CLINICAL CASE

Colorectal breast carcinoma metastasis diagnosed as an obstructive colonic primary tumor. A case report and review of the literature

Métastase colorectale d’un cancer du sein diagnostiquée comme tumeur obstructive primitive du côlon

J. Théraux\textsuperscript{a}, F. Bretagnol\textsuperscript{a,\ast}, N. Guedj\textsuperscript{b}, D. Cazals-Hatem\textsuperscript{b}, Y. Panis\textsuperscript{a}

\textsuperscript{a} Department of Colorectal Surgery, pôle des maladies de l’appareil digestif (PMAD), Beaujon Hospital (AP–HP), 100, boulevard du Général-Leclerc, 92118 Clichy, France
\textsuperscript{b} Department of Pathology, pôle des maladies de l’appareil digestif (PMAD), Beaujon Hospital (AP–HP), 100, boulevard du Général-Leclerc, 92118 Clichy, France

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Summary Common sites of colorectal breast carcinoma metastasis are bones, lungs, the central nervous system and the liver. Metastases in the gastrointestinal (GI) tract are rare and especially involve the stomach rather than the colon. Clinical or radiological features usually cannot differentiate them from a primary colorectal tumor, resulting in inappropriate treatment. In some cases, this lesion suggests multifocal spread of breast cancer with peritoneal carcinomatosis. Colorectal breast cancer metastasis is a rare finding and there is no consensus on the management of these lesions. The present case report describes a 69-year-old female with metastatic breast cancer presenting as an obstructive tumor of the transverse colon.

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Résumé Les localisations des métastases de cancer du sein sont les os, les poumons, le système nerveux central et le foie. Les métastases dans l’appareil digestif sont rares et concernent particulièrement l’estomac. Les outils cliniques ou radiologiques habituellement ne peuvent pas les différencier d’une tumeur colorectale primitive, conduisant à un traitement parfois inadéquat. Dans certains cas, cette lésion suggère la diffusion multifocale du cancer du sein dans le cadre d’une carcinose péritonéale. La métastase colorectale de cancer du sein est une conclusion rare et il n’y a aucun consensus sur la gestion de ces lésions. Le présent cas clinique décrit l’observation d’une femme de 69 ans ayant un cancer du sein métastatique se présentant comme tumeur obstructive du côlon.

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* Corresponding author.
E-mail address: frederic.bretagnol@bjn.aphp.fr (F. Bretagnol).

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Colorectal breast carcinoma metastasis diagnosed as an obstructive colonic primary tumor

Report of a case

A 69-year-old female patient was referred for clinical colonic obstruction with crampy abdominal pain, nausea and vomiting. This patient presented a significant past history of bilateral breast cancer. Radical right mastectomy associated with lymphadenectomy and concomitant reconstruction was performed in 1980 for an invasive ductal carcinoma. Twenty-one years later (2001), she presented with a 2-cm lump in the upper-medial-quadrant of the left breast and underwent tumorectomy (ductal carcinoma with no lymph node metastasis) without any adjuvant treatment. In 2004 and 2007, pulmonary wedge resection and brain metastasectomy were performed for secondary breast metastases. Because the patient refused chemotherapy and radiotherapy, only hormonotherapy (anastrozol-Arimidex®) was administered.

The patient presented at the emergency department, in 2008, with symptoms of complete bowel obstruction. CT-scan showed an obstructive lesion located in the transverse colon. No liver or peritoneal metastases were suspected at CT-scan (Fig. 1). A colonic stent was first attempted for decompression but failed resulting in colonic perforation and the patient underwent emergency laparotomy. There was localized peritonitis with a 4-cm obstructive lesion in the right transverse colon. Colectomy of the transverse colon with ileostomy and colostomy was performed. There was no generalized carcinomatosis but a 5 mm lesion was found on the peritoneum of the right iliac flank and resected.

Macroscopic assessment of the resected colon showed complete stenosis of 4 cm (Fig. 2). At the opening, a firm white ulcerative lesion involving the entire thickness of the colon wall was observed. No pre-existing polypoid lesions were identified on the colon mucosa. The morphological examination showed a poorly differentiated ductal breast carcinoma. Indeed, architecturally, the tumor cells were arranged mostly in single file infiltration. Occasionally, areas of tubular structures with central lumina in tumour cell groups were noted. The carcinoma cells had abundant and eosinophilic cytoplasm, highly pleomorphic nuclei and prominent nucleoli were observed (Fig. 3). Vascular invasion and two microscopic nodules of peritoneal carcinomatosis were noted. On immunohistochemistry analysis, tumor cells strongly expressed cytokeratin 7 and showed a nuclear expression with anti-estrogen and progesterone receptor antibodies. Immunohistochemistry of cytokeratin 20 and c-Erb 2 was negative. The, 5 mm peritoneal small lesion was related to carcinoma.

The patient was discharged eight days later after surgery with no postoperative complications. She received postoperative hormone treatment. She was readmitted, two months latter for stoma reversal. At 12 months follow-up the patient was alive with no suspicious CT-scan lesions suggesting recurrence.

Discussion

Breast carcinoma is the most common cancer, affecting women. In France, the incidence is evaluated around 41 000 cases with 11 000 deaths per year [1]. The most common metastatic sites are well-known including the lung, bones, brain and liver whereas lesions to the GI tract remain rare. In a large series analyzing more than 2500 cases of breast cancer with metastatic disease over an 18-year period, only 17 patients (lesser than 1%) were found to have metastasis to the GI tract reflecting how rare metastases are in this site [2].

Metastases in the stomach [3] and small intestine [4] have been more frequently reported than colonic [5] or rectal [6,7] involvement. Metastatic tumors of the GI tract are unusual but probably more common than clinically suspected as shown by autopsy series, with an occurrence rate of 6 to 35% [5,8]. In a retrospective review of the Mayo Clinic, reporting 23 cases of GI metastases, the sites were as follows: esophagus (8%), stomach (28%), small intestine (19%) and colon-rectum (45%) [5].

Histopathologically, most GI metastases from breast cancer are due to infiltrating lobular carcinoma, despite the much greater prevalence of infiltrating ductal type among women with breast cancer (90%) [3,4,6,8]. Mc Lemore et al. have reported that invasive lobular carcinoma represented 34/53 (64%) of GI metastases [5]. It has also been reported that even in patients with a mixed ductal and lobular type primary breast carcinoma, the lobular type is favoured in metastatic growth [4]. The present patient had a significant
past history of bilateral breast cancer including a ductal type in both which has rarely been described in literature (11% of patients with a history of bilateral breast cancer in the Mayo Clinic series) [5], and more especially, an infiltrating ductal type for the first and a ductal type with no lymph node metastasis for the second. Thus, it could be argued that the colon metastasis was probably related to the first infiltrating breast carcinoma, 28 years ago. Moreover, the colon lesion was infiltrative, as described in reports about lobular carcinoma [8]. Although primary scirrhous colon cancer has been described, the patient’s history of breast cancer helped make the diagnosis. The lack of dysplasia or atypia of the colon epithelium or adenoma and the glands surrounding the malignant cells is often helpful in the differential diagnosis.

Differentiation between adenocarcinoma from GI tract or the breast can also be made by immunohistochemical staining. In the present case, the tumor stained strongly for cytokeratin 7 and not for cytokeratin 20. Moreover, informative markers such as estrogen and progesterone receptors are usually positive in breast carcinoma metastases and can facilitate an accurate diagnosis [9].

The clinical presentation of metastatic disease to the GI tract is diverse. In the present case, the patient had clinical symptoms of complete large bowel obstruction including vomiting, abdominal pain and restraint of gas and stools. There are other reports presenting cases with metastasis including symptoms of inflammatory bowel disease, ulcerative colitis or Crohn’s disease [8]. The lesions may also be asymptomatic [10]. Moreover, the differential diagnosis between metastases and a primary colorectal tumor can be difficult because of the often prolonged disease-free interval from the breast cancer. In most series reporting colorectal breast carcinoma metastasis, the median interval between diagnosis and presentation of metastases is six to eight years [4—6,8,5,11]. The suspected interval of 28 years in our report, is one of the longest in the literature, and 10 years or more has rarely been reported [10,12,13].

All these difficulties in the differential diagnosis between a primary colon tumor and a metastatic lesion can result in inappropriate management. A few reports have suggested that systemic hormonal or chemotherapy either alone or adjunct to surgery have produced a favorable outcome and quality of life in these patients. Because involvement of the GI tract suggests a systemic disease, some authors did not recommend surgical treatment [14]. In the present case, the colon obstruction required immediate medical management with an initial attempt at a stent then surgical removal of the tumor because of the colon perforation. This emphasizes the importance of an early diagnosis making rapid systemic treatment possible. Not surprisingly, laparotomy revealed more extensive disease than shown in the preoperative investigations but fortunately, the carcinomatosis lesion could be resected. In most reported cases, colorectal metastases are part of widespread metastatic disease [3—5]. In the Mayo Clinic series, GI metastases were associated with carcinomatosis lesions in 25% of cases and 24% of the patients had metastases in two or more GI sites [5].

However, isolated GI metastases should be resected when possible. Mc Lemore et al. didn’t show that surgery had a significant effect, on the median length of survival for the entire group (28 months for the surgical group vs. 26 months for the chemotherapy group, NS) but there was a trend toward a more prolonged median survival for surgery in patients with only GI metastases, 44 months vs. 9 months [5].

In conclusion, colorectal breast carcinoma metastasis are very rare. This diagnosis should obviously be suspected when the patient has a history of breast carcinoma, even after a long disease-free interval from the primary tumor. Detailed pathological analysis can be useful with specific markers such as estrogen and progesterone receptors. Unfortunately, in most cases, colorectal metastases are part of widespread metastatic disease and early diagnosis may help to propose prompt initiation of systemic treatment. Surgery does not significantly extend overall survival but may be considered in a selected group of patients.
References