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## Metastatic carcinoma of the colon similar to Crohn's disease: a case report.

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## Abstract

A 68-year-old Japanese man with a history of linitis plastica carcinoma of the stomach and subsequent gastrectomy 8 years previously presented with lower abdominal pain. Radiological and endoscopic examinations showed multiple submucosal nodular lesions similar to Crohn's disease in the ileocecal area. A firm diagnosis could not be made after initial multiple biopsies. Finally, a submucosal biopsy revealed adenocarcinoma. The ileocecal lesion was diagnosed as a recurrence because of the histological findings, which included mucosal preservation, a similarity with the histologic type of stomach carcinoma, and atypical immunoreactivity for primary colon carcinoma; the lesion was negative for both cytokeratin 7 and cytokeratin 20. In cases where metastatic carcinoma of the colon is suspected, we recommend early consideration of a submucosal biopsy.

**KEYWORDS:** metastatic carcinoma, colon, Crohn's disease

*Case Report*

## Metastatic Carcinoma of the Colon Similar to Crohn's Disease: A Case Report

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A 68-year-old Japanese man with a history of linitis plastica carcinoma of the stomach and subsequent gastrectomy 8 years previously presented with lower abdominal pain. Radiological and endoscopic examinations showed multiple submucosal nodular lesions similar to Crohn's disease in the ileocecal area. A firm diagnosis could not be made after initial multiple biopsies. Finally, a submucosal biopsy revealed adenocarcinoma. The ileocecal lesion was diagnosed as a recurrence because of the histological findings, which included mucosal preservation, a similarity with the histologic type of stomach carcinoma, and atypical immunoreactivity for primary colon carcinoma; the lesion was negative for both cytokeratin 7 and cytokeratin 20. In cases where metastatic carcinoma of the colon is suspected, we recommend early consideration of a submucosal biopsy.

**Key words:** metastatic carcinoma, colon, Crohn's disease

**M**etastatic carcinoma of the colon is rare. It has been reported to occur in 0.1-1% of colon malignancies [1]. The diagnosis is defined by clinical and histologic findings, and is often difficult to make because the metastatic lesion usually spreads into the submucosal space preserved with normal mucosa.

We report here a case of metastatic ileocecal carcinoma. Considering the clinical course and histologic examination, this case was quite difficult to diagnose.

### Case Report

A 68-year-old Japanese man presented with lower abdominal pain in January 1995.

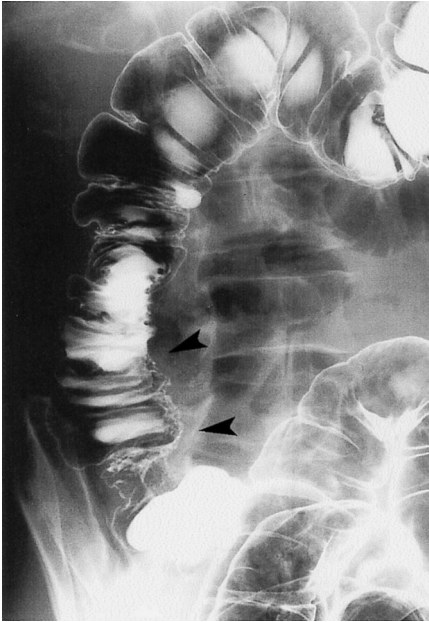
The patient had undergone a total gastrectomy for linitis plastica carcinoma of the stomach 8 years previous-

ly. Histological evaluations of the gastric carcinoma had revealed signet ring cell carcinoma with areas of poorly differentiated adenocarcinoma, and the depth of invasion was subserosa. The case was classified as a pT2, pN2, sH0, sP0, sM0, f Stage IIIA gastric carcinoma, according to the Japanese Classification of Gastric Carcinoma [2]. Two of 5 harvested lymph nodes (LN) along the lesser curvature (LN No. 3) and 1 of 6 LN along the left gastric artery (LN No. 7) were positive for metastasis. Immunohistochemical examination of the gastric tumor revealed partially positive staining for cytokeratin 7 (DAKO, Denmark) but not for cytokeratin 20 (DAKO).

The carcinoembryonic antigen (CEA) was elevated to 9.1 ng/ml. A barium enema showed a serrated contour and stricture of the ileocecal region (Fig. 1). A colonoscopy showed multiple submucosal nodular lesions of the cecum (Fig. 2). The lesions were similar in appearance to the cobblestone appearance of Crohn's disease but without ulceration. We weren't able to obtain a firm diagnosis by routine multiple biopsies. Finally, 50 days after admis-

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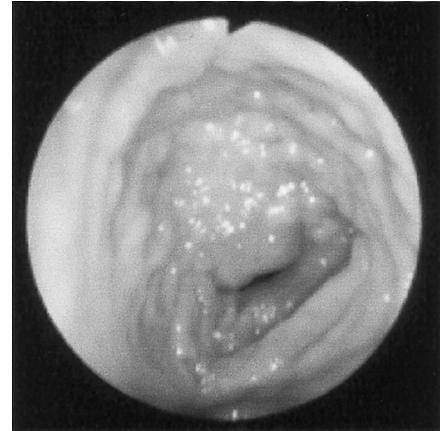
**Fig. 1** A barium enema showed a serrated contour and stricture of the ileocecal region (arrow heads).

sion, a diagnosis of adenocarcinoma was made by a submucosal biopsy using a strip biopsy technique [3]. The patient underwent an ileocecal resection.

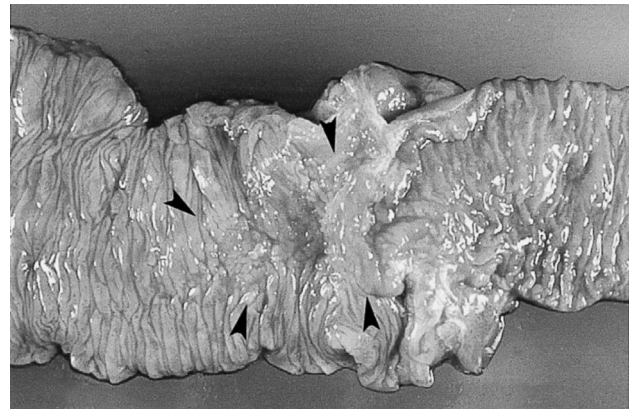
Gross exploration of the abdomen showed that the recurrence had occurred solely in the ileocecal area. Gross findings of the resected specimen demonstrated intestinal wall thickening and multiple submucosal nodular lesions covered with normal mucosa (Fig. 3).

Histological examination of the resected specimen revealed signet ring cell carcinoma with areas of poorly differentiated adenocarcinoma expanding from the submucosa to the subserosa. Mucosal preservation was clearly demonstrated by positive staining for CAM5.2 (DAKO) (Fig. 4). Two of 11 harvested lymph nodes (LN) along the paracolic vessels were positive for metastasis. Neither cytokeratin 7 nor cytokeratin 20 revealed immunoreactivity in the ileocecal lesion.

Although 8 years had passed since the gastrectomy, the ileocecal lesion was diagnosed as a metastasis from gastric carcinoma because of histologic findings such as mucosal preservation and a similarity to stomach carcinoma. The patient died from peritoneal dissemination of the carcinoma 16 months after the second surgery.



**Fig. 2** A colonoscopy showed multiple submucosal nodular lesions of the cecum.

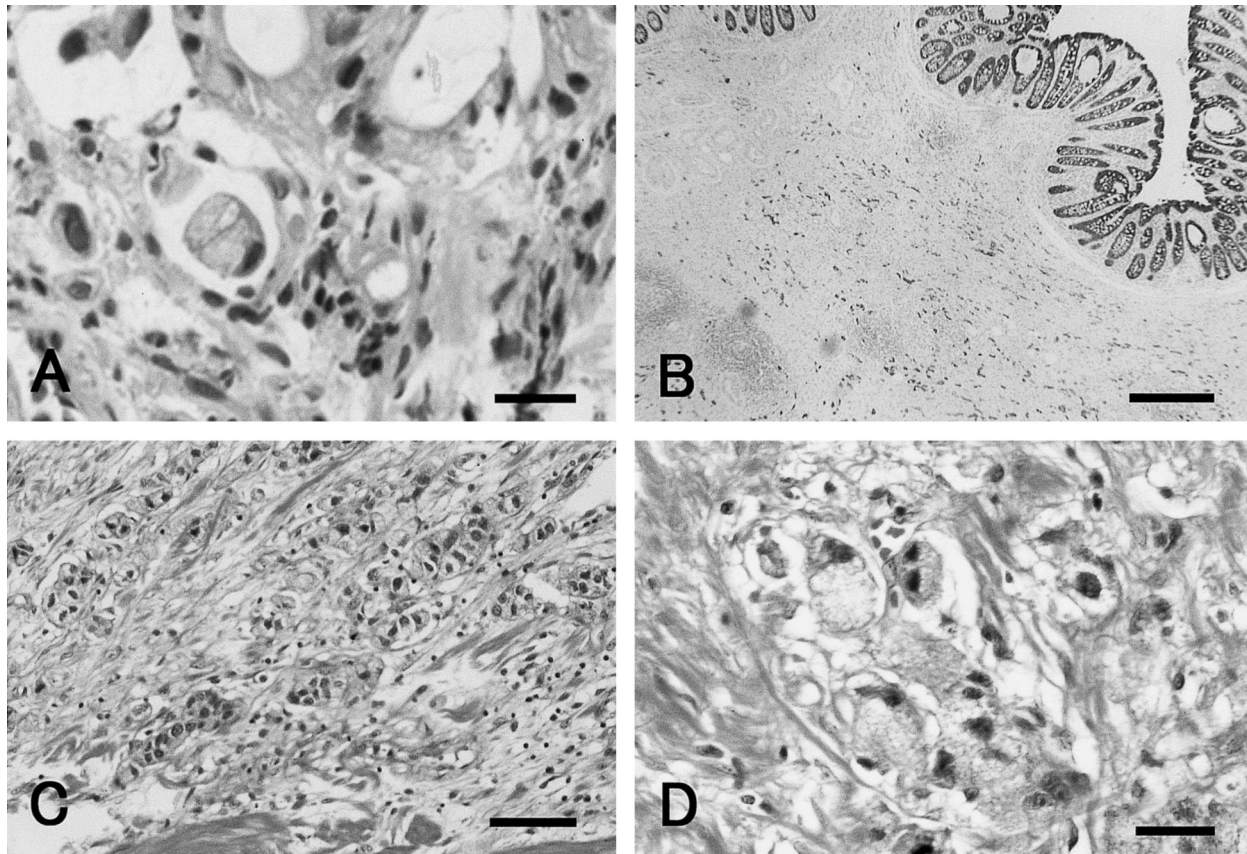


**Fig. 3** Gross findings of the resected specimen demonstrated intestinal wall thickening and multiple submucosal nodular lesions covered with normal mucosa (arrow heads).

## Discussion

Metastatic carcinoma of the colon usually originates from carcinoma of the stomach, breast, skin, kidney, prostate, or ovary [4, 5].

Findings of the history-taking and examination are very important for making a diagnosis of metastatic carcinoma. A recurrence of stomach carcinoma usually occurs within 5 years of surgery, often in multiple organs. In the present case, the recurrence occurred after a long interval from the initial stomach carcinoma, and the ileocecal area was the only lesion in which recurrence was



**Fig. 4** Histological examination of the stomach and ileocecal lesion. **A**, The stomach lesion showed signet ring cell carcinoma. HE stain, high power field. Bar indicates  $20\ \mu\text{m}$ . **B**, The ileocecal lesion showed mucosal preservation, as clearly demonstrated by positive staining for CAM5.2. ABC method, low power field. Bar indicates  $500\ \mu\text{m}$ . **C**, The ileocecal lesion showed the signet ring cell carcinoma with areas of poorly differentiated adenocarcinoma expanding from the submucosa to the subserosa. HE stain, middle power field. Bar indicates  $50\ \mu\text{m}$ . **D**, The ileocecal lesion showed signet ring cell carcinoma. HE stain, high power field. Bar indicates  $20\ \mu\text{m}$ .

suspected. Recurrence was suspected because of the CEA elevation, but the CEA is often elevated by other mechanisms.

In cases with metastatic carcinoma of the colon, a barium enema usually reveals segmental colonic strictures. Endoscopic examination normally shows granular and friable lesions with a loss of the normal vascular pattern, occasionally with submucosal nodularity or superficial erosions [6], and rarely polyposis [4].

Metastatic carcinoma of the colon can be misdiagnosed as primary linitis plastica carcinoma, Crohn's disease, ischemic colitis, tuberculosis, or diverticulitis [6]. Several authors have reported cases with metastatic carcinoma of the colon similar to Crohn's disease [6-9]. In cases with Crohn's disease, there is often colonic

involvement. A barium enema reveals a stenotic bowel segment and nodular irregularity, the so-called "string sign" and "cobblestone appearance," respectively.

In cases showing linitis plastica carcinoma or signet ring cell carcinoma of the colon, the differentiation between primary and metastatic carcinoma is often made by the exclusion of other malignancies. Primary signet ring cell carcinoma is a rare form of colorectal malignancy usually affecting young patients, and the differentiation is not always clear at microscopy. Primary carcinoma infiltrates from the mucosa to the serosa, with metastatic lesions beginning as submucosal or serosal implants. Recently, immunohistochemical examination for cytokeratin 7 and cytokeratin 20 has been reported to be useful for differentiation between signet ring cell carcinoma of the

stomach and colon [10]. A colon primary is supported if the neoplastic cells have a cytokeratin 7 (-)/cytokeratin 20 (+) staining pattern, and a gastric primary is supported if the cells have a cytokeratin 7 (+)/cytokeratin 20 (-) staining pattern.

In the present case, the gastric lesion revealed a partially positive staining pattern for cytokeratin 7 and a negative staining pattern for cytokeratin 20, while the ileocecal lesion revealed negative patterns for both cytokeratin 7 and cytokeratin 20. Although metastatic lesions sometimes reveal histologic features different from those of the primary lesion, the ileocecal lesion did not show a typical staining pattern for colon signet ring cell carcinoma. In the present case, the ileocecal lesion was diagnosed as a recurrence because of the histologic findings, which included mucosal preservation, a similarity to the histologic type of stomach carcinoma, and atypical cytokeratin 7 and cytokeratin 20 staining patterns for primary colon carcinoma.

The usual endoscopic biopsy often fails to define the diagnosis. In the present case, we initially suspected Crohn's disease or malignant lymphoma, and we required 50 days to make a correct diagnosis using a strip biopsy resection technique [3]. The biopsy specimen obtained by this technique includes both submucosal and mucosal tissues. Therefore, when metastatic carcinoma of the colon is suspected, we recommend early consideration of a submucosal biopsy.

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