



Duodenal stenting as a palliative approach to a malignant duodenocolonic fistula

Yassmin Hegazy, MD,^{1,2} Ramzi Mulki, MD,^{3,4} Usman Barlass, MD,^{3,4} Ali M. Ahmed,^{3,4}
Kondal R. Kyanam Kabir Baig, MD,^{3,4} Shajan Peter, MD^{3,4}

INTRODUCTION

Duodenocolonic fistulae may result as adverse events of malignancies, and their management is often challenging for nonsurgical patients. Our case demonstrates a palliative approach in the management of malignant duodenocolonic fistula by means of luminal stent placement.

CASE REPORT

A 73-year-old man with a history of GERD and diabetes mellitus presented from an outside hospital with a 1-week history of hematochezia. He also reported associated rapid transit GI symptoms 3 days prior to presentation with associated nausea, vomiting, diarrhea, and epigastric pain worsened after eating. On admission, he was afebrile with a blood pressure of 118/70, a heart rate of 73, and a physical examination notable for bright red blood on rectal examination. Laboratory results were notable for a calcium 7 mg/dL, magnesium 1.2 mg/dL, albumin 2.2 gm/dL, phosphorus 2.1 mg/dL, and hemoglobin 9.8 gm/dL. The upper GI series was not performed; however, CT imaging showed a pulmonary mass and a duodenocolonic fistula in the second part of the duodenum (Fig. 1) with periduodenal and mesenteric lymph nodes. The patient was admitted to the hospital for further workup and management and was started on intravenous pantoprazole.

Hospitalization was complicated by a ruptured pseudoaneurysm within the hepatic flexure with extravasation extending through the fistula. After embolization of a branch of the gastroduodenal artery, the patient was scheduled for an upper GI endoscopy. Regarding the fistula, the stomach,

first and second portions of the duodenum, and colon were involved given the location of the fistula; however, the patient did not have any additional visceral organ involvement.

Upper GI endoscopy findings showed a 10-mm fistula in the first and second portion of the duodenum with opening into the right side of the colon (Video 1, available online at www.giejournal.org; Fig. 2A) and an infiltrative mass past the duodenal bulb with biopsy positive for invasive adenocarcinoma (Fig. 2B). A 20- × 120-mm Niti-S (Taewoong Medical, Los Angeles, CA) bare-type covered metal luminal esophageal (through the scope) stent was placed under fluoroscopy with the proximal flange in the antrum of the stomach and distal flange in the second part of the duodenum, bridging the fistula (Fig. 3). The stent was passed through the endoscope traversing the fistula under fluoroscopic guidance and anchored proximally by the endoscopic placement of 2 interrupted 2.0 polypropylene sutures to prevent distal migration (Fig. 4). Contrast was injected into the stomach through the stent. Fluoroscopy revealed no contrast flow through the fistula with good, redirected flow into the proximal jejunum (Fig. 5). Interval imaging 3 weeks postprocedure revealed a second



Figure 1. Duodenocolonic fistula in the second part of the duodenum with associated duodenal wall thickening and mesenteric inflammatory stranding.

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Department of Medicine, University of Alabama Birmingham Hospital, Birmingham, Alabama (1), Department of Internal Medicine, University of Alabama Birmingham Hospital, Birmingham, Alabama (2), Department of Medicine, University of Alabama Birmingham Hospital, Birmingham, Alabama (3), Department of Gastroenterology and Hepatology, University of Alabama Birmingham Hospital, Birmingham, Alabama (4).

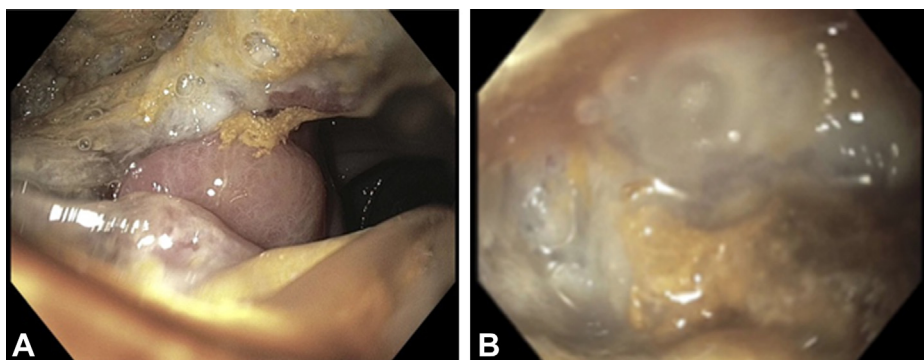


Figure 2. **A,** A medium fistula found in the first portion of the duodenum and in the second portion of the duodenum, opening into the right side of the colon, at the region of hepatic flexure. **B,** Medium-sized fungating mass in the first and second portion of the duodenum.

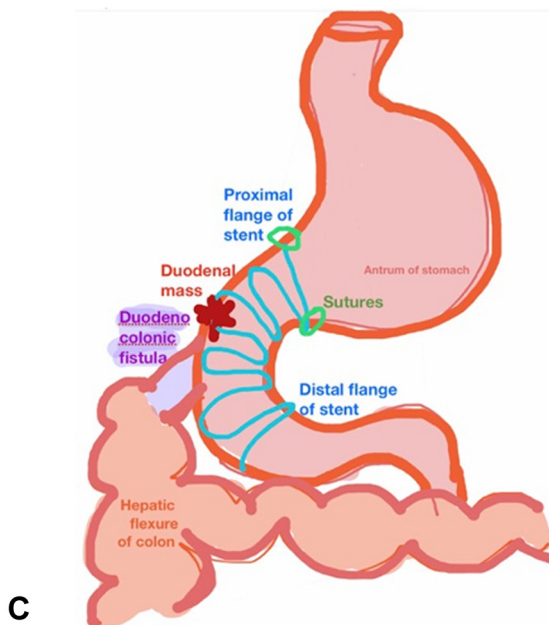
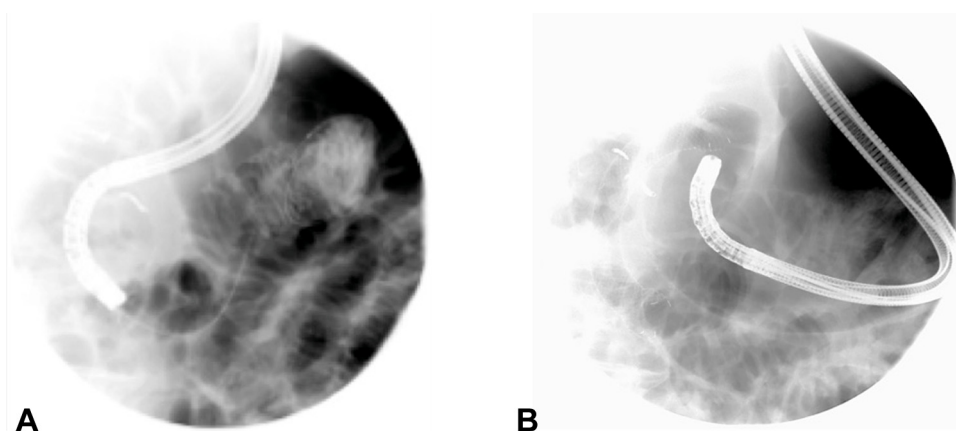


Figure 3. **A,** Fluoroscopy of stent deployment with the proximal flange in the antrum of the stomach and distal flange in the second part of the duodenum. **B,** Fluoroscopy of stent deployment with the proximal flange in the antrum of the stomach and distal flange in the second part of the duodenum. **C,** Anatomy of stent placement position with proximal flange of the stent placed in the antrum of the stomach and distal flange in the second part of the duodenum.

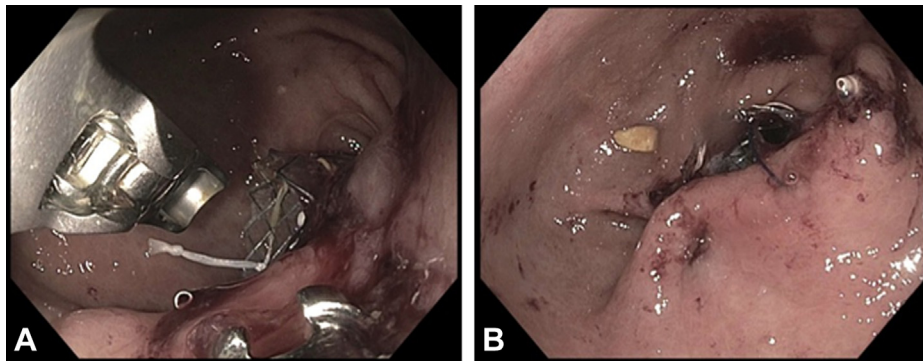


Figure 4. **A**, Endoscopic placement of the sutures on to the stent. **B**, Stent was anchored with 2 sutures over the proximal part of the stent ends.

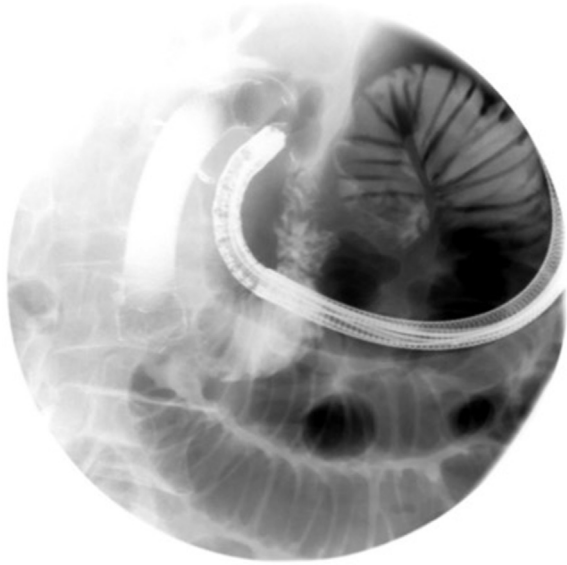


Figure 5. Fluoroscopy with contrast injected into the stomach. Duodenum showed no extravasation of dye with good flow into the proximal jejunum.

primary lung malignancy. The patient was evaluated in the clinic 1 month after the procedure with improved abdominal pain, and he was tolerating a full-liquid diet.

DISCUSSION

This case highlights a palliative, endoscopic approach to stenting a duodenocolonic fistula in a patient with metastatic disease. Malignant duodenocolonic fistulas can cause rapid nutritional deficiencies and life-altering symptoms, including diarrhea, weight loss, and abdominal pain, as seen in our patient. While the treatment for malignant duodenocolonic fistulas can include curative surgery, such as a hemicolectomy, and palliative surgery, such as ileostomy and gastrojejunostomy, parental nutrition is usually required with the risk of postoperative adverse events.¹⁻³

Alternative endoscopic approaches were considered. Using through-the-scope or over-the-scope clips for enteral

fistula closure had a higher likelihood of dislodging given their smaller size relative to the fistula resulting in minimal relief.^{4,5} Other techniques including primary endoscopic suturing of the defect would not be ideal given the friability associated with the tumor causing the sutures to fail and dehiscence.^{6,7} A covered duodenal stent placed across the fistula allowed for a less-invasive method to relieve debilitating vomiting and abdominal pain. In addition, stent fixation using a suturing technique is important to prevent migration and provide adequate stent apposition. Our case demonstrates an endoscopic palliative method in providing symptom relief and insuring enteral nutrition in patients with a limited life expectancy.

DISCLOSURE

Dr Kyanam Kabir Baig receives grant support from AMBU and Olympus and is a consultant for Olympus. All other authors disclosed no financial relationships.

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