

Uncovered Self-Expanding Metal Stent (SEMS) Four Years After Placement for Long-Term Treatment of a Benign Colonic Obstruction

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Abstract

Self-expanding metal stents (SEMS) have emerged as an alternative to surgery in the treatment of malignant colorectal obstructions. There is limited data about their use for benign colonic obstructions, especially in regards to safety and long-term patency. We present a case in which long-term SEMS placement proved to be a durable option for over 4 years in a patient with a benign colonic stricture.

Introduction

Self-expanding metal stents (SEMS) have long been used in malignant colorectal obstructions for palliation or as a bridge to surgery.¹⁻⁴ Their use in benign colonic obstructions is still controversial with regards to safety, efficacy, and long-term patency.^{3,4} Long-term follow-up data are limited. Case series report that patients may remain complication-free for as long as 15 months, but in extended placement, complications such as bleeding and stent migration can occur.⁵ There is no clear consensus on the safe duration of SEMS in benign obstruction, and thus no established standard of care.

Case Report

An 81-year-old man with adenocarcinoma of the sigmoid colon presented 4 weeks after surgical resection, complaining of constipation, abdominal distention, and vomiting. Computed tomography (CT) showed a distal large bowel obstruction, and a barium enema revealed a high-grade stenosis proximal to the anastomotic site in the recto-sigmoid region (Figure 1). Flexible sigmoidoscopy revealed a tight, fibrotic, benign-appearing anastomotic stricture 15 cm from the anal verge (Figure 1). The 8.6-mm Olympus GIF-160 upper endoscope could not traverse the stricture. Contrast injection under fluoroscopy revealed a narrowing 5 cm in length. The segment was serially dilated up to 12 mm using a through-the-scope balloon device (CRE™, Boston Scientific Inc., Natick, MA), with minimal response in its appearance. Due to the patient's severe medical comorbidities and desire to avoid a second laparotomy, a decision was made to insert an uncovered SEMS during the index procedure using a therapeutic channel upper endoscope (Olympus GIF-ITQ160). Two overlapping 60 x 25 mm colonic SEMS (Wallflex™, Boston Scientific Inc., Natick, MA) were successfully deployed across the stricture. The distal end of the second stent was positioned 5 cm from the anal verge. Following stent placement, the patient had complete clinical and radiographic resolution of his large bowel obstruction (Figure 2).

One year after stent placement, the patient presented for surveillance colonoscopy. The distal end of the stent could be palpated on digital rectal exam and the stent appeared patent as the regular upper endoscope passed

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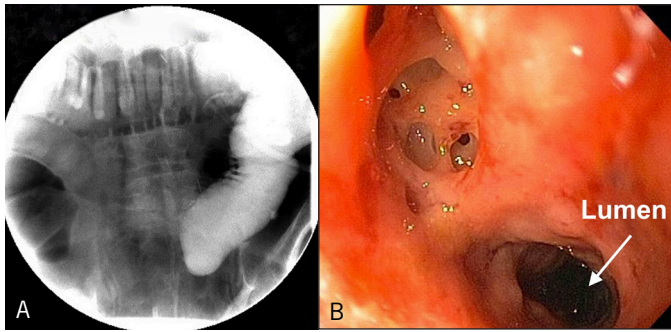


Figure 1. (A) Barium enema and (B) endoscopic image of the high-grade distal colonic obstruction caused by a 5-cm anastomotic stricture.

freely into the stricture. Within the strictured segment, there was tissue ingrowth through the interstices of the stents (Figure 3). Biopsies of this tissue revealed chronic inflammation without evidence of carcinoma. One year later (2 years post-stent placement), the patient presented with hematochezia. Repeat colonoscopy showed extensive tissue infiltration through the walls of the colonic stents. Biopsies were again negative for malignancy. The bleeding resolved spontaneously.

Four years post-stent placement, the patient presented again for intermittent rectal bleeding. Flexible sigmoidoscopy was performed without evidence of a visible stent in the distal rectum. However, as the regular upper endoscope (8.6 mm Olympus GIF-160) was advanced, a non-obstructing stricture was appreciated in the proximal rectum. Tissue hypertrophy and a small ulcer were noted at the site of the stricture (Figure 4). Biopsies were negative for malignancy. A pelvic radiograph showed that the stents remained partially in place, with absence of the most proximal and distal flares (Figure 4). He presently remains symptom-free.

Discussion

In the 1990s, colonic stenting with SEMS was introduced as a means of reducing the morbidity and mortality in patients with malignant colonic obstruction.^{1,6} For patients with benign colonic obstruction, standard traditional treatment includes bougie or balloon dilatation followed by surgical resection

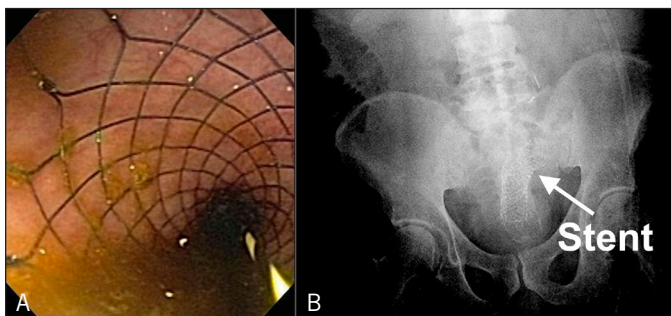


Figure 2. Complete resolution of the colonic obstruction occurred immediately after SEMS placement, as evidenced by (A) colonoscopy and (B) plain abdominal radiograph.

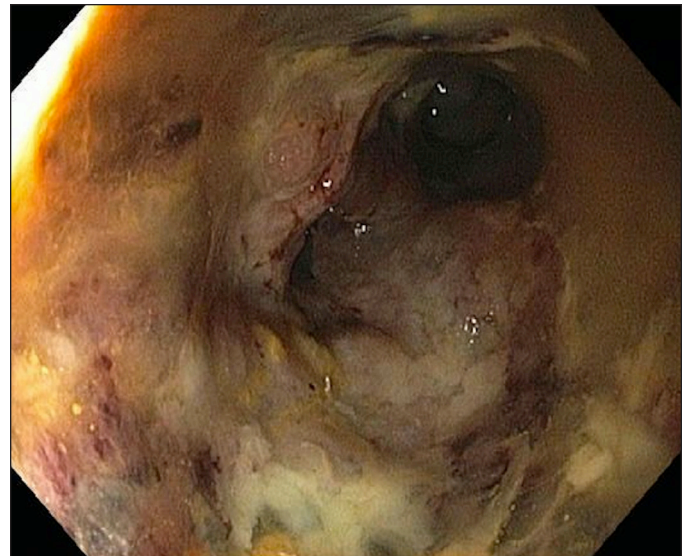


Figure 3. Surveillance colonoscopy 1 year after SEMS placement showed patent stents in the rectum with complete tissue ingrowth that appeared friable and inflammatory in nature.

for recurrent disease.^{3,4} Compared to malignant obstruction, the use of SEMS for benign disease is believed to have higher rates of stent migration, perforation, bleeding, mucosal overgrowth, and recurrent obstruction.^{3,4,6-10} Benign strictures tend to dilate over time when exposed to constant circumferential pressure from SEMS, causing the SEMS to dislodge. These complications may occur up to 36 months after SEMS placement.⁵

Although concerns for safety and efficacy have previously limited their use, recently there has been an increase in the use of SEMS for benign indications.¹¹⁻¹³ In patients who are high-risk for surgery, SEMS is considered a suitable alternative.⁴ Due to this patient's poor functional status and multiple medical comorbidities, SEMS was utilized as a salvage maneuver to treat his benign obstruction and avoid another operation.

Long-term data regarding the use of SEMS in benign colonic obstruction are lacking. In many cases, follow-up is absent

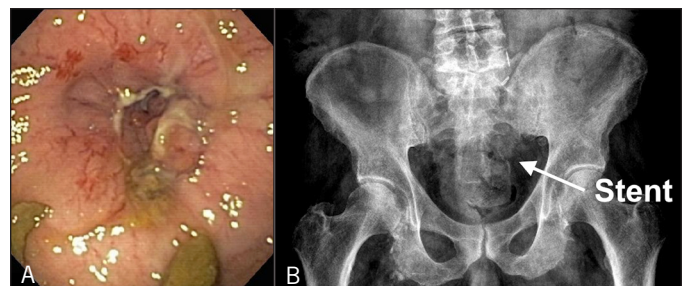


Figure 4. Endoscopic images 4 years after colonic SEMS placement. (A) Stricture at the site of the previously placed stents in the rectum with tissue hypertrophy and a small ulcer. (B) Although no visible stents were seen during the colonoscopy, a portion of the stents was visualized on abdominal radiograph.

after SEMS insertion, and few reports have documented the long-term durability and safety of SEMS in these patients.⁷ The previously reported duration of SEMS placement ranges from 5 days to 2.5 years, averaging 19 months.^{5,9} With more than double the average follow-up time, our case provides a unique perspective on the efficacy of this endoscopic option over time. From quality-of-life studies performed in patients with malignant disease, we can extrapolate that similar benefits might be seen in those with benign disease who have stent placement instead of a diverting colostomy.^{9,14} Our patient's clinical course was complicated by repeated episodes of hematochezia consistent with the bleeding risk associated with long-term use of SEMS.

SEMS may be an effective long-term treatment option in the management of benign colonic obstructions, especially in those deemed to be poor surgical candidates. Careful selection of patients is critical, and the risk of bleeding following stent deployment must be strongly considered prior to placement.

Disclosures

Author contributions: F. Monzur and A. Lewis drafted the manuscript and performed the literature search. J. Buscaglia provided critical revision of the manuscript. All authors discussed and approved the final draft. F. Monzur is the article guarantor.

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