Colonic Metastasis From Gastric Cancer

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Clinical Practice Points

- The most common sites of metastases with gastric cancer includes liver, peritoneal surfaces, and distant lymph nodes. Less commonly, ovaries, central nervous system, bone, pulmonary, or soft tissue metastases occur. However colonic metastases from gastric cancer are rare.
- We report a patient with a signet ring cell carcinoma of the gastroesophageal junction metastasizing to the colon 3 years after surgical resection and adjuvant chemotherapy for her stage II disease.
- Gastric cancer can affect many types of tissues and organs, however, colonic involvement is rare. It is important to bear in mind that gastric cancer, especially poorly differentiated or signet ring cell type has propensity for rare colonic recurrence.

Clinical Colorectal Cancer, Vol. 13, No. 4, 255-6 © 2014 Elsevier Inc. All rights reserved.
Keywords: Colon cancer, Gastroesophageal junction, Immunohistochemistry, Metastasis, Signet ring cell carcinoma

Introduction

Although the incidence of gastric cancer has decreased approximately 75% during the past few decades in the United States, the incidence of gastroesophageal tumors has concomitantly increased.1 Nonetheless, gastric cancer is the second most common cause of cancer death worldwide.2 It used to be the leading cause of cancer death in the world until the 1980s when it was overtaken by lung cancer.3,4 Approximately 50% of patients present with disease that extends beyond locoregional confines, and only half of those who appear to have locoregional tumor involvement can undergo a potentially curative resection. The most common metastatic distribution is to the liver, peritoneal surfaces, and distant lymph nodes. Less commonly, ovaries, central nervous system, bone, pulmonary, or soft tissue metastases occur. However, colonic metastases from gastric cancer are rare. Here we describe a patient with a signet ring cell carcinoma of the gastroesophageal junction metastasizing to the colon 3 years after surgical resection and adjuvant chemotherapy for her stage II disease.

Case Report

A 69-year-old woman presented with melena and weight loss in March 2009. Initial computed tomography (CT) imaging showed an irregular thickening of the gastric wall with adjacent lymphadenopathy. Subsequent esophagogastroduodenoscopy revealed a 6- to 7-cm gastroesophageal mass with central ulceration, extending from the stomach cardia to the esophagus. Endoscopic ultrasound showed the tumor extended beyond the muscularis propria and 3 lymph nodes suspected to have cancer involvement. Biopsy revealed a poorly differentiated adenocarcinoma with signet ring cells. Immunohistochemistry was strongly positive for cytokeratin (CK)-20 and negative for CK7, mucin 5, and caudal type homeobox 2 (CDX2). Helicobacter pylori staining was negative. She started neoadjuvant chemotherapy with FOLFOX (folinic acid, 5-fluorouracil, and oxaliplatin). Her course, however, was complicated by severe mucositis and neutropenia, attributed to the 5-fluorouracil. Therefore, her treatment was switched to ECX (epirubicin, cisplatin, and xeloda) followed by partial gastrectomy and a 3-month course of adjuvant ECX (Medical Research Council Adjuvant Gastric Infusional Chemotherapy Trial-like regimen). Surgical pathology showed poorly differentiated adenocarcinoma arising in the lesser curvature with 5.2 cm in the maximum dimension. The tumor invaded into but not through the muscularis propria. Two of 21 lymph nodes were positive for metastatic carcinoma. Lymphovascular and perineural invasion were noted. Margins were clean. Her pathologic staging according to tumor, node, metastases (American Joint Committee on Cancer, edition 6) was stage II (T2aN1M0) Grade 3 adenocarcinoma of the gastroesophageal junction. She also underwent colonoscopy in October 2009 and this showed 2 tubular adenomas, located in the transverse colon and splenic flexure. The patient’s medical history, aside from her history of gastroesophageal cancer, was notable for only hypothyroidism that was treated with levothyroxine. The patient was a former smoker for 19 years, having quit 39 years previously. She did not drink alcohol or use illicit drugs. Her notable family history included only liver cancer in her mother.

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Submitted: Jul 20, 2014; Accepted: Sep 10, 2014; Epub: Sep 21, 2014

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http://dx.doi.org/10.1016/j.clcc.2014.09.009
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She had been followed by serial CT scans and endoscopy without evidence of disease recurrence until May 2013 when she had a colonoscopy for hematochezia and weight loss. It revealed 2 ulcerated fungating colonic masses at 45 cm and 25 cm. The biopsy report was positive for poorly differentiated invasive adenocarcinoma, which most likely represents metastasis from the gastroesophageal junction primary. The immunohistochemistry showed focal positivity for CK20 and negative for CK7 and caudal type homeobox 2 (CDX2). The HER2/neu score was 0. Subsequent staging positron emission tomography-CT scan revealed 2 sigmoid colonic lesions and they were standardized uptake values 12 and 9.8. Also, there was mild uptake at the distal esophagus with standardized uptake values 3. Repeat upper endoscopic ultrasound in May 2013 showed normal esophageal anastomosis with mild reactive changes. For her metastatic disease she was treated with a 4-month course of FOLFOX. However, the follow-up CT scan showed progressive sigmoid colonic wall thickening and an increase in the size of the cystic mass along the left pelvic side wall. Her treatment was changed to FOLFIRI (5-fluorouracil, folinic acid, and irinotecan).

Discussion

Gastric cancer can affect many types of tissues and organs, however, colonic involvement is rare. There are 2 distinct types of gastric adenocarcinoma including intestinal (well differentiated) and diffuse (undifferentiated). The diffuse type of gastric carcinoma is characterized by a wider dissemination of the tumor than the intestinal type, and is associated with a poorer survival rate than the intestinal type.\textsuperscript{5,6} The latter, however, involves the liver more frequently and extensively.\textsuperscript{7} The colon is a very rare metastatic site. The most common form of secondary neoplastic involvement of the bowel is the peritoneal seeding, which is generally seen in ovarian cancer. Rare colonic metastases by primary tumors have been reported in breast cancer,\textsuperscript{2,8} lung cancer,\textsuperscript{9} and melanoma.\textsuperscript{10} There are reports of metachronous or synchronous colonic metastasis from primary gastric cancer.\textsuperscript{11-15} Our patient presented with visible colonic mass but metastatic carcinoma usually preserves the mucosa and the positive yield from endoscopic biopsy is low (<50%).\textsuperscript{15} It is not clear whether the metastatic colonic lesions are from direct extension of the initial primary gastric cancer or due to hematologic or lymphatic dissemination to the colon. Our patient did not have any evidence of cancer involvement of her original cancer site or peritoneum on recurrence to her colon. More than half of the case reports of colonic involvement by primary gastric cancer were discovered synchronously. However, there are also cases presenting more than 5 years after the initial diagnosis.\textsuperscript{1,4,15} Our patient was treated for her stage II disease 3 years before she was found to have colonic metastasis.

Conclusion

It is important to bear in mind that gastric cancer, especially poorly differentiated or signet ring cell type has a propensity for rare colonic recurrence.

Disclosure

The authors have stated that they have no conflicts of interest.

References