
Breast Cancer Metastasizing to the Rectum

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Metastases evolving from primary breast carcinoma are widely described in the literature. Unfortunately, after varying periods of disease-free survival, nearly half the patients treated for apparently localized breast cancer develop metastatic disease. Bone, lung, liver and brain are the most common sites for extra-

mammary involvement. Albeit few, there are several reports concerning gastrointestinal extrahepatic involvement of the disease. We report the case of a woman with breast cancer who was found to have metastatic involvement of the rectum. Defining whether the rectal tumor is primary or secondary is

critical for prompt treatment and for avoiding unnecessary surgery.

Patient Description

A 68 year old woman was admitted to the surgical department complaining of lower abdominal pain, tenesmus and

alteration in bowel habits. Six years earlier she had undergone a right modified radical mastectomy due to an infiltrating ductal carcinoma on pre-operative biopsy. Five of 12 resected axillary lymph nodes showed evidence of metastatic disease, and 76% of the malignant cells were positive for estrogen receptors. Chest X-ray, chest and abdominal computerized tomography and bone scans did not demonstrate metastatic spread of the disease. Plasma CA-15-3 levels were elevated up to 44.25 (normal up to 30 U/dl). Adjuvant treatment was initiated, consisting of six cycles of cyclophosphamide, methotrexate and 5-fluorouracil, radiotherapy and tamoxifen 20 mg daily.

Two years later (13 years after menopause), the patient experienced several episodes of vaginal bleeding. Hysteroscopy disclosed four endometrial polyps, which were excised. Histology revealed malignant ductal cells infiltrating the endometrium, staining positively for cytokeratin-7, CA-15-3 and estrogen receptors, but negatively for carcinoembryonic antigen and progesterone receptors. Total abdominal hysterectomy and bilateral salpingo-oophorectomy were performed.

Three months before the present admission, she started complaining of constipation, tenesmus and crampy lower abdominal pain. Abdominal CT scan was unremarkable. Stools were negative for occult blood. Colonoscopy showed a bulky, hyperemic, irregular lesion narrowing the rectal lumen 5-9 cm above the anal verge. Biopsies were consistent with non-specific colitis. A TRUCUT™ biopsy of the rectum showed malignant ductal cells infiltrating the rectal wall. Immunohistochemical assay was positive for CA-15-3, estrogen receptors (50%) and cytokeratin-7, but negative for carcinoembryonic antigen, progesterone receptors and cytokeratin-20. The patient was referred for further radiochemotherapy.

Comment

The metastatic capabilities of breast carcinoma are well described. Major sites of extramammary involvement, in decreasing prevalence, are the lungs, bones, liver, adrenal, brain, skin and kidneys. Breast cancer metastases to the gastrointestinal tract are rare. The most common sites for such spread are the stomach and gastroesophageal junction, small intestine and – less prevalent – the colon and rectum [1]. In cases of gastric or esophageal involvement, lymphatic channels were attributed to be the route of dissemination. Metastatic routes to the colon and rectum, either hematogenous or lymphatic, remain unclear [1]. Some reports dealing with colonic or rectal involvement describe metastatic disease as the first presentation of breast adenocarcinoma. In these cases, in order to avoid unnecessary operations it is crucial to distinguish between a metastatic adenocarcinoma of breast origin and another primary tumor, colonic in origin. [2]. However, in most cases there is an appreciable latency between the diagnosis of breast carcinoma and the appearance of gastrointestinal metastases. Darcha et al. [3] report a time span of 11 years.

Furthermore, there seems to be increasing prevalence of colorectal carcinoma in patients with breast cancer [4]. Immunohistochemical stains for cytokeratins, carcinoembryonic antigen, CA-15-3, estrogen and progesterone receptors as well as histologic appearance, are the mainstays for distinguishing metastatic breast carcinoma from primary rectal carcinoma. Many other cellular and membrane markers have been assigned for this task [4]. Indeed, complete immunohistochemical matching of rectal and breast tissues is sufficient to reach the diagnosis of primary breast cancer metastasizing to the rectum. Although an unequivocal linkage is assumed between invasive

ductal carcinoma of the breast and the presence of malignant tissue, histologically and molecularly identical to that tissue in the rectum, one should always consider the possibility that an error has occurred. Mamounas et al. [5] reviewed 1,382 autopsies of breast cancer patients with a second primary, non-mammary tumor. They concluded that in 10.6% of these patients the new malignancy was misinterpreted as breast cancer metastases.

It seems that invasive lobular breast carcinoma has a higher tendency for rectal metastases [3]. Our case presentation is only the third one describing invasive ductal carcinoma metastasizing to the rectum.

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He who strikes the first blow admits he's lost the argument

Chinese proverb