⁷ Our case shows a communication

between the anterior gastric wall and the adjacent transverse colon. When searching the literature, the work of Shaik et al was the only reported case that showed the anterior gastric wall to be involved in the gastrocolic fistula.³

There are 2 options for treatment: surgical and medical management.² In patients with benign gastrocolic fistulas, the usual management involves attempting medical management with parenteral nutrition support, acid-suppressive medication, and stopping any medication prone to causing digestive tract ulcers.⁸ Definitive treatment of gastrocolic fistula is surgical intervention.⁹ Radical en bloc resections seem to be the surgery of choice. Still, surgical intervention is unique for each patient and includes various types of reconstructing of the gastrointestinal tract with different approaches.⁹ A few reported cases in the literature show successful treatment of a gastrocolic fistula using a cardiac septal defect closure device, direct clipping, colonic stent placement, or wire-guided simultaneous dual scope approach.^{10–13} Our patient was successfully treated surgically and had an uneventful postoperative course after undergoing a robot-assisted laparoscopic partial omentectomy, Billroth II gastrojejunostomy, Braun enteroenterostomy, and segmental transverse colectomy with side-to-side isoperistaltic anastomosis.

In conclusion, this case report contributes to the limited pool of documented cases, emphasizing the need for increased awareness among healthcare practitioners regarding the potential benign causes of gastrocolic fistula and its associated presentations. We suggest future studies to determine the risk of gastrocolic fistulization in patients with microscopic colitis, when compared with the general population.

DISCLOSURES

Author contributions: R. Haddadin, D. Aboujamra, H. Iqbal, and G. Trad wrote the article; A. Ali edited the article; R. Haddadin is the article guarantor.

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Informed consent was obtained for this case report.

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REFERENCES

1. Cody JH, DiVincenti FC, Cowick DR, Mahanes JR. Gastrocolic and gastrojejunal fistulae: Report of twelve cases and review of the literature. *Ann Surg*. 1975;181(3):376–80.
2. Sur AS, Peters M, Sur HS, Adjepong S. Benign gastric ulceration as a cause of gastro-colic fistula. *J Surg Case Rep*. 2012;2012(2):7.
3. Shaik AS, Singh B, Haffejee AA. Gastrocolic fistula as a complication of benign gastric ulcer. *SAMJ*. 1999;89(9):1011–4.
4. Yin J, Zheng Z, Cai J, et al. Current diagnosis and management of malignant gastrocolic fistulas: A single surgical unit's experience. *Int J Clin Exp Med*. 2014;7(11):4123–30.
5. Soybel DI, Kestenberg A, Brunt EM, Becker JM. Gastrocolic fistula as a complication of benign gastric ulcer: Report of four cases and update of the literature. *J Am Osteopath Assoc*. 1978;77:684–8.
6. Miehke S, Verhaegh B, Tontini GE, Madisch A, Langner C, Münch A. Microscopic colitis: Pathophysiology and clinical management. *Lancet Gastroenterol Hepatol*. 2019;4(4):305–14.
7. Matsuo S, Eto T, Ohara O, Miyazaki J, Tsunoda T, Kanematsu T. Gastrocolic fistula originating from transverse colon cancer: Report of a case and review of the Japanese literature. *Surg Today*. 1994;24(12):1085–9.
8. Hong T-C, Wu M-S, Liou J-M. A rare case of gastrocolic fistula caused by benign gastric ulcer. *Adv Dig Med*. 2018;5(4):142–4.
9. Lee WJ, Horton KM, Fishman EK. Gastro-colic fistula due to adenocarcinoma of the colon: Simulation of primary gastric leiomyosarcoma on CT. *Clin Imaging*. 1999;23(5):295–7.
10. Malespin M, Gaspar JP, Boulay B. Palliation of a malignant gastrocolic fistula with the use of an atrial septal defect occlusion device. *Endoscopy*. 2014;46(Suppl 1 UCTN):E4.
11. Monkemuller K, Peter S, Alkurdi B, Ramesh J, Popa D, Wilcox CM. Endoscopic closure of a gastrocolic fistula using the over-the-scope-clip-system. *World J Gastrointest Endosc*. 2013;5(8):402–6.
12. Fernandes C, Pinho R, Proença L, Ribeiro I, Carvalho J. Palliation of a gastrocolic fistula secondary to colon cancer with a covered colonic stent using a simultaneous dual-scope approach. *Tech Coloproctol*. 2015;19(6):367–8.
13. Nici A, Hussain S, Rubin M, Kim S. Repair of a gastrocolic fistula using a wire-guided, simultaneous dual scope approach. *Endoscopy*. 2013;45(-Suppl 2 UCTN):E307–8.

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