



## Double self-expandable metal stent placement in a patient with multifocal colorectal obstruction due to advanced gastric cancer: the importance of fluoroscopy

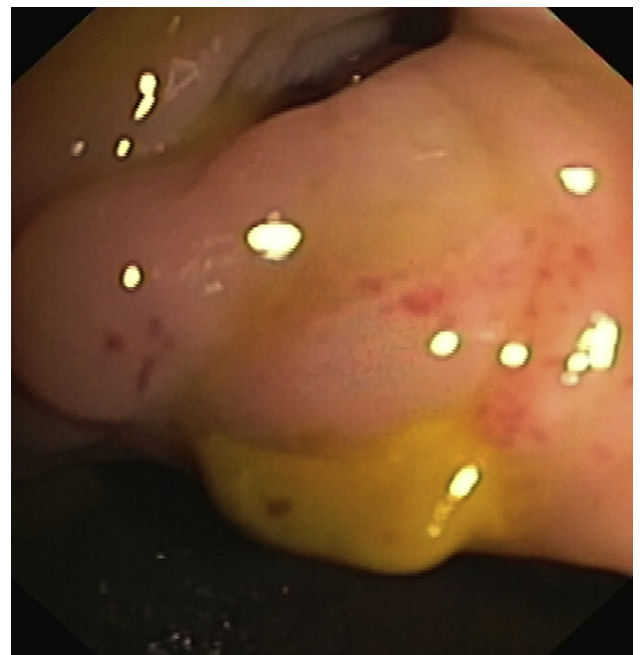
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We describe a 36-year-old woman with stage IV gastric adenocarcinoma who presented to the emergency department with symptomatic acute colorectal obstruction. Abdominal CT revealed an 8-cm thickening of the hepatic flexure related to neoplastic involvement, causing marked distension of the ascending colon (Fig. 1). Because of the patient's poor condition (Eastern Cooperative Oncology Group performance status 3), colorectal endoscopic stent placement with a self-expandable metal stent (SEMS) was tried. A therapeutic gastroscope (Olympus GIF-2TH180; Olympus, Center Valley, Pa, USA) was used; however, a second stricture was found at the splenic flexure (Fig. 2) and not transversible with the therapeutic gastroscope. A conventional gastroscope (Olympus GIF-Q180) was then advanced up to the ascending colon, with identification of

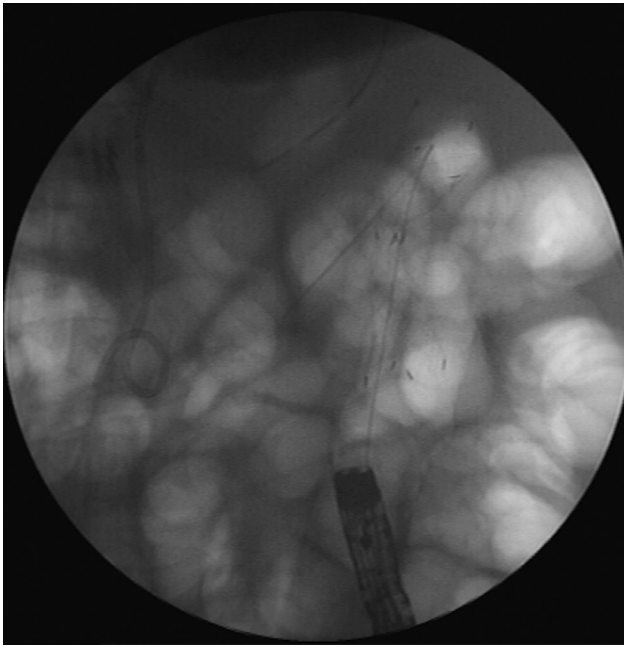
the main stricture at the hepatic flexure. Once we could not exclude whether the splenic flexure stricture would or would not cause obstructive symptoms after endoscopic treatment of the hepatic flexure stricture, and a dilation symptom-free period would probably be limited in time, we decided to place 1 SEMS in each stricture (Video 1, available online at [www.VideoGIE.org](http://www.VideoGIE.org)). First, the therapeutic gastroscope was advanced up to the splenic flexure; the stricture was estimated at 2 cm, and an 80- × 24-mm uncovered SEMS (Hanarostent M. I. Tech Co, Inc, Seoul, South Korea) was placed under endoscopic and fluoroscopic guidance (Fig. 3). After SEMS deployment, the splenic stricture was still not transversible with the therapeutic gastroscope. Because full expansion of a SEMS may take up to 48 hours, we decided not to dilate the splenic flexure SEMS. A conventional gastroscope was then advanced up to the midtransverse colon, and 1 resolution clip was placed for fluoroscopic guidance. A 450-cm 0.035-inch guidewire (Hydra Jagwire; Boston



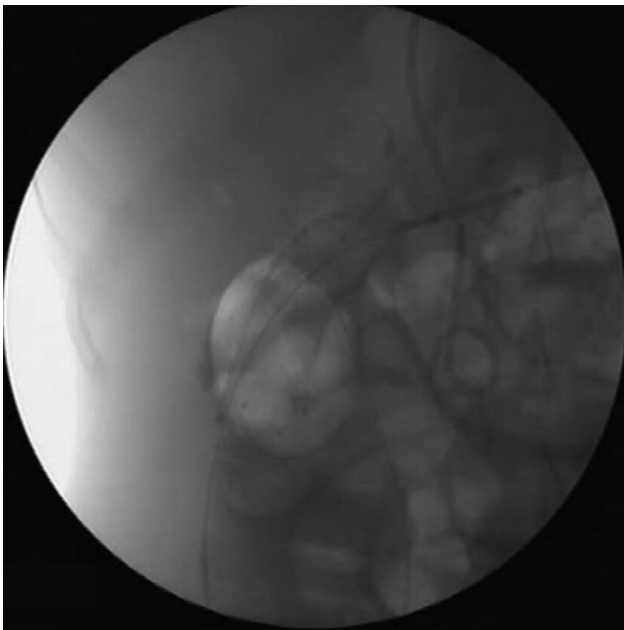
**Figure 1.** Abdominal CT view showing exuberant distension of the ascending colon caused by neoplastic involvement of the hepatic flexure.



**Figure 2.** Endoscopic image of the splenic stricture not transversible with the dual-channel therapeutic gastroscope.

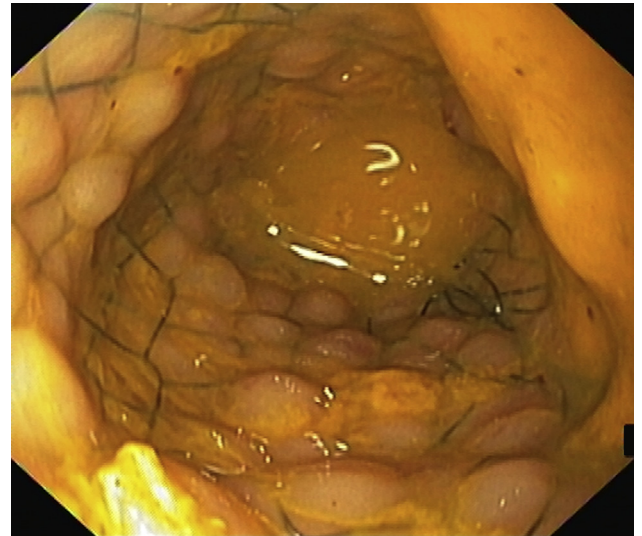


**Figure 3.** Placement of an 80- × 24-mm self-expandable metal stent at the splenic flexure under fluoroscopic control.

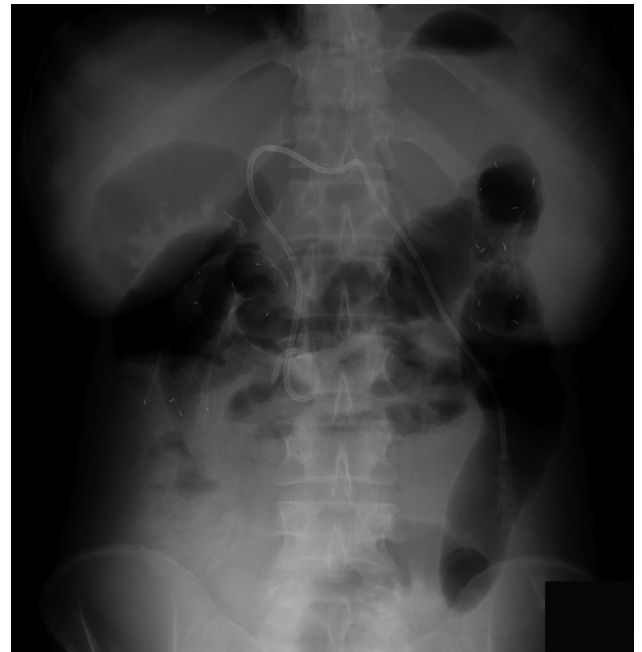


**Figure 4.** Second self-expandable metal stent deployment at the hepatic flexure under fluoroscopic control.

Scientific, Marlborough, Mass, USA) was inserted through the hepatic stricture and allowed to loop several times in the ascending colon (Fig. 4). After removal of the gastroscope, a second SEMS delivery system was advanced up to the ascending colon under fluoroscopic control and guidewire manipulation; looping was mitigated by the use of sigmoid and sigmoid–descending junction manual pressure, with clockwise torquing of the SEMS delivery system



**Figure 5.** Endoscopic image of second self-expandable metal stent placed at the hepatic flexure.



**Figure 6.** Abdominal radiograph performed 2 days later confirming correct placement of both self-expandable metal stents. A pigtail drain can also be seen for drainage of ascites.

in the sigmoid and anticlockwise torquing in the transverse colon. Advancement of the delivery system was all performed with the patient in the supine position. An uncovered 140- × 24-mm SEMS (Hanarostent) was then placed under fluoroscopic guidance (Fig. 5). The patient remained stable 3 months later (Fig. 6) without need of further treatment for obstructive symptoms.

Unlike obstructions in colorectal cancer, which are caused by intraluminal growth, intestinal obstructions in extracolonic malignancy (ECM) result in extrinsic invasion

or compression, which leads to deformity of the axis of the colon.<sup>1</sup> Patients with ECM frequently have multiple strictures (8.1% to 11.2%) and also present with carcinomatosis (80.2% to 94.2%),<sup>1,2</sup> resulting in more difficult access to, or cannulation of, the obstructive lesion. By contrast, carcinomatosis, by causing colonic immobilization, may have facilitated advancement of the SEMS delivery system up to the ascending colon under only fluoroscopic control and guidewire manipulation. If advancement of the SEMS delivery system to the ascending colon had not been achieved, positioning of the patient in the right lateral decubitus position or supine position could have allowed easier passage of the sigmoid–descending junction, and the angulated splenic flexure up to the midtransverse colon, with the left lateral position possibly being suitable for intubating from the midtransverse colon to the distal ascending colon.<sup>3</sup> It should, however, be noted that an endoscopist's biliopancreatic background may facilitate SEMS advancement because skills and experience in guidewire cannulation are of paramount importance. Several studies have reported on patients with ECM and colonic stent placement, with variable technical success rates ranging from 42% to 100%, clinical success rates ranging from 20% to 90%, and 3-month stent occlusion rate of 14.7%.<sup>2</sup> Although SEMS placement seems to be less effective than emergency surgery for the palliation of colorectal obstruction in patients with advanced gastric cancer,<sup>1</sup> it should still be considered in patients with advanced disease.<sup>2</sup> Peritoneal carcinomatosis and multifocal disease should not dissuade stent placement if a favorable risk-benefit analysis exists.

## DISCLOSURE

*All authors disclosed no financial relationships relevant to this publication.*

*Abbreviations: ECM, extracolonic malignancy; SEMS, self-expandable metal stent.*

## REFERENCES

1. Kim BK, Hong SP, Heo HM, et al. Endoscopic stenting is not as effective for palliation of colorectal obstruction in patients with advanced gastric cancer as emergency surgery. *Gastrointest Endosc* 2012;75:294-301.
2. Faraz S, Salem SB, Schattner M, et al. Predictors of clinical outcome of colonic stents in patients with malignant large-bowel obstruction because of extracolonic malignancy. *Gastrointest Endosc* 2018;87:1310-7.
3. Lee SH, Park YK, Lee DJ, et al. Colonoscopy procedural skills and training for new beginners. *World J Gastroenterol* 2014;20:16984-95.

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