

CASE REPORT

A rare case of breast cancer metastasis to the colon: a case report

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ABSTRACT

Breast cancer is one of the most common cancers afflicting women and the second leading cause of cancer death. Metastatic breast cancer affects a multitude of tissues and organs including the gastrointestinal tract. There are few reports of colonic metastasis of breast cancer, mostly in patients with disseminated disease. The objective of this report was to relate a case of colonic metastasis from breast cancer seven years after mastectomy and chemotherapy.

Keywords: breast neoplasm, colonoscopy, neoplasm metastasis.

INTRODUCTION

Breast cancer is one of the most common cancers afflicting women and the second leading cause of cancer death¹. Distant metastases are present in about 60% of the patients at the time of diagnosis. When first diagnosed at an early stage, survival rate is increased. Despite a long disease free interval, long-term survivors risk developing metastatic tumors. Common sites of metastasis for breast cancer are bones, lungs, the central nervous system and liver, while gastrointestinal (GI) involvement is rare. There are few reports of colonic metastasis of breast cancer, mostly in patients with disseminated disease. In this report, we relate a case of colonic metastasis from breast cancer seven years after mastectomy and chemotherapy¹⁻².

CASE REPORT

A 74-year-old woman complained of weakness, anemia, intestinal blood loss and diarrhea. She had undergone right radical mastectomy followed by chemotherapy for infiltrating lobular breast tumor seven years ago.

The workup, including a chest x-ray and computed tomography (CT) of the thorax, abdomen and pelvis was normal. Ca 15-3 serum level as well as CEA had gone up in the last month. A nuclear magnetic resonance (NMR) revealed thickness of the ascendant colon and cecum wall with localized lymph nodes. She had been previously submitted to a colonoscopy (six months prior) that revealed sigmoid diverticular disease and a sigmoid adenoma resected by mucosectomy. A new colonoscopy showed

a stricture at the ascendant colon with a friable, ulcerated lesion, which were biopsied. After high-magnification chromoscopic colonoscopy (HMCC) was performed, the lesion showed Vi pit pattern according to Kudo (Figure 1). The pathological evaluation of the tissue by hematoxylin and eosin staining (HE) showed a poorly differentiated carcinoma. Immunohistochemical staining showed infiltration of surface epithelium and lamina propria by neoplastic cells with abundant eosinophilic cytoplasm, many with eccentric nuclei, intracytoplasmic lumina and signet ring appearance. Cytokeratin 7, estrogen receptor and GCDFP - 15/Breast - 2 protein were positive, thus confirming lobular breast carcinoma metastasis (Figure 2) Surgical treatment was decided and a right extended hemicolectomy with end-to-end anastomosis was performed. The patient had an uneventful postoperative course and was released 7 days after surgery.



Figure 1. Imaging irregular areas, nodulation and ulceration in the ascendant colon with a stricture at the ascendant colon with a friable, ulcerated lesion. After chromoscopy with indigo-carmin and magnification, the lesion showed Vi pit pattern.

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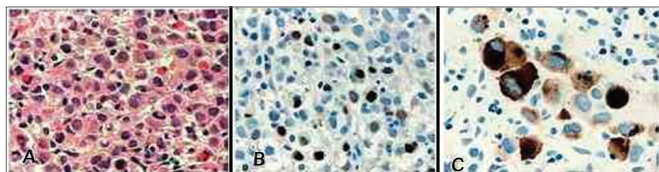


Figure 2. A-C: Immunohistochemistry of the patient with breast cancer metastasis to the colon. A: HE staining (400X); B: estrogen receptor expression (400X); C: gross cystic disease fluid protein 15 (GCDFP-15) (400X).

The patient received systemic chemotherapy postoperatively, as well as hormonal therapy and is free of symptoms, with no bleeding, after a three year follow up period.

DISCUSSION

Metastatic breast cancer affects a multitude of tissues and organs, including the gastrointestinal tract. Although infiltrating ductal carcinoma is more prevalent than infiltrating lobular breast carcinoma as a primary breast tumor, the latter more commonly metastasizes to the gastrointestinal tract¹. There are few reports of colonic metastases of breast cancer^{1,3}. Most reports refer to metastasis of breast carcinoma to the stomach rather than the colon⁴. In different autopsy studies, the incidence rate of gastrointestinal metastasis is up to 4%. The disease-free interval between primary breast cancer and gastrointestinal involvement varies from synchronous presentation up to 12 years².

The patient presented in our report had metastatic lobular breast carcinoma, located at the cecum and ascendant colon. Usually the lesion, which is scirrhous in morphology, infiltrates the colonic wall and grows as gross tumor exophytic mass like the primary adenocarcinoma of the large bowel⁴. The NMR in this case states that the metastatic lesion invaded the entire intestinal wall, from the mucosa to the serosa and was circumferential, thickening the wall and narrowing the lumen.

The presentation of a patient's primary or metastatic disease involving the GI tract is often non-specific. Symptoms vary from asymptomatic abdominal masses to those mimicking ulcerative colitis^{1-2,4,5}. Nausea, dysphagia, anorexia, hematochezia, and heme-positive stools are often common presenting symptoms. These non-specific findings often mimic other GI diseases such as inflammatory bowel disease, ischemic colitis, and diverticulitis. In our case the patient had anemia, diarrhea and intestinal blood loss. The lesions may also be asymptomatic and intestinal obstruction may be the first disease presentation. The laboratory findings may also be unspecific. CA 15-3 serum levels and increased CEA would lead to metastasis investigation^{6,9}.

Differentiating primary colon cancer from metastatic breast cancer to the colon may be challenging. As there are no specific signs, symptoms and laboratory findings of

the gastrointestinal metastases of breast cancer, it is difficult to differentiate them from a primary colonic one. In this case, the diagnosis was possible only after immunohistochemistry⁶.

Immunohistochemistry has aided in differentiating the tumor site of origin. Hormone receptors, such as estrogen and progesterone, are utilized to differentiate breast versus GI primary, but these receptors may be positive in 20-28% of primary gastric carcinomas. The more common antigen markers include cytokeratins (CK) 7 and 20, MUC1, MUC2, and gross cystic disease fluid protein 15 (GCDFP-15)⁶.

Radiological diagnosis at early stage of colonic metastasis is difficult, as there are no substantial changes in the colon. The CT or NMR, disease progresses, may show mucosal thickening and nodularity, multiple strictures and loss of the haustral pattern 1. None of these things are specific for breast cancer metastasis to the colon, so it has to be the pathological evaluation of specimens obtained with colonoscopy or surgical operation that will confirm the diagnosis^{2,5}.

Colorectal breast cancer metastasis is a rare finding and there is no consensus for the treatment of patients with disease involving the colon, with a poor overall prognosis. Median survival after diagnosis is less than three years, with surgical intervention not greatly affecting survival rates. Metastatic disease involving colon may be viewed as a systemic disease, which should be treated with systemic hormonal or chemotherapy either alone or associated to surgery to produce a favorable response in these patients. Stenosis or complete obstructions are indications for surgery.

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