The use of enteral stents in colonic and gastric outlet obstruction

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Abstract

Background: Enteral stenting is emerging as a viable treatment option for malignant obstructions of the gastrointestinal (GI) tract. We describe our experience and review the literature on techniques and complications.

Methods: A retrospective chart review of a single surgical service from 1998 to January 2002 was performed for all cases of endoscopic stenting for obstruction of the GI tract. Demographics, indications, success rate, complications, and outcomes were evaluated.

Results: There were nine female and two male patients aged 31–88 years (mean, 64.6). Six stents were placed in five patients with malignant gastric outlet obstruction. Technical success was achieved in 100%, and all patients improved clinically. Seven stents were placed in six patients with colon obstruction. Technical success was achieved in 100%, and six of seven obstructions were relieved. There was one perforation, which required a colostomy. A review of the literature showed overall technical success rates as high as 100%, 80–100% improvement in obstructive symptoms, and a 0–30% complication rate. Complications include perforation (0–16%), bleeding, occlusion, migration, and pain.

Conclusion: Enteral stenting is effective in relieving GI obstruction, but it carries a risk for perforation. It should be considered an option to gastroenteric bypass, colostomy, or resection in debilitated patients.

Key words: Gastric outlet obstruction — Colonic obstruction — Endoscopic stents — Enteral stents

Methods

A retrospective chart review was performed on 11 patients who received an enteral stent (excluding esophageal and biliary) at our institution between 1998 and January 2002. Patient demographics, diagnosis, indications, technique, success rate, complications, and follow-up were analyzed.

Technique

Nine patients in our series were inpatient, and two were outpatients. All stents—whether gastroduodenal, jejunal, or colonic—are placed with the same technique. A preprocedural barium study is obtained to diagnose the obstruction and map the location, length, and configuration of the stricture. Patients are sedated with intravenous meperidine and midazolam.

All stents—whether gastroduodenal, jejunal, or colonic—are placed in the endoscopy suite with endoscopic and fluoroscopic guidance. A guidewire is delivered past the obstructed segment with fluoroscopic guidance. A diagnostic catheter is then placed over the guidewire, and an additional contrast study is performed to further delineate the obstructed segment and determine the size of stent needed (Fig. 1B). The Wallstent (Microvasive, Boston Scientific, Natick, MA, USA) enteral stent has been used in all of our patients. After the appropriate length is selected, the stent is deployed under fluoroscopic guidance. Deployment can be difficult, so care must be taken to overlap the end of the stent over the entire segment, because the stent will shorten during deployment.

Following the procedure, the patient will undergo an additional barium study to confirm placement and to check expansion of the stent (Figure 1C). The patients are then followed up in the hospital for the rest of their inpatient stay. Thereafter, they are followed either by office visits or phone calls.

Results

Gastric outlet obstruction

Six stents were placed in five patients for gastroduodenal obstruction. The patients were 31–88 years old (mean, 65). Four were female and one was male. Two had pancreatic carcinoma, one had ampullary carcinoma, one had recurrent cholangiocarcinoma, and one had recurrent gallbladder carcinoma that required repeat stenting. Pyloric-sparing pancreaticoduodenectomy had been performed for the ampullary cancer and one pan-
creatic cancer. The other pancreatic cancer was unresectable. All had gastric outlet obstruction.

All patients had a preprocedure upper GI barium study to confirm the obstruction. The obstructions of the patients who had pancreatic resection were shown to be at (a) the jejunum immediately distal to the gastro-jejunostomy and (b) proximal small bowel 10 cm from the pylorus, where the small bowel limb had been brought through behind the mesenteric vessels near the ligament of Treitz. The unresectable pancreatic carcinoma had obstruction at the second and third portion of the duodenum. The cholangiocarcinoma had obstruction at the distal antrum. The gallbladder carcinoma also had obstruction at the second and third portion of the duodenum, and the recurrent obstruction was at the distal end of the first stent.

Two stents were placed as outpatient procedures. All procedures were technically successful. There was one difficult placement due to the angulation of the duodenum, such that during deployment, the stent buckled. However, the stent was easily removed, the scope was repositioned, and another stent was deployed successfully. Four stents were $22 \times 60$ mm, one was $22 \times 70$ mm, and one was $22 \times 90$ mm.

There were no complications. Each of the patient’s symptoms improved immediately after stent placement, and each was able to take at least liquids initially. One patient was lost to follow-up after 2 weeks. At this time, her vomiting had resolved, but she continued to have pain after meals. One patient was placed in hospice area.

Fig. 1. A Admission radiography of patient with descending colonic obstruction. A cutoff can be seen in the left upper quadrant (LUQ). B Endoscopic contrast study of obstructed segment. We were unable to pass the endoscope through the stricture. C Contrast study post–stent placement, confirming free flow of contrast through the stent. D Plain radiograph post–stent placement, reconfirming placement.