ACG CASE REPORTS JOURNAL

VIDEO | STOMACH

An Ulcer Base Rhythmically Pulsating With Cardiac Contractions: A Manifestation of Gastrocardiac Fistula

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CASE REPORT

A 54-year-old man presented to the hospital with melena and hemoglobin of 6.7 g/dL. He had a history of transhiatal esophagectomy with left neck anastomosis for esophageal adenocarcinoma 9 years before. An esophagogastroduodenoscopy revealed a 5-cm clean-based ulcer on the anterior surface of the gastric conduit above the diaphragmatic impression, suspected to be of ischemic etiology. Biopsies taken of the ulcer edge revealed reactive foveolar mucosa with intraepithelial lymphocytosis and fibrinopurulent exudate without dysplasia. Given the size of the ulceration and the suspicion that it was a post-esophagectomy complication, an outpatient surgical referral was made, and the patient was discharged on proton pump inhibitors.

One month later, the patient presented with hematemesis and a hemoglobin nadir of 4.8 g/dL. Esophagogastroduodenoscopy in the intensive care unit showed a deeper, hematin-stained ulcer base with rhythmic pulsations corresponding to cardiac contractions (Figure 1). The pulsations suggested that the ulcer may be abutting a cardiac ventricle (Video 1; watch the Video at http://links.lww.com/ACGCR/A9). Chest computed tomography subsequently raised suspicion of ulcer erosion to the heart (Figure 2). An urgent thoracic surgery consult was obtained, and a gastrocardiac fistula was later confirmed by intraoperative visualization of a large defect in the ventricular wall arising from the gastric conduit. This was repaired using a bovine pericardial patch.

Multiple short-term complications have been described after esophagectomy for esophageal adenocarcinoma, including failure to wean from mechanical ventilation, pneumonia, reintubation, sepsis, pulmonary edema, and deep wound infection.[1] A lesser

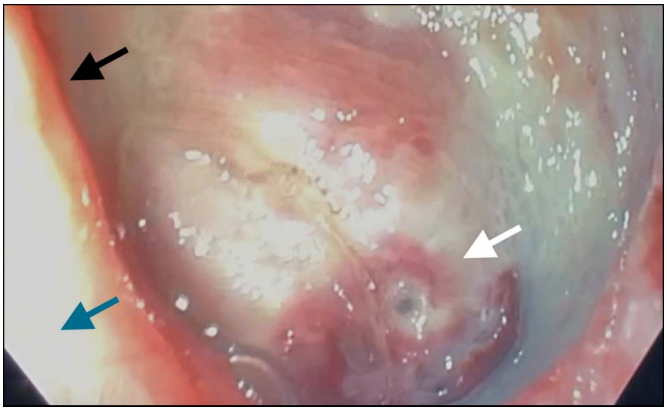

Figure 1. Hematin-stained base (white arrow) within a deep ulcer bed (black arrow) surrounded by gastric mucosa (blue arrow).

Video 1. Esophagogastroduodenoscopy showing pulsations, suggesting that the ulcer may be abutting a cardiac ventricle. Watch the video: http://links.lww.com/ACGCR/A9.

Figure 2. Chest computed tomography demonstrating gastric ulcer eroding to the heart (arrow).

ACG Case Rep J 2019;6:1–2. doi:10.14309/crj.0000000000000125. Published online: July 17, 2019

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known long-term complication is gastrocardiac fistula.[2–5] Most cases of post-esophagectomy gastrocardiac fistula are secondary to ischemia, radiation, or peptic ulcer disease, but recurrent malignancy and *Candida albicans* infection are also possible risk factors.[2–4] Outside the post-esophagectomy setting, gastrocardiac fistula has also been described as a consequence of severe peptic ulcer disease and trauma.[5]

Whereas patients with gastrocardiac fistula generally present with sepsis, gastrointestinal bleeding has also been described.[2,4] As in our patient, intermittent bleeding can occur via the fistula. Although endoscopy universally reveals a gastric ulcer on the cardiac surface, specific stigmata may vary; usually, a clot within a pulsatile ulcer base is seen.[2,4] Patients can develop an acute-onset and rapidly progressive deterioration due to exsanguination through the fistula.[2] Prevalent surgical repair techniques include closing the defect using sutures or pericardial patches.[2–4]

Gastrocardiac fistula is an essential consideration in the evaluation of gastrointestinal bleeding in the post-esophagectomy setting. Whereas our patient had a prominently pulsating ulcer base, endoscopic findings can be variable, and therefore, appropriate radiologic studies and/or surgical exploration should be undertaken in at-risk individuals. Timely diagnosis is important as surgical management is crucial to good outcomes.

DISCLOSURES

Author contributions: Both authors wrote and approved the manuscript. T. Jeyalingam is the article guarantor.

Acknowledgments: We acknowledge Michael Zeiss for editing the endoscopic video.

Financial disclosure: L. Liu is a speaker for Pendopharm, Abbvie, Covidien/Medtronic, Allergan, and Lupin; is on the advisory board for Abbvie, Allergan, and Lupin; and is a consultant for Allergan, and Covidien/Medtronic.

Informed consent was obtained for this case report.

Received December 31, 2018; Accepted May 8, 2019

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