

An acute ileocolitis of unexpected origin

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Abstract

The colon is a common site of primary malignancy. However, it is a very rare metastatic localisation. Here, we report a case of a signet-ring cell carcinoma of the stomach metastasizing to the ileum and colon, mimicking a presentation of an acute inflammatory ileocolitis. (*Acta gastroenterol. belg.*, 2024, 87, 329-331).

Keywords: Signet-ring cell gastric carcinoma, gastric cancer, intestinal metastases, ileocolitis.

Introduction

Gastric cancer is the fourth most common cause of cancer-related death worldwide (1). General survival is poor, with a mean 5-year overall survival of only 20-30%, reflecting the fact that most patients with gastric cancer already have incurable disease at the time of diagnosis (2,3). Since the advent of *Helicobacter pylori* eradication treatment, the incidence of gastric adenocarcinoma has decreased (1). However, the incidence of signet-ring cell gastric carcinoma is rising, accounting for 8-30% of all gastric cancer cases (4). Signet-ring cell gastric carcinoma is an aggressive tumour, characterized by local invasive disease, rapid progression, high tendency for metastasis and generally poor prognosis. The most common metastatic sites of gastric cancer are liver, peritoneum, lung, lymph nodes and bone. For patients with signet-ring cell histology, the peritoneum is the most common site of metastatic disease, followed by the bone and ovaries. Less frequent metastatic sites are the skin, breast and intestines (5). The presence of colonic metastasis is extremely rare, and only few cases are reported worldwide (6-12).

Case

A 41-year-old woman was diagnosed with gastric linitis plastica (HER2 negative; MSS; PDL1 CPS 1.7) in December 2018. Staging with a computed tomography (CT) scan of the thorax and abdomen showed no signs of metastases. Additional endoscopic ultrasound showed a diffuse thickening of the submucosa, with an intact appearance of the muscularis propria. Whole-body magnetic resonance imaging (MRI) showed a diffusion restrictive nodule at the greater curvature of the stomach and a second nodule between the hepatic colonic flexure and the antrum of the stomach, considered to be adenopathies. Exploratory laparoscopy

showed no signs of peritoneal metastases. Therefore, the patient was subsequently treated with 4 cycles of neo-adjuvant chemotherapy (FLOT regimen: docetaxel, oxaliplatin, fluorouracil), a total gastrectomy with lymph node dissection and Roux-en-Y esophagojejunostomy, and adjuvant chemotherapy (FLOT regimen) until July 2019. Anatomopathological examination of the resection specimen showed a gastric adenocarcinoma with signet-ring cell differentiation. Pathological staging was ypT3N0(i), according to the 8th edition of Union for International Cancer Control (UICC), with isolated tumour cells in 4 of 21 lymph nodes. Follow-up with 6-monthly whole-body MRI did not show any signs of recurrence. In 2022, almost 3 years after the initial diagnosis, the patient presented to the emergency department complaining of abdominal pain and watery diarrhea, without blood or mucus. There was no fever or weight loss. The symptoms started a few weeks earlier and were getting worse day by day. Laboratory studies showed a progressive microcytic anemia (haemoglobin value 7.5 g/dL (9.3 g/dL two months earlier), normal value 14.0-18.0 g/dL; MCV 75.4 fL, normal value 76.0-96.0 fL) with iron deficiency (ferritin 12 mg/L, normal value 13-150 mg/L; transferrin saturation 12%, normal value 16-45%) and normal inflammatory parameters (CRP 5 mg/L, normal value ≤ 5.0 mg/L; WBC $4.96 \cdot 10^9/L$, normal value $4.00-10.00 \cdot 10^9/L$). A CT scan of the abdomen showed diffuse wall thickening of the right colon and distal ileal loops, with a stricture at the level of the terminal ileum right before the valve of Bauhin and signs of prestenotic dilatation (3.5cm) with fecaloid stasis at the distal ileal loops (Figure 1). A fecal culture was negative for enteric pathogens, toxin-producing *Clostridioides difficile*, parasites and mycobacteria. A colonoscopy was performed and revealed patchy sites of edema with blurring of the vascular pattern, pseudopolyps, and small aphthous ulcers, starting from the descending colon. Progression beyond the hepatic colonic flexure was not possible due to fixation and edema. Multiple random biopsies of the descending and transverse colon were taken. Anatomopathological examination of the biopsies showed a non-specific focally active colitis without signs

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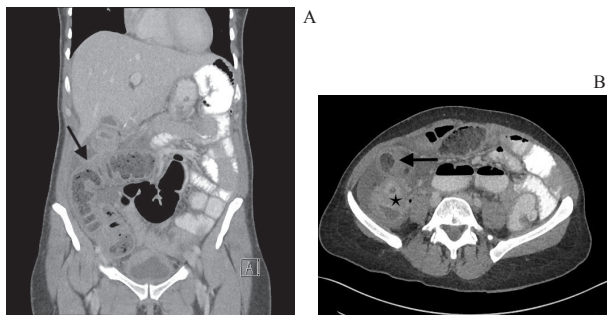


Figure 1. — Computed tomography scan of the abdomen. 1A: coronal view showing diffuse thickening of the colon wall, most prominent in the ascending colon (→). 1B: horizontal view showing wall thickening of the terminal and preterminal ileum with dilatation of the ileum (→), fecaloid stasis and prominent thickening of the cecal valve (*).

of chronicity, no signs of inflammatory bowel disease, CMV colitis or amoebiasis. During admission there was clinical improvement with symptomatic therapy, allowing the patient to be discharged after 1 week. Two weeks later, an ambulatory whole-body MRI revealed diffuse circumferential thickening of the colon- and terminal ileum wall, most prominent in the ascending colon and terminal ileum, without nodular components or diffusion restriction, therefore suggestive for inflammation rather than tumoral disease. Due to persistent and worsening symptoms a new colonoscopy was performed after four weeks. Referring to the first colonoscopy, similar findings were seen. Diffuse edema, friable mucosa, blurring of the vascular pattern and some small ulcers were visualized throughout the colon, this time already starting from the rectum (Figure 2). The cecum was reached, but intubation of the cecal valve was again not successful. Multiple biopsies of different lesions (edema, ulcers, submucosal swelling, ...) were taken and collected separately every 10cm. Anatomopathological examination of the biopsies was compatible with metastatic localisation of the known signet-cell carcinoma of the stomach at different sites (10cm, 40cm, 50cm and 60cm). Systemic therapy with mFOLFOX (oxaliplatin and 5-fluorouracil) was initiated 2 weeks later. Following two rounds of chemotherapy, the patient reported a notable improvement in symptoms, including the resolution of diarrhea and a reduction in intestinal cramps. 1 year later, the disease remains stable with intermittent mFOLFOX chemotherapy.

Discussion

We present a case report of a young woman with a previous history of non-metastatic gastric cancer, who experienced an atypical recurrence of the disease three years after completing peri-operative chemotherapy. The initial treatment (peri-operative chemotherapy and surgery; ypT3N0(i)) was intended to be curative, but the known high recurrence rates of gastric cancer after surgery posed a risk. The recurrence was initially mistaken for an acute inflammatory ileocolitis, unfortunately, further investigations revealed an extensive recurrence of signet-

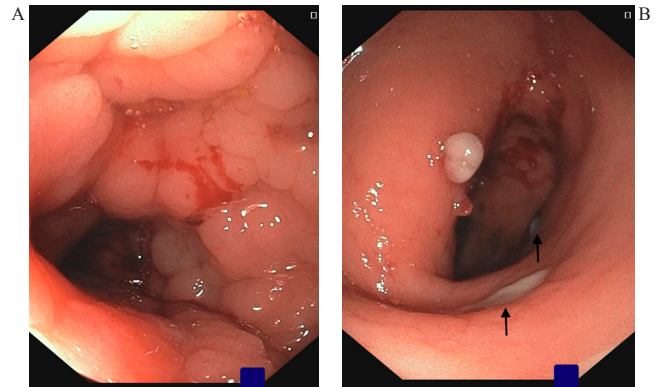


Figure 2. — Second colonoscopy. 2A: diffuse erythema and edema with blurring of the vascular pattern and friability. 2B: diffuse erythema, blurring of the vascular pattern and some small ulcers (→).

ring cell gastric cancer with diffuse serosal infiltrative disease around the colon and ileum. Imaging with CT and MRI, as well as endoscopy, were initially unable to clearly identify the disease recurrence. Regarding the MRI, the presence of a long segment of homogeneous wall thickening in the colon and terminal ileum, without any nodularity or diffusion restriction, indicated a likelihood of an inflammatory cause. Adequate biopsies were crucial in making the final diagnosis, emphasizing the importance of taking sufficient samples and considering the possibility of sampling errors. Additionally, the widespread nature of the intestinal metastases is noteworthy and, to the best of our knowledge, has not been previously documented.

Gastric cancer accounted for 4% of all new cancer diagnoses and 7.1% of cancer-related deaths in 2020 (1). The majority of cases are advanced at the time of diagnosis, and only 40% of patients are eligible for curative treatment (13). The recurrence rates after curative resection are high, with a wide range of 5-year overall survival rates (18-94%) based on stage during surgery (3). In addition to the standard staging work-up, additional imaging techniques such as FDG-PET-CT or whole-body MRI may be employed, if necessary. In patients who are eligible for curative treatment with peri-operative chemotherapy (stage $\geq$ IB disease), a diagnostic laparoscopy is recommended to exclude peritoneal disease. Gastric cancer can spread through local extension, lymphatic spread, hematogenous spread, or peritoneal seeding. The patterns of metastasis vary depending on the histological subtype. For patients with signet-ring cell histology, the peritoneum is the most frequently affected site, followed by the bone and ovaries (5). Intestinal metastases from gastric cancer are uncommon.

In general, metastatic neoplasms in the colon are rare, accounting for only 1% of colorectal cancers (14). Secondary colorectal involvement is usually associated with primary neoplasms from the lung, ovary, breast, prostate, kidney, or melanoma (14). Colonic metastases often present with bowel obstruction, anemia, and weight loss. In our case, the presentation with diffuse infiltrative

disease of the right colon and ileum, mimicking an acute inflammatory colitis, was unique. Additionally, in previous case reports of gastric cancer with colonic metastases, lesions appeared to be more localised and pronounced, which initially raised suspicions of malignancy (6-12).

This case report highlights the aggressive and unpredictable nature of signet-ring cell gastric cancer. Moreover, this case exemplifies the ability of a malignant condition to imitate symptoms of an inflammatory or infectious ileocolitis. Emphasizing the significance of acknowledging the potential for a tumor-related cause when encountering a new clinical problem in individuals with a history of cancer, especially in cases involving aggressive tumour types.

Conflicts of interest

The authors have no relevant conflicts of interest to declare.

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