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Gastrointestinal Manifestations of Breast Cancer Metastasis

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Breast cancer frequently metastasizes to bone, liver, central nervous system, and skin; however, gastrointestinal involvement is less common. Based on older autopsy reports from patients with known metastatic breast cancer, gastric and colorectal involvement is present in 8–15 % and 8–12 %, respectively [1, 2]. A recent autopsy study confirms the presence of gastrointestinal lesions in 11 % of all breast cancer metastases [3]. In approximately 1 % of cases, gastrointestinal lesions may be the first metastatic lesions identified [1, 4, 5]. However, of the patients with breast cancer at one institution, the overall incidence of gastrointestinal metastases was estimated at 0.5 % [6]. Given the frequency of breast cancer in the USA and other countries, it is important for the gastroenterologist to be aware of potential gastrointestinal metastases that may be encountered during either an upper endoscopy or lower endoscopy. We present three patients with gastrointestinal metastases from lobular carcinoma of the breast.

Patient 1:

A 45-year-old female with stage II estrogen receptor (ER)-negative Herceptin 2 (Her2)-positive lobular adenocarcinoma of the breast was initially treated with lumpectomy, chemotherapy, and radiation. Her course was complicated by recurrent metastatic disease to the bone, brain, and liver. She was referred to gastroenterology for evaluation of right-sided abdominal pain that did not respond to proton pump inhibitors. She denied any non-steroidal anti-inflammatory drug use. Upper endoscopy was performed, revealing numerous small atypical-appearing

ulcers in the antrum of the stomach (Fig. 1). Biopsies were obtained, and pathology revealed infiltrative pleomorphic ER+ metastatic cells, consistent with metastatic lobular breast cancer (Fig. 2).

Patient 2:

A 64-year-old female with ER+ Her2- lob- ular adenocarcinoma of the breast with cervical lymph node and possible iliac involvement was referred to gas- troenterology for evaluation of possible right-sided colonic thickening on CT scan. The oncologists were uncertain as to whether she had metastatic disease, and she was having unexplained weight loss. Upper and lower endoscopies were performed, and colonoscopy revealed a focal cir- cumferential narrowing with mild erythema in the sigmoid colon. Biopsies were obtained, and pathology revealed infiltrating ER+ adenocarcinoma, consistent with meta- static breast cancer.

Patient 3:

A 59-year-old female with invasive ER+ Her2- lobular adenocarcinoma of the breast with bone metastases and bone marrow infiltration was treated with hormone therapy and chemotherapy. She was referred to gastroenterology for evaluation of changes in bowel habits with change in the caliber of her stool and rectal bleeding. Colonoscopy was performed and revealed two small flat- appearing polyps that were removed as well as internal hemorrhoids. Pathology revealed pleomorphic ER+ malignant-appearing cells infiltrating the lamina propria, consistent with metastatic breast cancer.

These three cases represent a range of gastrointestinal manifestations of metastatic breast cancer. Overall, the lifetime risk of breast cancer in women in the USA is 12.4 % [7]. While ductal carcinoma is the predominant type, lobular carcinoma appears to have a greater predi- lection for metastasizing to the gastrointestinal tract and peritoneum [4, 5, 8]. Symptoms related to gastrointestinal manifestations, if present, are generally non-specific and may include abdominal pain, early satiety, or melena with upper gastrointestinal involvement or heme-positive stool, rectal bleeding, or obstructive symptoms for lower gastrointestinal involvement [7, 9]. Endoscopic findings vary significantly and may range from ulcers, mucosal thickening or friability, linitis plastica-like inflammation, stenosis and polyps, to obstructing mass [1, 2, 9]. Com- paring the pathology and immunohistochemistry, including estrogen receptor staining, from the gastrointestinal lesions and the primary breast carcinoma may help confirm the diagnosis of metastatic breast carcinoma. While gastroin- testinal manifestations of breast cancer are rare, it is important for gastroenterologists to be aware of the pos- sibility of gastrointestinal metastases, particularly in the setting of lobular carcinoma.

References

1. Taal BG, den Hartog Jager FCA, Steinmetz R, Peterse H. The spectrum of gastrointestinal metastases of breast carcinoma: I. Stomach. *Gastrointest Endosc.* 1992;38:130–135. [PubMed: 1568608]
2. Taal BG, den Hartog Jager FCA, Steinmetz R, Peterse H. The spectrum of gastrointestinal metastases of breast carcinoma: II. The colon and rectum. *Gastrointest Endosc.* 1992;38:136–141. [PubMed: 1568609]

3. Cummings MC, Simpson PT, Reid LE, et al. Metastatic progression of breast cancer: insights from 50 years of autopsies. *J Pathol.* 2014;232:23–31. [PubMed: 24122263]
4. Arpino G, Bardou VJ, Clark GM, Elledge RM. Infiltrating lobular carcinoma of the breast: tumor characteristics and clinical outcome. *Breast Cancer Res.* 2004;6:R149–R156. [PubMed: 15084238]
5. McLemore EC, Pockaj BA, Reynolds C, et al. Breast cancer: presentation and intervention in women with gastrointestinal metastasis and carcinomatosis. *Ann Surg Oncol.* 2005;12:886–894. [PubMed: 16177864]
6. Ambroggi M, Stroppa EM, Mordenti P, et al. Metastatic breast cancer to the gastrointestinal tract: review of five cases and review of the literature. *Int J Breast Cancer.* 2012. doi: 10.1155/2012/439023.
7. Howlader N, Noone AM, Krapcho M, et al. SEER Cancer Statistics Review, 1975–2009 (Vintage 2009 Populations). Bethesda, MD: National Cancer Institute; 2012 Available at: http://seer.cancer.gov/csr/1975_2009_pops09/. Accessed January 15, 2014.
8. Borst MJ, Ingold JA. Metastatic patterns of invasive lobular versus invasive ductal carcinoma of the breast. *Surgery.* 1993;114: 637–641. [PubMed: 8211676]
9. Schwarz RE, Klimstra DS, Turnbull ADM. Metastatic breast cancer masquerading as gastrointestinal primary. *Am J Gastroenterol.* 1998;93:111–114.

Fig. 1. Endoscopic images of gastrointestinal metastases of breast carcinoma. a Raised, erythematous erosions in the antrum of the stomach (patient 1). b Erythematous raised lesion in the sigmoid colon (patient 2). c Flat-appearing colonic polyp (patient 3)

Fig. 2. High-power images from gastric biopsies (patient 1). a Gastric mucosa infiltrated by large malignant cells resembling pleomorphic lobular carcinoma (H&E stain). b Positive staining for estrogen receptor (IHC)