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Gastrocolic fistula: a case report

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Introduction: Gastrocolic fistula (GCF) is a rarely reported complication of numerous diseases. When associated with malignancies, the prognosis is usually poor. The classic presentation includes diarrhea, feculent vomiting, and weight loss.
Presentation of Case: We hereby report the case of a patient who presented with weight loss and dyspepsia for 2 months, in the absence of diarrhea. Diagnosis of a GCF was made by performing a gastroscopy and a computed tomography scan. The biopsy taken during gastroscopy showed a lower tract gastrointestinal cancer, and the patient underwent surgical treatment by "en bloc" resection. After an anastomosis leak, he recovered well and underwent adjuvant chemotherapy. After a 3-year follow-up, the patient is alive and disease free.
Discussion: This case presentation, together with a literature review, underlines that variable symptoms and signs that can be associated to this rare condition. The role of new imaging techniques such as computed tomography scan, compared with barium enema, should also be evaluated in this setting. The absence of lymph-node involvement may predict a good prognosis.
Conclusion: GCF is a rare presentation of malignant diseases. In order to diagnose this rare condition a high grade of suspicion is needed, as symptoms are variable and most diagnostic tools are not sensitive enough to recognize it.

Keywords: Gastrocolic fistula, Rare presentation, Colic adenocarcinoma

Key points

- Gastrocolic fistula is a rare condition, usually associated with malignancy.
- Gastrocolic fistula is associated with unusual and aspecific symptoms.
- Gastrocolic fistula associated with malignancies is associated with bad prognosis.
- We report a patient still alive, without lymph-node involvement despite a 71-sample.

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Introduction

Gastrocolic fistula (GCF) is a rarely reported complication occurring with benign and malignant gastrointestinal pathologies (ulcers[1], carcinomas). Its global incidence is difficult to estimate, although it is mostly associated with gastrointestinal malignancies[2]. Diarrhea, weight loss and feculent vomiting are thought to be the most important clinical features, but these are not always present at diagnosis. Indeed, the frequency of this triad is estimated to be 30% in the setting of Chron's disease-associated GCF[3].

In malignant cases, prognosis remains poor despite radical resection, as postsurgical malnutrition and electrolyte imbalance persist.

Case presentation

A 51-year-old Caucasian man was admitted to our institution in Switzerland with a 2-month history of upper abdominal pain irradiating to his middle and lower back and severe weight loss (15 kg over the last 5 mo). He described difficulty in eating, as well as vomiting twice during the week prior to admission, which is why he was sent by his physician to the hospital for diagnostic work up. His family and past medical history were not suggestive of any pre-existing conditions. Clinical examination revealed no abnormality, notably no abdominal mass.

Laboratory tests revealed moderate anemia (Hemoglobin level 109 g/L) with iron deficiency (Ferritin 19 μg/L). Hepatic and renal functions were preserved. CEA (26.7 μg/L) and CA19-9 (90 kU/L) levels, dosed after a gastroscopy, were pathologic. The altered nutritional status was underlined by a prealbumin of 0.13 g/L (normal range: 0.20–0.40 g/L).

Since the differential diagnosis at presentation included an upper gastrointestinal malignancy or a peptic ulcer, a gastroscopy

was performed, revealing what appeared to be a malignant ulcer in the antral-fundic junction of the posterior gastric wall. This lesion was complicated by exposure of stool-like material, raising the suspicion of GCF on an underlying gastric or colic tumor.

Biopsies showed a colic adenocarcinoma. Complementary enhanced thoraco-abdominal computed tomography (CT) with oral water opacification showed a thickening of the transverse colon wall extending and invading the stomach and containing gas. Invasion of the tail of the pancreas was suspected as complication of the GCF through the greater curvature of gastric body (**Fig. 1**). No distant metastasis were detected.

After a short period of parenteral nutrition, the patient underwent a laparotomy for surgical resection of the colic mass with left hemicolectomy, gastric bypass, cholecystectomy, splenectomy and caudal pancreatectomy. A revised laparotomy was required 3 days later due to leakage of colo-colic anastomosis. Thereafter, the patient underwent an uneventful recovery.

The postoperative analysis confirmed colic adenocarcinoma with gastric and pancreatic invasion, lacking any locoregional metastatic lymph nodes (**Fig. 2**). The final stage was pT4b, pN0 (0/71), L1, V0, Pn1.

The patient underwent adjuvant chemotherapy with 5-Fluorouracil and Oxaliplatin for 6 months, stopped in October 2017, and was disease-free at the 3-year follow-up control visit in April 2020.

Discussion

Although the literature's description of colic cancer complicated by GCF is currently limited to case reports, this disease, along with gastric carcinoma, remains the leading cause of GCF. GCF is indeed mostly associated with colic and gastric adenocarcinoma, even if only 11 fistulas have been reported in a review of 1500 cases of gastric carcinoma and 3200 cases of colic carcinoma. The absolute incidence of this problem could be calculated at about 1 case per 1,000,000 inhabitants/year. This rare disease has been also associated with other malignant sources such as gastric lymphoma, colic carcinoid tumors, and some infiltrative tumors of the duodenum and pancreas[4–8].

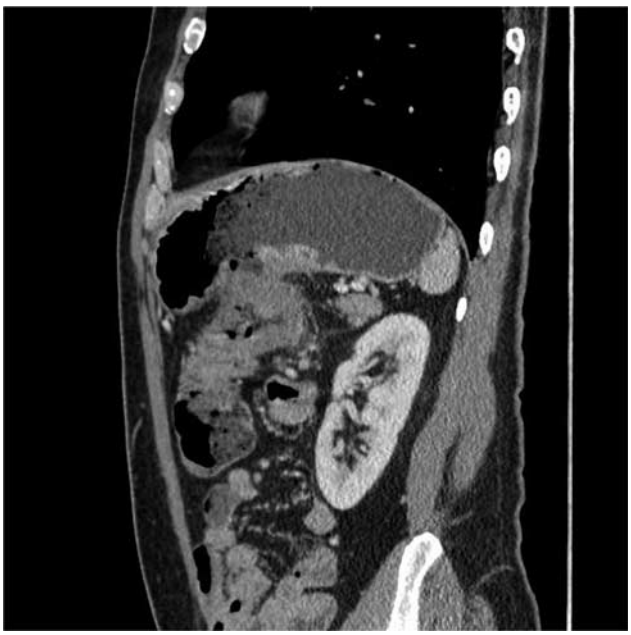

Figure 1. Fistula as seen by contrast enhanced computed tomography scan.

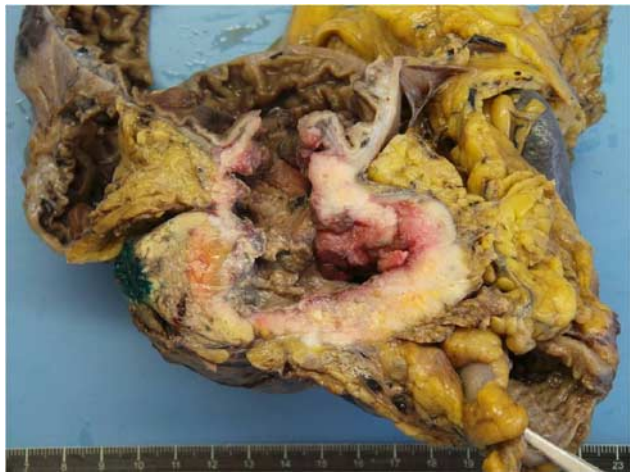

Figure 2. Operative specimen.

Although nonsteroid anti-inflammatory drugs have been identified as the main benign cause of this entity, the use of PPI for the treatment of peptic ulcer has dramatically decreased the incidence of this already rare complication[9,10]. Even more rare causes are gastric tuberculosis, trauma, postsurgical or syphilis[11–16] (**Table 1**).

In the context of known colic/gastric malignancy, GCF can be clinically suspected when symptoms such as feculent vomiting, diarrhea and weight loss are present. This was described as the classic triad, although there can often be other nonspecific symptoms.

The main cause of diarrhea could be linked to a free passage of gastric contents into the colon[13]. Some authors described the presence of diarrhea as associated with a large orifice of the fistula or with an obstruction to the normal flow of gastric contents through the pylorus. In our case, diarrhea was not the predominant clinical feature.

Feculent vomiting is, on the other hand, probably associated to the passage of colic contents through the fistula.

Finally, electrolyte imbalance can be attributed to rapid passage of the gastric content into the colon.

Although barium enema is considered the most sensitive diagnostic tool for detecting GCF, with a sensitivity reported at 95%–100%, it still cannot accurately demonstrate the cause of this pathology. Upper gastrointestinal series are not usually recommended as the first diagnostic option because of a low

Table 1

Main causes of gastrocolic fistula[12]

Neoplastic	Infectious	Medication	Others
Colon cancer	Tuberculosis	NSAIDs (peptic ulcer)	Chron's disease
Gastric cancer	Syphilis	Steroids	Postsurgical
Gastric lymphoma	CMV reactivation		Trauma
Carcinoids			Chronic pancreatitis

CMV indicates cytomegalovirus; NSAIDs, nonsteroid anti-inflammatory drugs.

reported sensitivity of 27%–37%[17,18]. This could be linked to the pressure used in the enema, which may allow the contrast product to fill the stomach while passing by the fistula. Endoscopy plays a role in detecting a GCF, which is highlighted by its ability to directly exhibit the orifice of fistula and to perform an eventual biopsy of suspected lesions. However, a collapsed or narrow orifice may easily be overlooked. While CT is a modality of choice to determine the local and distant extension of the tumor, its role in demonstrating GCF remains undetermined. In the present case, the GCF was first detected by endoscopy with the biopsy revealing the colic origin of the tumor. However, GCF, colic mass and local invasion were also well visualized by CT.

The role of Entero-MRI has been described in a case report in Chron's disease, but it is not standard in the presence of malignancies[19].

Surgery is the treatment of choice for malignant gastro-colic fistulas, with "en bloc" resection being the recommended technique; further discussions between experts, however, are necessary in order to identify the most appropriate technique. For severely malnourished patients that are underweight and with low serum albumin, a temporary diverting colostomy may be associated with better outcomes, due to the high risk of leakage from the anastomosis[18]. The present case underwent an "en bloc" resection with a positive outcome at the 30 months follow-up visit, even if an anastomotic leakage occurred in the first days following surgery.

Interesting to note, in our case no lymph-nodes (0/71) were found to be involved in the pathologic specimen. This could probably reflect a better prognosis, since another case of GCF with a disease-free survival of 5 years has been reported in a man whose specimen had 37 negative lymph-nodes[20]. We found another recent case report with absence of lymph-node involvement, for which we do not have long follow-up data[21]. Unluckily, most reports of GCFs are not accompanied by a complete description of the definitive pathologic stage, thus not allowing us to confirm our hypothesis. In fact, on the other hand, the absence of regional lymph-nodes involvement for a T4b pathologic stage could be linked to a local aggressiveness with high relapse rate (eg, with peritoneal carcinosis). More reports and case series with a complete histologic description could help answering this question.

No alternative treatment to surgery can be proposed in case of a malignant cause. The use of anti-acids (cimetidine and ranitidine) has been described when the underlying cause was a benign peptic ulcer, with a healing time that ranged from 2 to 16 weeks[13].

Conclusion

Our case presented atypical and nonspecific clinical symptoms of GCF, in particular the absence of diarrhea as a main symptom. Moreover, in our case there were signs of upper GI tract bleeding, which are commonly described in less than one third of patients. These features underline the fact that a highly careful and calculated diagnostic algorithm is needed in order to identify and properly treat this rare entity.

Lymph-nodes involvement should be carefully described in future reports in order to allow a better analysis of the prognosis of this rare disease presentation.

Methods

This case report was written and corrected in line with SCARE 2018 guidelines[22].

Ethical approval

The patient was informed of the intention to publish this case report and accompanying images and a written informed consent was obtained. A copy of the written consent is available on request.

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Author contribution

D.F.: conception, writing, revision, submission. N.G.: writing and revision. P.R.: conception, revision. S.M.: writing, revision. C.C.: writing, revision. L.E.B.: conception, writing, and revision.

Conflict of interest disclosure

The authors declare that they have no financial conflict of interest with regard to the content of this report.

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Not applicable.

Guarantor

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