Single colonic metastasis from breast cancer 11 years after mastectomy

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DESCRIPTION

Breast cancer, in particular the lobular histological subtype, is one of the most common malignancies metastasising to the gastrointestinal (GI) tract, along with melanoma, ovarian and bladder cancer. However, the incidence of extrahepatic GI tract metastasis is fairly rare, with the most commonly affected organ being the stomach, followed by the colon and rectum.¹ Colonic involvement from breast cancer generally occurs when the disease has already had widespread diffusion.² Hence, localisation to the colon as the first manifestation of breast cancer metastasis has rarely been reported.

A 72-year-old woman presented to our hospital with progressive left lower quadrant abdominal pain and diarrhoea of 3 weeks duration. She denied blood or mucous in the stools or tenesmus. There was no weight loss, nausea, vomiting or loss of appetite. Her abdomen was distended but not painful on palpation. Laboratory analyses were unremarkable and routine stool analysis showed no evidence of infection. She had a history of hypertension, diabetes and breast cancer treated 11 years before. At the time of the diagnosis, the pathological stage and grade of breast cancer were T3N1M0 and G3, respectively, and the Ki67 expression was 60%. The patient underwent total mastectomy with surgical axillary staging and adjuvant chemotherapy (5-fluorouracil, epirubicin, cyclophosphamide, every 21 days for 3 cycles followed by paclitaxel for 12 weeks) and radiation therapy to chest wall+infraclavicular and supraclavicular areas (total dose 50 Gy). Furthermore, the tumour was positive for oestrogen (70%) and progesterone (80%) receptors and the patient was treated with hormonal treatment, an aromatase inhibitor, for 5 years (anastrozole). She underwent physical examination every 6 months, and annual mammography and abdominal ultrasound.

Abdominal X-ray showed mild colonic dilation. Colonoscopy was performed, revealing a 2 cm substenotic sigmoid segment due to circumferential thickening and oedema of the mucosa (figure 1). The narrowed lumen was easily passed with a standard colonoscope and the bioptic sampling was performed within the stenosis with a 'bite-on-bite' technique. No other synchronous lesions were detected at colonoscopy.

Histology showed mucosal tissue fragments with dense focal plasmacytoid-like cellular infiltrates within the lamina propria. Immunohistochemistry revealed that these cells were likely derived from a breast lobular carcinoma (expressing CK 7 and GATA3, figure 2), and were positive for oestrogen as well as progesterone receptors, but negative for human epidermal growth factor receptor-2. On the

Figure 1 Colonoscopy: at the sigma, a 2 cm substenotic segment due to a circumferential thickening and oedema of the mucosa was diagnosed. The mucosa was intact without ulcer or bleeding site.

basis of immunohistological results, a diagnosis of colonic metastasis of breast lobular carcinoma was made. The subsequent total body CT scan and positron emission tomography (PET)/CT showed the absence of any further secondary localisation of the disease. The patient was later submitted to surgical resection because of impending obstruction, and continued on medical treatment. After 2 years of follow-up, the patient has not presented any colonic relapse, although she developed diffuse bone metastasis.

The occurrence of GI metastases from breast lobular cancer is quite rare and likely underestimated because, very often, patients have died from cachexia due to widespread diffusion of the disease, before achieving a diagnosis. The clinical

Figure 2 Immunohistochemistry revealed that the dense cellular infiltrates were likely derived from a breast lobular carcinoma since a positivity for the expression of CK7 was observed.

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presentation is highly variable and aspecific, depending on the site and extent of the lesion within the GI tract. The endoscopic presentation generally mimics primitive colon tumour, mainly represented by a protruding, ulcerated and easily bleeding mass. Our case presented unique features since the mucosa was intact; indeed the patient did not present any laboratory abnormalities. The endoscopic finding of a circumferential lesion covered by oedematous mucosa suggested the presence of a submucosal lesion. Hence, a 'bite-on-bite' bioptic sampling technique was implemented in order to gather a sample deeper in the mucosa, providing more tissue to the pathologist. The samples were adequate to perform all the immunohistochemistry analyses necessary for the diagnosis, in particular CK7 and GATA3, and to assess the oestrogen and progesterone receptors, frequently positive in metastatic breast cancer. Since the patient presented an impending occlusion and only one localisation was detected, a surgical resection was performed. Several risk factors for developing metastasis during follow-up were present at the time of diagnosis: advanced stage and grade, as well as high Ki67 expression (60%); therefore the patient was also treated with adjuvant systemic therapy. However, the patient developed diffuse bone metastasis within 2 years after surgical resection; at the time of the diagnosis of colonic involvement, total body CT scan and PET/CT excluded clear pathological findings. These procedures were repeated once the patient developed bone pain.

In conclusion, in a patient with a history of breast cancer, even if treated more than a decade before, any mass-forming lesion of the GI tract, in particular of the stomach and colorectum, should be cautiously evaluated and the patient's history

provided to the pathologist, in order to avoid delay in the diagnosis.³

Learning points

- ▶ Any mass-forming lesion in the colon of a patient with a history of breast cancer should be cautiously evaluated.
- ▶ The patient's history should always be provided to the pathologist in order to avoid delay in the diagnosis.
- ▶ The patient should be carefully evaluated for any additional metastasis with diagnostic studies (ie, CT scan and positron emission tomography/CT scan).

Contributors GG, DS and AG were responsible for acquisition of data. LF was involved in drafting of the manuscript.

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