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CASE REPORT

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# Isolated gastric outlet obstruction secondary to metastatic invasive lobular breast cancer: A case report

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**Key Clinical Message**

Isolated gastric outlet obstruction secondary to breast carcinoma is a rare and often challenging diagnosis. Clinicians must be cognizant of this diagnosis even in cases where breast cancers have been in remission alongside more common causes of mechanical obstruction including pancreatic and gastric carcinomas and peptic ulcer disease.

**KEYWORDS**

breast cancer, gastric outlet obstruction, malignancy, metastasis

## 1 | INTRODUCTION

Gastric outlet obstruction (GOO) results from impediment to gastric emptying from mechanical causes such as peptic ulcer disease, malignancy, or motility disorders, namely gastroparesis. Distal gastric cancers and pancreatic adenocarcinomas are the leading causes of GOO due to malignancy.[1] GOO secondary to breast carcinoma is uncommon, especially as the only site of metastasis. Diagnosis can be challenging, and a high level of suspicion is the key to timely management.

Herein we report a case of isolated GOO secondary to invasive lobular breast carcinoma diagnosed with endoscopic ultrasound and fine needle aspiration (EUS FNA) in a patient with a prior history of breast carcinoma and resection 4 years before the current presentation.

## 2 | CASE REPORT

A 69-year-old lady was referred to the inpatient medical services with a two-week history of nausea and postprandial vomiting. She reported a decreased appetite and some weight loss. Her medical history was significant for type 2 diabetes mellitus, hypertension, hyperlipidemia, and breast carcinoma, which was treated with adjuvant loco-regional radiation and lymph node resection 4 years ago. The physical exam was notable for epigastric tenderness and fullness. Laboratory investigations revealed electrolyte imbalances and renal insufficiency consistent with persistent vomiting.

## 3 | METHODS

Esophagogastroduodenoscopy (EGD) with gastric biopsies was performed before her hospital admission. No obvious etiology was identified. A CT scan with IV contrast revealed a GOO without any pathology. A double-contrast upper gastrointestinal series was performed, which revealed a dilated stomach with slowed, partial emptying into the small bowel. Subsequently, another EGD was performed, revealing mild gastritis and pyloric stenosis without an intrinsic mass (Figure 1).

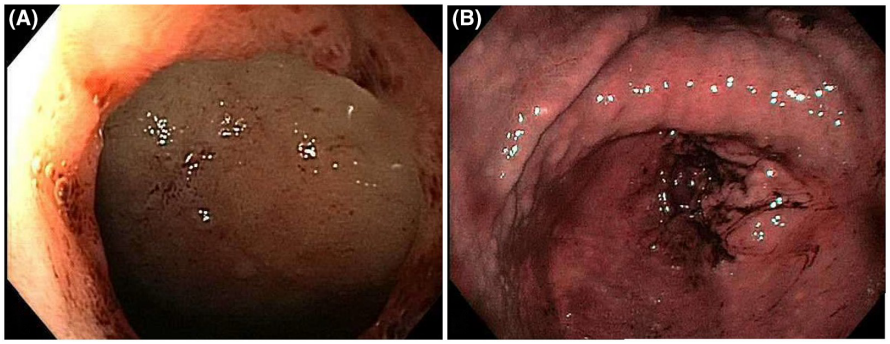


**FIGURE 1** Esophagogastroduodenoscopy (A) Gastric body showing a nodular mucosa and (B) Pylorus with gastric stenosis and wall thickening.

Pyloric dilation was done without much improvement. The patient was started on total parental nutrition. Due to persisting symptoms 5 days after pyloric dilatation, EGD and endoscopic ultrasound (EUS) were performed, which revealed a diffuse wall thickening at the prepyloric region extending to the pylorus with a wall thickness of 11.3 mm (Figure 2). A through-the-scope dilator was passed, and a serial dilation was performed up to 18 mm. The stenotic area was injected with 80 units of botulinum toxin. Fine needle aspiration (FNA) was performed, and histopathology revealed poorly differentiated adenocarcinoma consistent with previously diagnosed lobular breast carcinoma (Figure 3). This can also be seen in Figure 3E,F that show estrogen positive cells stained with GATA 3 and CK7 stain. A post-pyloric feeding tube was placed for enteric nutrition. The patient was discharged on a liquid diet with close follow-up with outpatient oncology for targeted chemotherapy. Targeted therapy with abemaciclib was commenced to reduce tumor burden with a complete clinical response. EUS was repeated after 1-year of follow-up showing improved appearance of the antral wall with thickness of 5.6 mm (Figure 4).

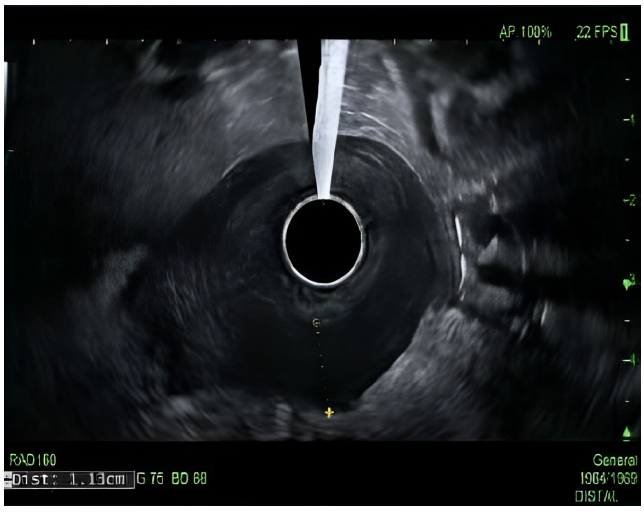


**FIGURE 2** Endoscopic ultrasound on presentation revealing diffuse antral thickening, mainly in the muscularis propria layer, measuring 11.3 mm.

## 4 | DISCUSSION

We present a case of GOO secondary to metastatic lobular breast carcinoma. GOO is a clinical syndrome that can manifest as early satiety, postprandial vomiting, abdominal pain, and weight loss.[1] The 'obstruction' can be a misnomer as GOO can arise due to intraluminal disease, extraluminal compression, or motility disorders. Peptic ulcer disease (PUD) was the leading cause of GOO, but with the introduction of proton pump inhibitors and more effective helicobacter pylori eradication, the incidence of GOO due to PUD has dropped dramatically and has recently been surpassed by obstruction due to underlying cancers.[2,3] Malignancies now account for 50%–80% of cases of GOO, of which distal gastric cancers and pancreatic adenocarcinomas account for up to 35% and 15%–25% of cases, respectively.[4,5] GOO due to metastatic breast cancers have been rarely reported, with only a handful of case reports and an estimated incidence of 0.3%.[4–6]

Invasive lobular carcinoma (ILC) has been observed to have an increased tendency to metastasize to the GI tract compared to breast carcinomas of no special type (40% vs. 2%).[7] ILC metastases can be difficult to detect on imaging as they are more infiltrative and subtle than other mass-forming lesions. Metastatic ILC usually involves the submucosa, followed by the muscular layers. In the stomach, it can involve all the layers resulting in a linitis-like picture and can present as GOO, as seen in the present case.[8] As metastatic ILC primarily affects the submucosal layers, superficial/initial biopsies can be non-diagnostic in 46%–50% of cases which can be falsely reassuring.[8] If a

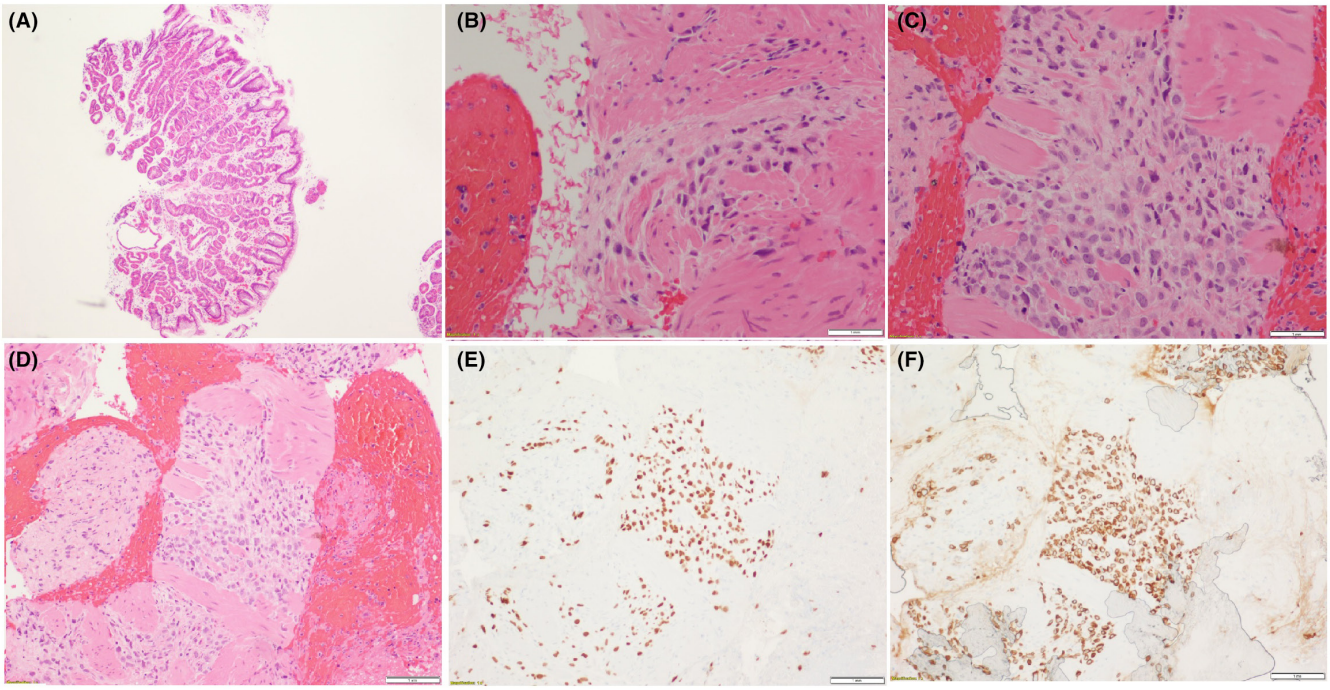


**FIGURE 3** Histopathology of fine needle aspirated tissue in gastric tissue at the pylorus and gastric body (A) 20× magnification of gastric body showing undifferentiated neoplastic cells, (B and C) 400× magnification, cell block showing undifferentiated neoplastic cells, (D) 200x magnification, cell block showing undifferentiated neoplastic cells (E) 200× magnification, GATA 3 stain showing estrogen receptor positive cells and (F) 200× magnification with CK7 stain showing estrogen positive cells.

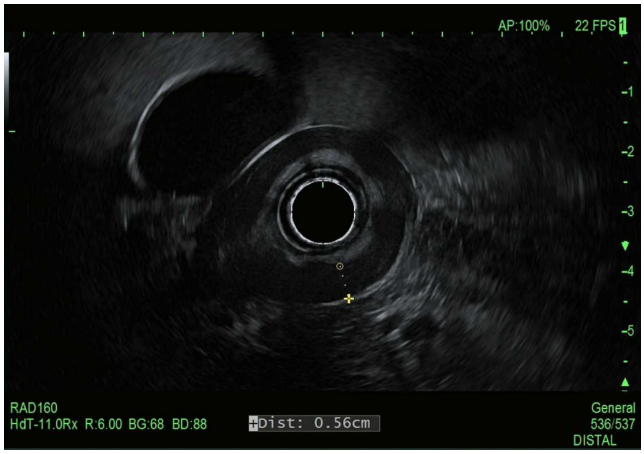


**FIGURE 4** Endoscopic ultrasound after one-year follow-up showing improved appearance of antral wall after treatment, measuring 5.6 mm.

high index of suspicion exists for metastatic ILC, repeat and deeper biopsies may be crucial to making a timely diagnosis and treatment with newer chemotherapeutic agents.[9] Immunohistochemical studies are essential for accurately diagnosing metastatic breast cancer and guiding further management.[1] There is a common consensus in the literature that supports chemotherapy with or without hormonal blockade as a first-line therapy for breast cancer metastasis to the stomach.[10]

## 5 | CONCLUSION

In the present case, we highlight the rare occurrence of lobular breast cancer metastases to the stomach causing GOO in a patient presumed to be in breast cancer remission for 4 years. At the time of presentation, our patient did not demonstrate any signs or symptoms of metastases to other sites, such as the bone or the lung. We would like to emphasize importance of the Endoscopic ultrasound-guided biopsies with appropriate immunohistochemical staining to clinch the diagnosis without which she would not have gotten the appropriate chemotherapy. This case demonstrates the importance of EUS FNA in the diagnostic algorithm for gastric outlet obstruction where diagnosis is not clear with the traditional methods.

## AUTHOR CONTRIBUTIONS

A.J., V.K., H.K., contributed to the conception or design of the work. V.K., H.K., contributed to the acquisition, analysis, or interpretation of data for the work. A.J., H.K., drafted the manuscript. All authors critically revised the manuscript. All authors gave the final approval and

agreed to be accountable for all aspects of work, ensuring integrity and accuracy.

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## CONFLICT OF INTEREST STATEMENT

No conflict of interest.

## DATA AVAILABILITY STATEMENT

The data underlying this article are available in the article and its online supplementary material.

## CONSENT

Written informed consent was obtained from the patient to publish this report in accordance with the journal's patient consent policy.

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