Clinics and Research in Hepatology and Gastroenterology (2017) xxx, xxx.e1–xxx.e6

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CASE REPORT

Lymphogenous metastasis to the transverse colon that originated from signet-ring cell gastric cancer: A case report and review of the literature

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KEYWORDS
Colon metastasis;
Signet-ring cell carcinoma;
Lymphogenous metastasis

Summary Metastases to the colon are rare and a high-frequency primary region is the stomach. In cases of metastases to the colon, the morphological type of the metastatic region is mostly the infiltrating type of poorly differentiated or undifferentiated adenocarcinoma with lymph and blood vessel invasion. A case of cancer metastasis to the transverse colon that originated from advanced gastric cancer, which shows the difficulties in the precise diagnosis of metastases to the colon, is presented. In the present case, the gastric carcinoma was determined to be an advanced infiltrative ulcerative adenocarcinoma and the colon carcinoma was determined to be a superficial depressed adenocarcinoma. After surgery, the colon carcinoma was diagnosed as a metastatic adenocarcinoma from gastric adenocarcinoma with high invasion of vessels, by immunohistopathological analysis of CK7, CK20, p53 and HER-2. In this report, previously reported cases of metastases to the colon from gastric cancer were reviewed and their morphological characteristics were analyzed.

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http://dx.doi.org/10.1016/j.clinre.2017.04.002
2210-7401/

Please cite this article in press as: Sonoda H, et al. Lymphogenous metastasis to the transverse colon that originated from signet-ring cell gastric cancer: A case report and review of the literature. Clin Res Hepatol Gastroenterol (2017), http://dx.doi.org/10.1016/j.clinre.2017.04.002

Introduction

Gastric cancer is known to occur simultaneously or metachronously with colorectal cancer at a rate of 1–3% [1]. On the other hand, gastric cancer can metastasize to the large intestine in rare cases. If cancers of similar tissue type are found in both the stomach and large intestine, determining whether the pathology represents double primary cancers or colonic metastases from the stomach is difficult.

A case of lymphatic metastasis of gastric cancer to the colon is presented. In this patient, the preoperative diagnosis was double primary cancers and distal gastrectomy with lymph node dissection and partial colectomy were performed. However, postoperative histopathological analysis resulted in a diagnosis of lymphatic metastasis of gastric cancer to the transverse colon.

Lymphatic metastasis of gastric cancer to the colon is extremely rare, with only two cases reported to date. This report also discusses the cases of colonic metastases of gastric cancer reported.

Case report

An 81-year-old Japanese man was referred to our hospital with a chief complaint of anemia. Laboratory findings were normal except for anemia (hemoglobin concentration of 9.2 g/dL). The data of tumor markers were elevated (CEA 12.4 ng/mL, CA19-9 270 U/mL and anti-p53 antibody 468 U/mL). Upper gastrointestinal endoscopy showed an advanced infiltrative ulcerative tumor in the pyloric region of the stomach (Supplemental Fig. 1A). This tumor was hemorrhagic and the endoscopic biopsy showed that the gastric tumor was poorly differentiated adenocarcinoma with signet-ring cell carcinoma. Colonoscopy showed a superficial depressed tumor in the middle position of the transverse colon (Supplemental Fig. 1B). The endoscopic biopsy showed that the transverse colon tumor was also a poorly differentiated adenocarcinoma with signet-ring cell carcinoma. Computed tomography (CT) showed an enhanced irregular tumor in the antrum of the stomach (Supplemental Fig. 2A) with enhanced regional lymph nodes (Supplemental Fig. 2B) and the tumor size was 40 mm. A transverse colonic tumor that was 10 mm in diameter was also suspected on CT. With a diagnosis of double primary cancers, radical resections were performed for both tumors. The patient underwent distal gastrectomy and partial colectomy of the transverse colon. Gastrectomy was performed with D2 lymphadenectomy, which was defined by the Japanese Gastric Cancer Association guidelines 2010 (ver. 3) [2], and lymphadenectomy of para-aortic and superior mesenteric vein lymph nodes. The patient was discharged on the 40th postoperative day after the conservative treatment for stasis.

Intraoperatively, the gastric tumor was located in the antrum of the stomach and the colonic tumor was in the middle position of the transverse colon. The swollen lymph nodes were spread continuously from the greater curvature of the antrum to the transverse colon via the right gastroepiploic arterial region and the middle colic arterial region (Supplemental Fig. 3). The peritoneal washing cytology diagnosis was negative for malignant cells. Both tumors were

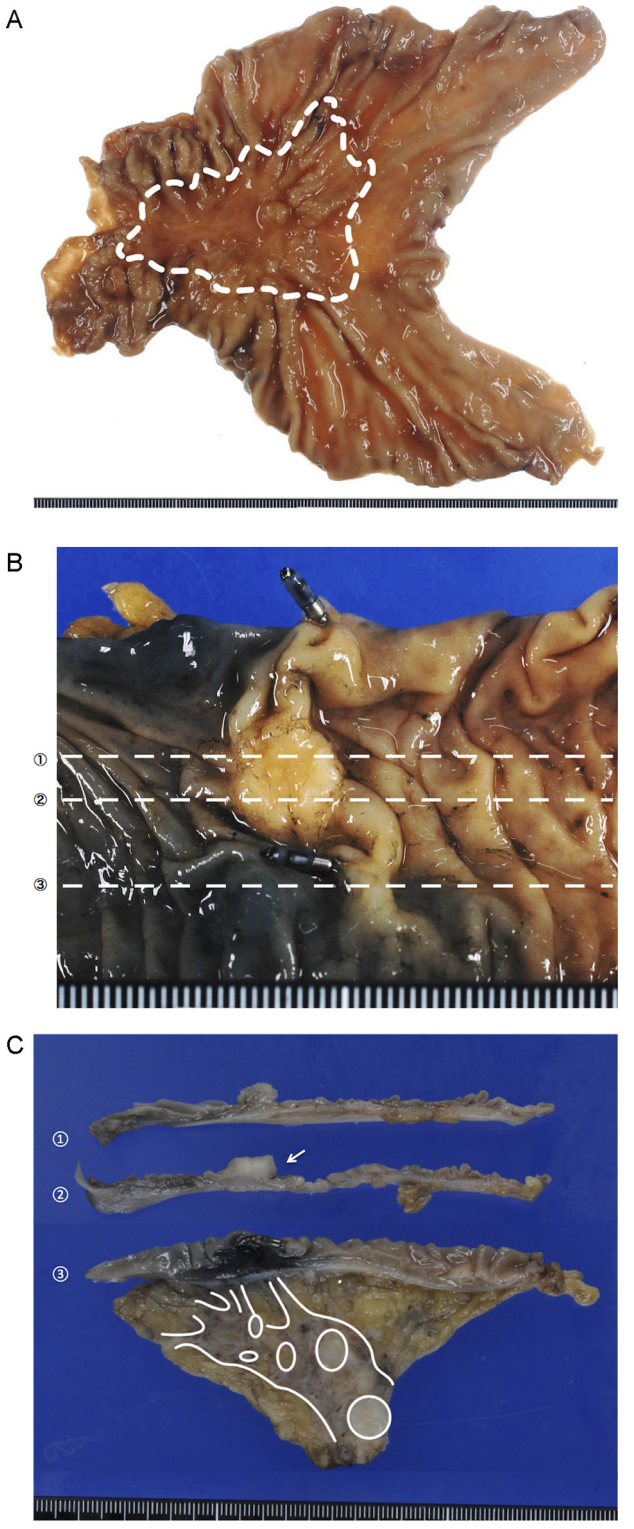

Figure 1 A. The gastric tumor is 71 mm × 54 mm, located in the antrum (surrounded by the white dotted line). B. The colon tumor is an 11-mm elevated lesion with a central depression. The white dotted lines show the cut line in Fig. 1C. The anal side mucosa of the colon tumor has been marked with black ink preoperatively. C. The yellow arrow points to the colon tumor. The regions of the swollen lymph nodes are spread in the transverse mesocolon and are also shown by the yellow lines.

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