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CASE REPORT

Gastric Outlet Obstruction as the Presenting Manifestation of Metastatic Lobular Breast Carcinoma

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Gastric outlet obstruction (GOO) is frequently a diagnostic dilemma as malignancies have surpassed benign diseases as etiologies of GOO.[1,2] A case is presented of a previously healthy patient with persistent vomiting who was sequentially diagnosed with peptic ulcer disease (PUD), pancreatitis, and cholecystitis. Unfortunately, the diagnostic workup was less straightforward than initially suspected, as she was eventually diagnosed with a malignant GOO.

To the best of our knowledge, this is the second case in which GOO was the presenting manifestation of a previously undiagnosed metastatic lobular breast carcinoma.[1] Although gastrointestinal involvement may be a late manifestation of metastatic breast carcinoma that almost always follows after spread to other sites, this case illustrates GOO as a presenting manifestation.[3] Perhaps the most salient teaching point, consistent with recent literature, is that endoscopic biopsies in the workup of malignant GOO are often misleading and delay diagnosis.[4]

Case Report

A 44-year-old female with a history of fibrocystic breast disease presented with 1 month of right upper quadrant abdominal pain and nonbilious emesis of undigested food occurring several hours postprandially. Gallstones were demonstrated on an abdominal sonogram, and esophagogastroduodenoscopy revealed a normal proximal esophagus, distal esophagitis, and a Schatzki ring. An 8-mm duodenal bulb ulcer was biopsied with benign results, but no duodenal obstruction or narrowing was visualized. Therapy for presumptive *Helicobacter pylori* infection and PUD was initiated, but she was hospitalized shortly later with persistent vomiting and acute renal failure. An abdominal computed tomography (CT) scan showed evidence of pancreatitis but a normal biliary system and normal small and large bowels. There was no clinical jaundice, and hepatic function tests were normal. After medical therapy, an open cholecystectomy was performed because of dense adhesions of the large and small bowels to the liver and gallbladder. No gross abnormalities of the common bile duct or intestines were described.

With the persistence of intractable vomiting, abdominal and pelvic CT scans were repeated and revealed duodenal thickening and luminal narrowing. Follow-up abdominal magnetic resonance imaging (Figure 1) demonstrated an infiltrating duodenal mass with a resultant high-grade GOO. Histological examination from repeat endoscopic biopsies of the duodenal mass revealed signet ring cells infiltrating the lamina propria with positive estrogen and progesterone receptors. Upon presentation to the surgical service, a physical examination revealed a right breast mass, and a subsequent breast biopsy diagnosed lobular breast carcinoma with 10% estrogen receptor and 5% progesterone receptor and histology identical to that of the duodenal mass. Immunohistochemical assays confirmed primary breast carcinoma with duodenal metastasis. A lumpectomy was performed, and docetaxel was initiated for stage IV invasive lobular breast carcinoma. A gastrostomy and duodenal stents were placed for the GOO with resolution of the vomiting, and she received hospice and palliative care.

Discussion

Prior to the advent of histamine blockers, PUD was the most common cause of GOO.[1] Currently, malignancy accounts for 60% of cases of GOO.[1–3] To the best of our knowledge, this patient's presentation represents the second case in which the initial manifestation of an undiagnosed metastatic breast disease was GOO.[1] The diagnosis was both challenging and unusual because of the patient's other organic diseases (gallbladder disease, pancreatic disease, and PUD), which distracted from the underlying diagnosis of malignant GOO.

GOO is a clinical syndrome of diverse etiologies and pathogenesis that is characterized by mechanical impediment of gastric emptying. GOO is divided into 2 well-defined groups: benign and malignant causes.[1–4] Benign causes include: PUD, gastric polyps, pyloric stenosis, congenital duodenal webs, gallstone obstruction, pancreatic pseudocysts, and bezoars. Gastric cancer is the most common malignant cause and is followed by duodenal carcinoma, pancreatic carcinoma, cholangiocarcinoma, and metastatic disease of the gastric outlet.

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FIGURE 1. Coronal T2 fat saturation magnetic resonance image. Arrows show the infiltrating gastric pylorus and duodenal bulb mass causing gastric outlet obstruction with the dilated stomach.

Because of the stomach's significant capacity to distend, malignant GOO is often undetected clinically until a high-grade obstruction develops.[1–3] In patients with a previous diagnosis of carcinoma, nausea and vomiting can be mistakenly attributed to radiation or chemotherapy. Characteristic symptoms include nonbilious emesis of undigested food, early satiety, epigastric fullness, and abdominal pain.[1–3]

This case presentation is consistent with recent literature, which reports a surprising lack of reliability in diagnosing malignant GOO by endoscopy.[4] In 1 study, endoscopic biopsy for detection of malignant GOO was associated with poor sensitivity (37%) in comparison with surgical biopsy.[4] The authors recommended that patients who have a high clinical suspicion of malignant GOO (older patients and those without PUD) and who have initially benign biopsies be considered for surgical exploration prior to medical therapy or undergo repeat endoscopy with jumbo biopsies.[4]

Alternatively, endoscopic ultrasound has been advocated for detecting early mucosal gastric or duodenal cancer in patients without ulcerous changes on endoscopy. Radiographic features associated with submucosal tumor infiltration include irregular narrowing and budding signs.[5] As conventional CT is considered suboptimal for the detection of gastric or intestinal carcinomas, multidetector-row CT with multiplanar reconstruction has enhanced the overall ability to detect early gastric cancer and advanced gastric cancers with a sensitivity of 96.2%.[6]

Conclusion

The preceding case demonstrates valuable teaching points encountered in diagnosing malignant GOO. In patients with intractable vomiting severe enough to produce renal failure, other organic causes should be considered before one proceeds directly to cholecystectomy. This case further confirms that endoscopic biopsy is often alarmingly inadequate for diagnosing malignant GOO.[4–6] Thus, if worrisome symptoms persist, the provider should not be comforted by normal endoscopy and should escalate investigations accordingly. More clinical trials should evaluate the roles of endoscopic ultrasound and multidetector-row CT in the early detection of gastric and duodenal carcinoma in patients with normal endoscopic biopsies, which may have led to a more timely diagnosis in this patient.[5,6]

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