

Gastric Metastasis from Primary Breast Carcinoma: The Role of Gastric Resection and Impact on Survival, A Case Report

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ABSTRACT

Breast carcinoma tends to metastasize to the gastrointestinal system especially to the stomach often presenting as Linitis plastica. Invasive lobular carcinoma (ILC) is the most common histologic type that metastasizes to the stomach. This is a case report of a 68-year-old lady with breast ductal carcinoma diagnosed two years back and in remission, who presented with abdominal pain and dyspepsia of 4 months duration. Upper gastrointestinal endoscopy showed an ulcerated growth in the stomach. Biopsy showed gastric tissue fragments with an invasive carcinoma. The immunohistochemical profile was consistent with metastasis from the known primary breast carcinoma. The tumor did not respond to systemic treatment, and the mass was increasing in size. As the primary breast disease was controlled, and there was no evidence of metastasis elsewhere, the patient underwent a total gastrectomy. The histopathology further confirmed metastasis from the primary breast carcinoma. She was on further systemic treatment. However, during follow-up, she developed liver metastasis and succumbed to her illness in October 2025.

Distinguishing primary gastric malignancy from metastasis is important for treatment. This case highlights the importance of surgical intervention to reduce disease burden when the primary disease is in remission, as it improves overall survival. However, in the current study, the patient was not responding to second-line treatment after the development of liver metastasis, which was a possible cause of death.

Keywords: Breast carcinoma, gastric metastasis, immunohistochemistry, gastrectomy, survival.

INTRODUCTION

The incidence of gastric metastasis from breast cancer is 0.3% [1]. Different histological types of breast cancer have a propensity to metastasize to different organs. Invasive breast carcinoma of no special type (ductal) (IDC) metastasizes mainly to the lungs, bones, and liver. Invasive lobular carcinoma (ILC) tends to metastasize to the gastrointestinal system, especially to the stomach, with a Linitis plastica-like presentation [2]. Though IDC represents about 80% of all breast carcinomas, the majority of reported gastric metastases are from ILCs (65.4%). The Pectasides *et al.* study reported that 75% of cases presenting with gastrointestinal metastasis were from ILC [3]. Metastases in the gastrointestinal tract have a reported incidence of 0.3% to 18% [3-5]. Breast cancer metastasis to the gastrointestinal, particularly to the stomach, can present with a wide range of clinical and radiological findings, often mimicking other common pathologies. The most common biomarker receptor status observed was ER+/PR+/HER2- [6]. We report this unique study as it is a case of IDC metastasizing to the

stomach mimicking a primary gastric carcinoma clinically, and to emphasize the importance of immunohistochemistry for diagnosis and the role of gastrectomy in case of isolated metastasis with remission of the primary breast tumor.

CASE REPORT

A 68-year-old lady was diagnosed with right breast carcinoma two years back, for which she underwent modified radical mastectomy and axillary lymph node dissection with negative excision margins. The histopathology showed invasive ductal carcinoma grade 3 with high-grade ductal carcinoma *in situ* (DCIS). Lymph nodes were negative for metastatic tumor. Biomarker testing showed the tumor to be ER and PR-positive and HER2-negative. She received adjuvant chemotherapy. Routine follow-up for 2 years showed no evidence of local recurrence or distant metastasis. Later, she presented with vague abdominal pain and dyspepsia of 4 months' duration. There was no history of vomiting or dysphagia. Her appetite and bowel habits were normal. Upper gastrointestinal endoscopy showed an ulcerated growth in the stomach. CT scan showed a focal wall bulge along the greater curvature reflecting the underlying pathology. PET scan showed intense, curvilinear FDG-avid gastric wall thickening. There was no evidence of abnormal FDG

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uptake in the right chest wall and axillary region to indicate local disease recurrence. A gastric biopsy was taken.

Histopathology showed fragments of gastric mucosa infiltrated by an invasive carcinoma extending into the lamina propria. The tumor cells were arranged in nests, focal tubules, small clusters, and a few single cells (**Fig. 1**). The tumor cells exhibited a high N: C ratio, moderate eosinophilic cytoplasm, pleomorphic, hyperchromatic nuclei, and conspicuous nucleoli. Occasional mitotic figures were present. There was no evidence of dysplasia in the gastric epithelium. The tumor cells were positive for CK Cam 5.2, GATA3 (**Fig. 2**), and ER (**Fig. 3**) and negative for Ck7, chromogranin,

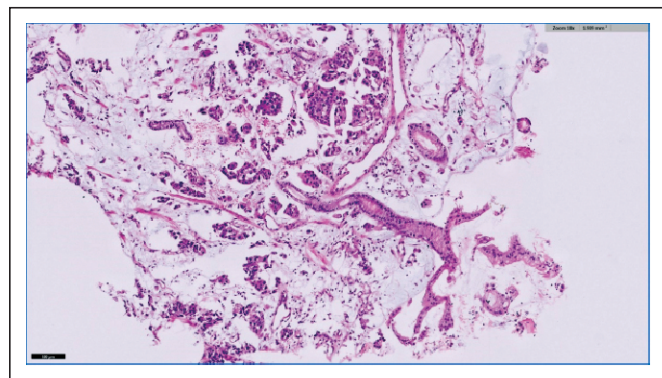


Fig. (1): Gastric mucosa infiltrated by a neoplasm arranged in nests, tubules, and a few single cells. (H & E 10x).

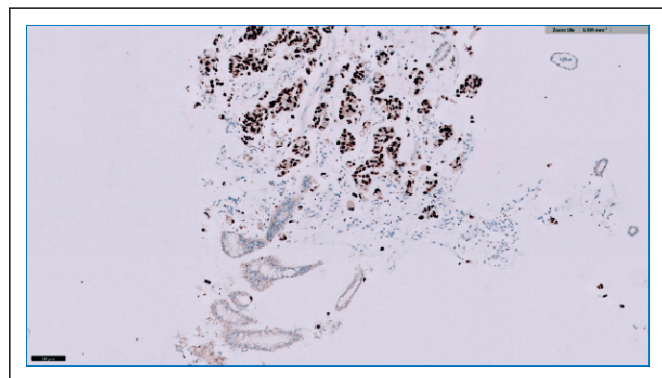


Fig. (2): Tumor cells exhibiting strong nuclear staining for GATA-3. (H & E 40x).

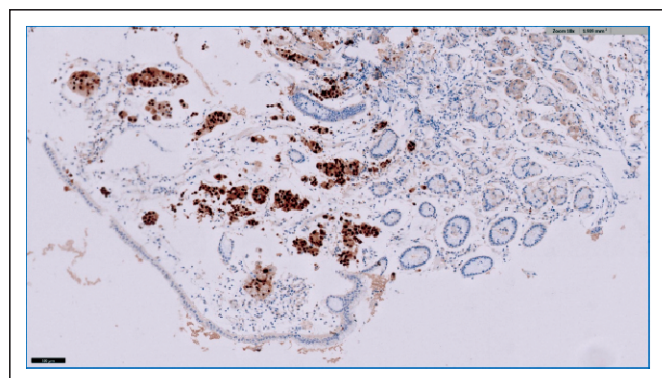


Fig. (3): Tumor cells showing moderate staining for Estrogen Receptor (ER) in 20% neoplastic cells. (H & E 40x).

synaptophysin, and CDX2. HER-2 was equivocal (Score 2+) and FISH analysis was negative. The morphological and immunohistochemical profile was consistent with metastatic carcinoma from the known primary breast origin.

Following biopsy, the patient was started on systemic chemotherapy at another oncology center, for which further details are not available. However, the tumor was not responding to treatment. A repeat endoscopy at our center showed increase in the size of the mass involving the fundus, body and antrum. In the absence of other documented metastatic disease, it was decided to offer the patient surgical management. The patient underwent Laparoscopic Total Gastrectomy with Roux-En-Y esophagojejunal anastomosis and D2-Lymph node dissection. Her postoperative course was marked by the development of a collection in the left upper quadrant and a left pleural effusion, which were drained *via* an image-guided interventional radiologic approach. She made good progress, and she was discharged home in a stable condition about 2 weeks post-operatively.

On histopathological gross examination, the stomach showed a huge ulceroproliferative tumor measuring 14 x 6 x 3.5 cm with serosal involvement and multiple lymph nodes in the perigastric fat tissue (**Fig. 4**). Microscopy showed diffuse sheets of tumor cells which were positive for GATA3, GCDFFP-15, E-Cadherin and ER (**Fig. 4**) and negative for CK20 and CDX2, thus further confirming metastasis from primary breast carcinoma. The resection margins were negative for tumor. 5 out of 22 lymph nodes showed metastatic IDC. There were no obvious gross lesions in the liver at the time of surgery. During regular follow-up, there was no evidence of disease recurrence at the esophago-jejunosomy site. Patient treatment was continued at the treating Oncology Center. However, a CT scan performed in May 2025, 8 months after the surgery, showed significant bilobar liver metastasis. The patient was then started on a second-line systemic treatment, though the exact regimen given is not known. However, she succumbed to her illness in October 2025.

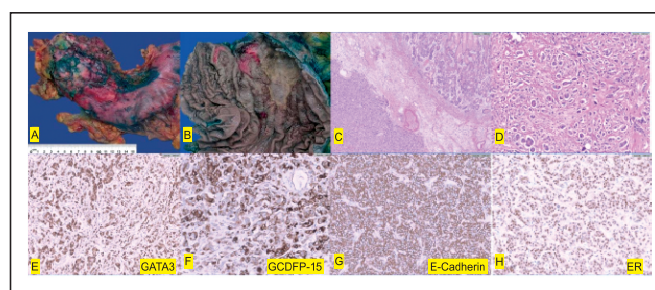


Fig. (4): (A): Gastrectomy specimen with tumour involving serosa, (B): Mucosa with ulcero-proliferative tumour, (C): Tumour with overlying normal gastric mucosa (H&E, 50X), (D): Tumour cells arranged in cords, small nests, small tubules and single cells (H&E, 200X), (E): Tumour cells positive for GATA3, (F): GCDFFP-15, (G): E-Cadherin, (H): Estrogen receptor.

DISCUSSION

D'Angelo *et al.* performed an extensive literature search on breast cancer metastases to the stomach and found 11 reviews and 36 case reports. They found the findings of these studies similar regarding important aspects of gastric metastases from breast carcinoma. The study also emphasized the importance of suspecting metastatic breast cancer in patients with gastric tumors with a history of breast carcinoma [7].

ILC is the most common histologic type metastasizing to the stomach [3]. Our case is unique since the patient had invasive ductal carcinoma and presented with an ulcerated growth in the stomach rather than Linitis plastica.

Gastric metastasis can develop years after treatment of primary breast carcinoma. A study by van Bekkum *et al.* found the median interval between the diagnosis of breast cancer and gastric metastasis to be 92.2 months, with a range of 0-413 months [8]. Ma *et al.* studied 54 cases, where the median interval between the diagnosis of breast carcinoma and presentation of gastric metastases was only 1.25 months, although it ranged from 0 to 72 months [9]. Chemotherapy resistance and tumor stem cell dormancy are considered contributory factors in driving metastasis and causing recurrence, during which tumor stem cells undergo epithelial-mesenchymal transition [1].

Shin *et al.* reported a 72-year-old woman diagnosed with ILC of both breasts and who later presented with a fungating and infiltrative mass [10]. This shows that gastric metastasis from breast cancer can mimic primary gastric carcinoma clinically and endoscopically. Differentiation between the two is essential as the treatment of breast carcinoma with gastric metastasis is different from primary gastric adenocarcinoma.

Breast carcinoma can mimic primary gastric carcinoma histologically. ILC and primary gastric carcinoma can exhibit single-cell infiltration and signet-ring cell morphology [11]. The use of immunohistochemical markers to differentiate them is of prime importance. Hui *et al.* successfully discriminated between breast and gastric primary sites in 15 of 16 cases using a panel of immunohistochemical markers. Their study found that ER and GATA-3 expression were associated with breast origin, with 100% sensitivity and specificity, respectively. CK20 and CDX2 showed the strongest discriminatory value for gastrointestinal origin. They concluded that ER and GATA-3 are the most supportive markers of mammary origin and an effective panel for distinguishing metastatic breast from primary gastric tumours when combined with CK20 and CDX2 [11].

Regarding treatment, the available literature shows consensus for systemic chemotherapy as the first-line treatment for breast carcinoma metastasis to the stomach. However, in cases of isolated gastric metastasis and when the primary disease is under control, gastric resection is the preferred treatment [12]. Numerous studies have shown wide variation in disease-free survival, ranging from 0.5 months to 30 years. However, the median overall survival was 24 months [13, 14]. Multiple studies have reported a significant increase in median survival in patients who underwent gastric resection for overall disease control [12, 15, 16]. This underscores the importance of considering gastrectomy in patients with isolated gastric metastasis and when the primary tumor is in remission. In this case, the patient's follow-up was uneventful following gastrectomy for 8 months, until the development of liver metastasis, which in turn affects survival.

CONCLUSION

Case reports on breast carcinoma metastasizing to the stomach continue to be published emphasizing the possibility of metastasis when confronted by a gastric mass in a known breast cancer patient. The takeaway lessons from this study are that immunohistochemistry (IHC) is essential for differentiating metastasis from the breast to a primary gastric carcinoma, as both cases clinically, endoscopically, and histologically appear similar. Also, though systemic chemotherapy is the preferred treatment for metastatic breast carcinoma, the role of gastric resection needs to be emphasized. It is indicated in cases of isolated gastric metastasis when the primary tumor is in remission.

CONSENT FOR PUBLICATION

Informed consent was taken from the patient.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

ACKNOWLEDGEMENTS

Declared none.

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