Ileo-Rectal Anastomotic Defect Treated Twice with Endoscopic Tack Suture System and Stenting

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Introduction

Endoscopic closure of anastomotic defects prevent surgical revisions that are riskier and have lower success rates. Choice of closure device depends on the location, size, and working space around the defect. Over-the-scope (OTS) clips and suturing devices require withdrawal of the scope to load and are harder to maneuver through a smaller space as in stenosis. Through-the-scope (TTS) tack and suturing systems prevent the need to withdraw the scope and can be deployed in very small spaces. We present a case of a recurrent post-surgical leak leading to wound dehiscence and enterocutaneous fistula of an ileorectal anastomosis associated with a stenosis requiring a through-the-scope tack and suturing system for closure.

Case Presentation

A 60-year-old woman was admitted after a recent subtotal colectomy with ileo-colonic anastomosis for a large adenoma that was unable to be resected endoscopically.
She developed a pelvic abscess and wound dehiscence. She underwent exploratory laparoscopy with resection of the anastomosis with end-ileostomy creation. She later underwent open ileostomy reversal with ileo-rectal anastomosis and drain placement. Output continued from both the drain and the midline incision. Gastroenterology was consulted for endoscopic intervention.
Colonoscopy showed a large defect in the ileo-rectal anastomosis that was about thirty to forty percent circumferential with significant stenosis. Through-the-scope tack and suturing system was employed after argon plasma coagulation and a fully covered esophageal stent was deployed across the defect. Two weeks later she reported cessation of incisional drainage and minimal output of 30mL from her drain.
During repeat colonoscopy, the initial tack and suturing device was found to be in place on the ileal side, but the two tacks had come lose from the colonic mucosa. A small, well defined, round defect was found at the anastomosis. It was again treated with APC, tack and suturing, and stent placement. The stenosis was still present but improved. She was instructed to return to clinic in two weeks.

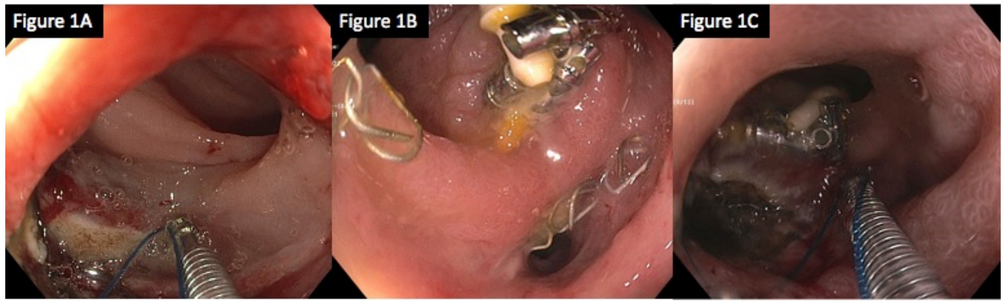

Figure 1A: Tack placement following APC at anastomotic defect.
Figure 1B: Initial tack suture with 2 tacks dislodged from colonic mucosa and small improved defect in anastomosis.
Figure 1C: Tack placement for closure of persistent defect.

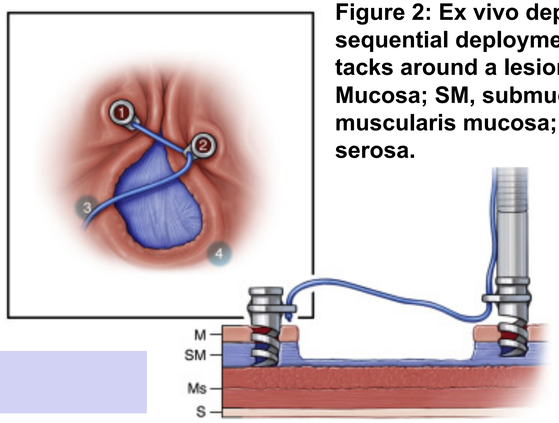

Figure 2: Ex vivo depiction of sequential deployment of tacks around a lesion. M, Mucosa; SM, submucosa; Ms, muscularis mucosa; S, serosa.

Discussion

- Our case presents the use of a novel tack suturing system to close a recurrent post-surgical leak secondary to wound dehiscence and enterocutaneous fistula of an ileorectal anastomosis
- A through-the-scope tack and suturing system is an ideal tool for defect closure in tight spaces where over-the-scope clips or suturing are too bulky. Tack and suturing with overlying stenting has prevented this patient from going back to the operating room and getting a colostomy. While her anastomosis has been healing, her defect is getting smaller resulting in less output.
- Commonly used defect closing devices such as the OTSC and endoscopic suturing device can be too large to navigate severe esophageal strictures. The tack suture system can be deployed through the 2.8 mm working channel of a standard gastroscope.
- The endoscopic tack sutures system can aid in the closure of fistulas, perforations, anastomotic leaks and submucosal dissections.
- While preclinical data reported no adverse events, possibilities include wound dehiscence, delayed perforation, and bleeding if the tacking system is improperly placed.
- Mahmoud et al. conducted the first and only multicenter study describing the feasibility and safety of the endoscopic tack suturing device in the clinical setting and found successful closure of defects in approximately 90% of cases. Adverse effects only occurred in 2% of study patients.
- Further, when compared to through the scope clip intervention, tack sutures were superior for acute closure of large mucosal defects with similar rates of healing.
- This novel tack suture system is a useful tool in cases that are limited to the parameters of a standard gastroscope.

References

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