Endoscopic ultrasound-guided ileosigmoidostomy using a lumen-apposing metal stent for palliation of malignant small-bowel obstruction

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INTRODUCTION

High-grade malignant small-bowel obstruction (SBO) is typically managed with surgical diversion (ileostomy) or palliative decompression via nasogastric tube or venting gastrostomy. These approaches have a significant impact on quality of life. Endoscopic palliation of malignant luminal obstruction by lumen-apposing metal stent (LAMS) placement is well established for duodenal obstruction. Distal SBO, however, is challenging to manage endoscopically. We present the case of a novel EUS-guided ileosigmoidostomy technique for the palliation of malignant distal SBO.

CASE PRESENTATION

A 91-year-old man with a history of right-sided colon cancer who underwent a right hemicolectomy followed by tumor recurrence presented with worsening abdominal pain.

Figure 1. CT scan showing a high-grade small-bowel obstruction (yellow arrow) and dilation.

Figure 2. Malignant colonic stenosis at the ileocolonic anastomosis.

Figure 3. Fluoroscopic imaging of the malignant and nontraversable stricture.
pain and an inability to tolerate oral intake. CT of the abdomen showed a circumferential mass at the ileocolonic anastomosis with upstream small-bowel dilatation consistent with a high-grade SBO (Fig. 1).

The patient was offered surgical diversion or proximal venting but elected to pursue an attempt at endoscopic decompression. The patient was given 2 tap water enemas before the procedure. Attempts to pass a wire across the stricture (Figs. 2 and 3) into the ileum to facilitate enteral stent placement were unsuccessful owing to the severe pinhole stricture.

The decision was made to attempt an EUS-guided ileocolostomy. The CT images were carefully reviewed with radiology to confirm juxtaposition of the sigmoid colon and dilated ileum. A linear echoendoscope was introduced through the anus and advanced to the sigmoid colon, about 40 cm from the anal verge (Fig. 4). The distal ileum was accessed using a 22-gauge EUS needle, with contrast injection confirming small-bowel entry.

After luminal instillation with contrast, saline solution, and methylene blue, using the free-hand approach, a 15-mm electrocautery-enhanced LAMS was advanced into the ileal lumen. The distal and proximal flanges were successfully deployed into the ileal and sigmoid colon, respectively (Figs. 5 and 6). A 15-mm balloon was used to dilate the LAMS, and a double-pigtail plastic stent was placed to help prevent possible stool impaction. No postprocedural adverse events were noted.

The patient tolerated peroral intake the following day. No significant diarrhea was noted. Correct stent placement was confirmed with postprocedure CT (Figs. 7 and 8).

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Figure 4. Linear echoendoscope accessing the small bowel via a 22-gauge needle.

Figure 5. EUS-guided deployment of the distal flange of the lumen-apposing metal stent (arrow).

Figure 6. Successful deployment of the lumen-apposing metal stent forming the ileosigmoidostomy.

Figure 7. Postprocedure transverse view of the abdominal CT scan showing proper placement of the lumen-apposing metal stent (red arrow).
DISCUSSION

Endoscopic management of distal SBO using an LAMS has been described in the literature.\(^1,2\) To our knowledge, we present the first reported case of a successfully performed EUS-guided bypass of a high-grade SBO using an LAMS to create a conduit between the ileum and sigmoid colon. Compared with the previously reported studies, an ileosigmoidostomy offers a less technically challenging procedure, obviating the need for a full colonoscopy, forward-viewing echoendoscope, and colon preparation. Sufficient colon was preserved distal to the anastomosis to prevent diarrhea, in accordance with published data, which suggest preservation of bowel function when the length of the remaining colon is at least 15 cm.\(^3\)

This technique is highly feasible for endoscopy centers experienced in foregut EUS-guided anastomosis creation and offers an elegant nonoperative option for the management of distal SBO (Video 1, available online at www.giejournal.org).

DISCLOSURE

Dr Carr-Locke is a consultant for Boston Scientific and receives royalties from Steris Corporation. Dr Sharaiha is a consultant for Boston Scientific, Olympus, and Cook Medical. All other authors disclosed no financial relationships.

Abbreviations: LAMS, lumen-apposing metal stent; SBO, small-bowel obstruction.

REFERENCES

1. Sooklal S, Kumar A. EUS-guided enterocolostomy for palliation of malignant distal small-bowel obstruction. VideoGIE 2019;4:530-1.
2. James T, Nakshabendi R, Baron T. EUS-guided ileocolonic anastomosis for relief of complete small-bowel obstruction. VideoGIE 2020;5:428-30.
3. Manceau G, d’Annunzio E, Karoui M, et al. Elective subtotal colectomy with ileosigmoid anastomosis for colon cancer preserves bowel function and quality of life. Colorectal Dis 2013;15:1078-85.

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