
CASE REPORT

Metastatic Invasive Lobular Breast Carcinoma Mimicking Obstructive Primary Colonic Malignancy: A Case Report

FFY Wan¹, TWY Chin¹, WK Ho², YK So³

¹*Department of Radiology and Imaging, Queen Elizabeth Hospital, Hong Kong SAR, China*

²*Department of Clinical Oncology, Queen Elizabeth Hospital, Hong Kong SAR, China*

³*Department of Pathology, Queen Elizabeth Hospital, Hong Kong SAR, China*

INTRODUCTION

Worldwide, breast cancer is the most common cancer in women. Distant metastases primarily involve the lungs, bones, liver and brain, while metastasis to the gastrointestinal tract is extremely rare.¹ We present the radiological and pathological findings in a patient with metastatic invasive lobular breast carcinoma (ILC) and initial presentation as an obstructing colonic tumour.

CASE REPORT

A 40-year-old woman with good past health presented with a 2-week history of repeated vomiting. Abdominal radiograph revealed multiple dilated large bowel loops. Urgent computed tomography of the abdomen and pelvis revealed a circumferential colonic tumour at the splenic flexure causing upstream bowel dilatation (Figure 1) and a solid peritoneal nodule suspicious of metastasis (Figure 2). An enhancing irregular left breast mass with spiculated margin, invading the underlying pectoralis major muscle, was noted incidentally on the computed tomography scan (Figure 3). The patient subsequently

underwent emergency surgery that revealed an obstructing circumferential tumour at the splenic flexure of the colon and multiple small peritoneal nodules. Extended right hemicolectomy was performed.

Mammography and breast ultrasonography were performed 1 week postoperatively. The former showed an irregular high-density mass with spiculated margins at the upper inner quadrant of the left breast, associated with architectural distortion and retraction of the nipple and skin (Figure 4). On ultrasound, the corresponding left breast mass was hypoechoic with irregular shape, spiculated margins, posterior shadowing, architectural distortion, and invasion of the underlying pectoralis major muscle (Figure 5). Multiple enlarged left axillary lymph nodes with cortical thickening were suspicious of nodal involvement (Figure 6).

The initial clinical diagnosis was synchronous colon and breast cancer. Nonetheless pathological examination of the colonic tumour showed histological features and an

Correspondence: Dr FFY Wan, Department of Radiology and Imaging, Queen Elizabeth Hospital, Hong Kong SAR, China
Email: wfy471@ha.org.hk

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Figure 1. Computed tomography showing an obstructing tumour at the splenic flexure of colon (arrow) causing upstream bowel dilatation.

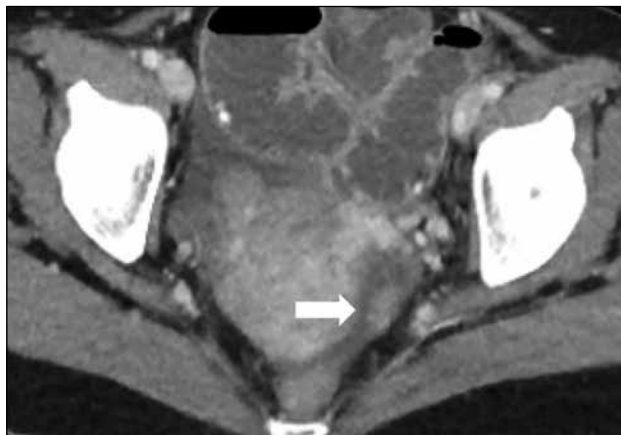


Figure 2. Computed tomography showing a suspected small peritoneal metastasis (arrow).

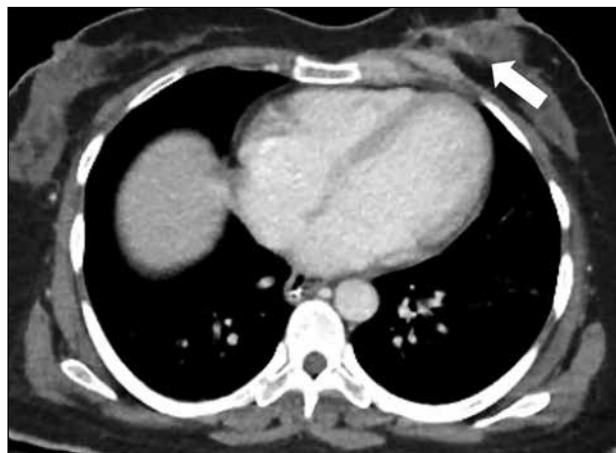


Figure 3. Computed tomography showing the incidental finding of an irregular enhancing left breast mass with spiculated margin and invasion of the underlying pectoralis major muscle (arrow).

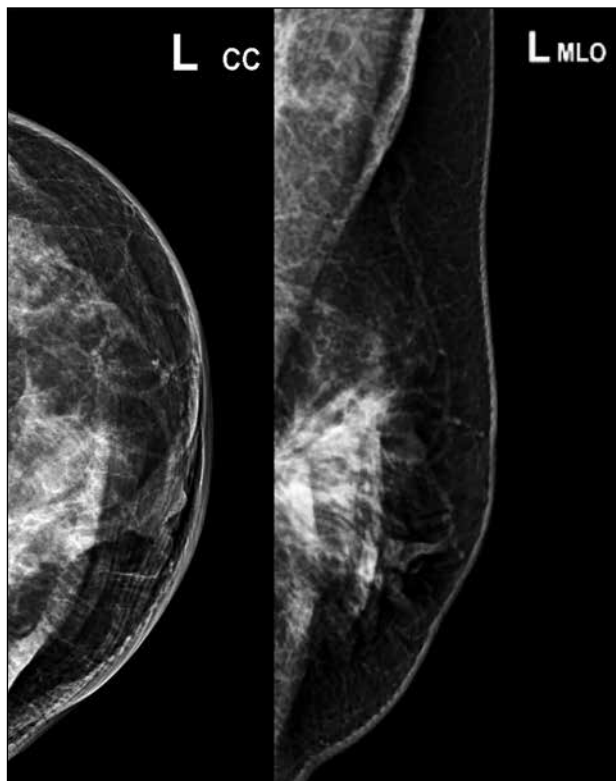


Figure 4. Mammogram of the left breast showing an irregular high-density mass with spiculated margins at the upper inner quadrant, associated with architectural distortion and retraction of the nipple and skin.

immunohistochemical profile (GATA binding protein 3 and oestrogen and progesterone receptor positive; E-cadherin negative) suggestive of a primary breast ILC (Figure 7). The full-thickness circumferential involvement of the colonic wall from the mucosa to

serosa and the absence of adjacent peritoneal nodule were consistent with haematogenous metastasis to the colon. A section of an intraoperative peritoneal nodule revealed fibroadipose tissue infiltrated with metastatic carcinoma and morphology similar to that of the colonic

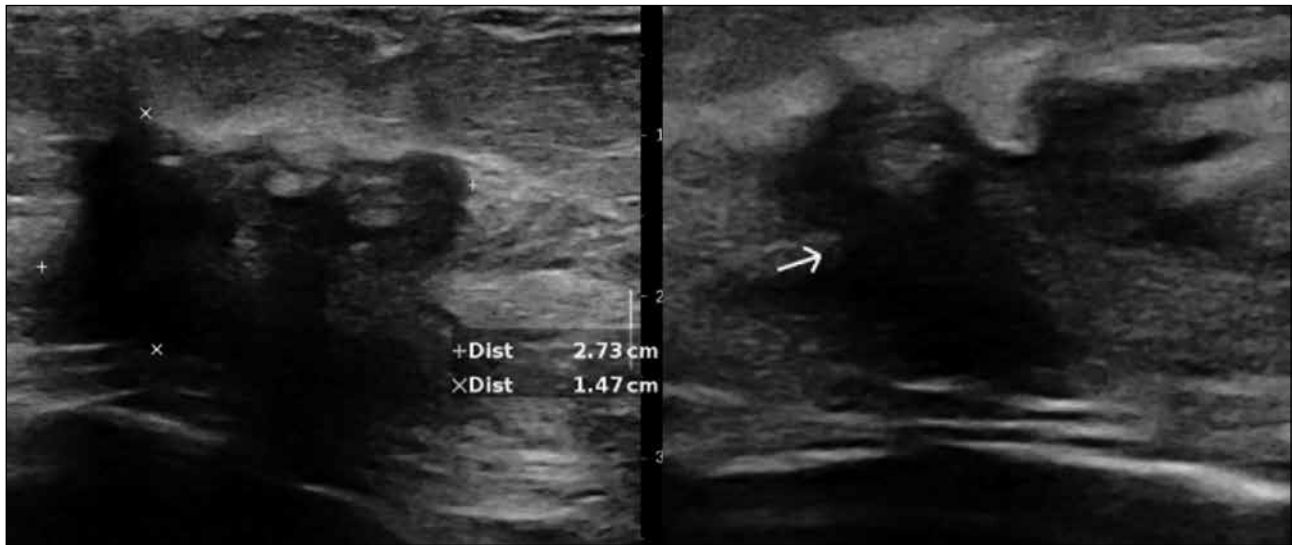


Figure 5. Ultrasound of the left breast mass showing significant posterior shadowing and invasion of the underlying pectoralis major muscle (arrow).

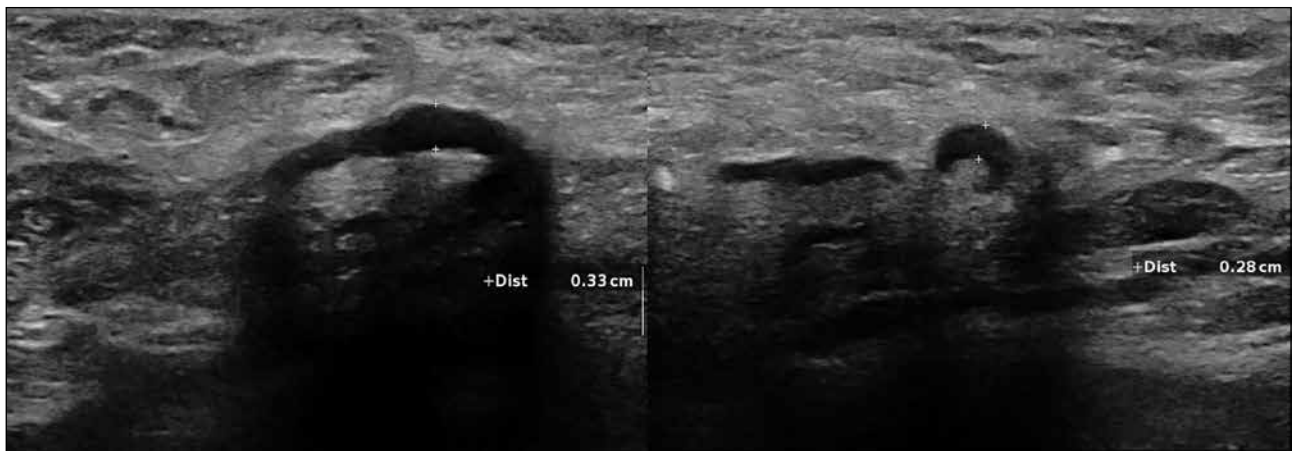


Figure 6. Ultrasound of the left axilla showed enlarged lymph nodes with cortical thickening.

tumour. Subsequent ultrasound-guided core biopsy of the left breast mass using a 14-G Tru-Cut biopsy needle (Achieve Automatic Biopsy Device; Merit Medical, South Jordan [UT], United States) and fine-needle aspiration of the left axillary lymph node using a 21-G needle confirmed ILC with ipsilateral axillary lymph node metastasis. Stage IV breast cancer with colonic metastasis was confirmed and the patient was referred for consideration of systemic treatment.

DISCUSSION

ILC is the second most common histological type of invasive breast carcinoma after invasive ductal

carcinoma (IDC), accounting for 5% to 15% of all breast cancers.¹ It is known to have an atypical pattern of metastatic spread and diffuse growth. Positron emission tomography–computed tomography (PET-CT) is useful for systemic staging of breast cancer. Nonetheless not all ILCs are hypermetabolic on ¹⁸F-fluorodeoxyglucose PET-CT. Since nearly 95% of ILCs are oestrogen receptor–positive, a novel PET tracer targeting the oestrogen receptor (¹⁸F-fluoroestradiol) has shown promising results in detecting metastases in ILC.²

Compared with IDC, ILC has a higher propensity to metastasise to unusual sites such as the gastrointestinal

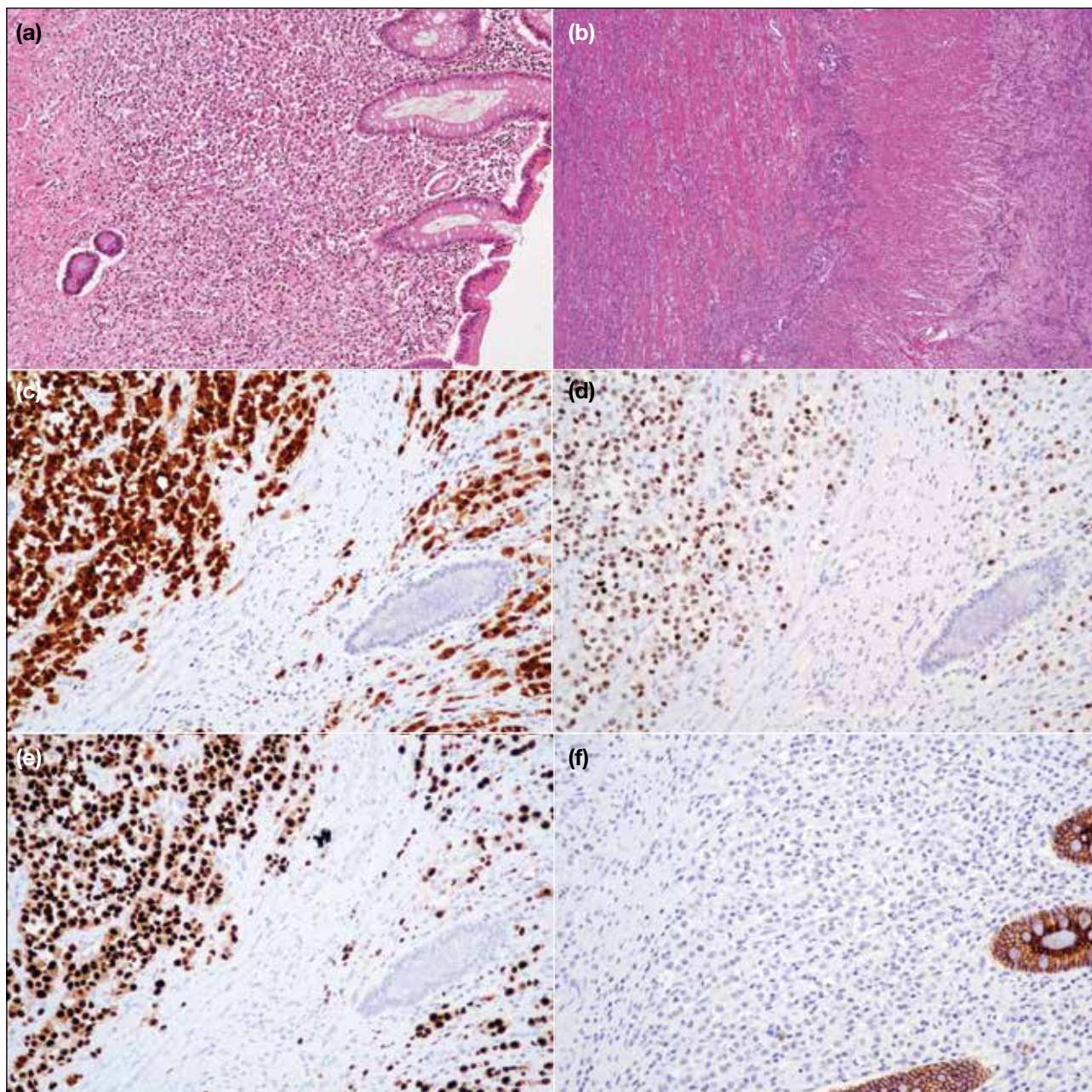


Figure 7. Histological examination of the colon specimen. Haematoxylin and eosin staining showed neoplastic infiltration with mucosal [(a), $\times 10$] and muscularis propria [(b), $\times 4$] involvement. Immunohistochemical staining ($\times 20$) showed positive results for GATA binding protein 3 (c), oestrogen receptor (d), progesterone receptor (e), and negative result for E-cadherin (f).

tract, peritoneum, and ovaries.³ Despite the higher prevalence of IDC (90%) among patients with breast cancer, most gastrointestinal metastases are from ILC.³ There is currently no clear explanation for the difference in metastatic patterns of ILC and IDC. It has been postulated that the loss of E-cadherin in ILC, which is responsible for cell-to-cell adhesion, accounts for its more invasive behaviour.⁴

Among the cases of ILC with gastrointestinal metastases, stomach and small intestine are the more frequent sites of metastases compared with the colon. Gastrointestinal metastases are usually metachronous and develop after diagnosis of a breast primary. In a case series of gastrointestinal metastases from ILC, the mean interval between diagnosis of primary breast cancer and gastrointestinal metastasis was 4 years.⁵ Our patient with

ILC and initial presentation as large bowel obstruction due to colonic metastasis is extremely rare. It should be noted that endoscopic biopsy of gastrointestinal metastases has a higher false negative rate compared with primary colonic cancer because of the relatively late involvement of the avascular mucosal layer by the metastatic tumour. Once a diagnosis of gastrointestinal metastasis has been made, the 5-year survival rate is reported to be 29%.⁵ This is similar to the rate of 25% reported by the National Cancer Institute for metastatic breast cancer.⁶

Since both colonic metastases from breast cancer and primary colonic carcinoma can have a similar macroscopic appearance, the presence of a suspicious breast lesion or a history of breast ILC should raise the suspicion of gastrointestinal metastasis. Further pathological examination is warranted with appropriate immunohistochemical staining. In our case, positivity of GATA binding protein 3,⁷ oestrogen and progesterone receptors suggested a breast primary, while negative staining for E-cadherin was suggestive of ILC.⁸

CONCLUSION

To the best of our knowledge, this is the first report in the literature of ILC with initial presentation as obstructing colonic metastasis. It highlights the unique feature of ILC of its potential for gastrointestinal tract involvement. Knowledge of the pattern of spread of ILC raises clinical

suspicion and can guide subsequent investigation and management.

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