Spontaneous Migration of Spiral Fin Overtube During Motorized Spiral Enteroscopy

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ABSTRACT

Motorized spiral enteroscopy (SE) is a novel technique for evaluation and management of small bowel lesions. Total enteroscopy rates are higher with SE. Power spiral tube with spiral soft fin helps in advancement of the scope. SE has low adverse event profile; however, perforation and pancreatitis have been reported. We report the unusual adverse event of power spiral tube with spontaneous dislodgement of spiral fin in 2 cases.

INTRODUCTION

Small intestinal pathology poses special challenges for diagnostic and therapeutic procedures because of its complex anatomical construction. Small bowel enteroscopy is continuously evolving, and enormous progress has been made in the last decade. The advent of motorized spiral enteroscopy (SE) eased the evaluation as well as management of small bowel evaluation by greater extent. SE uses soft spiral-shaped fins textured over the power spiral tube, for pleating small bowel mucosa over the spiral tube (Figure 1). Pleating with clockwise movement of the motorized spiral over the scope assists progression of scope into the small bowel. Advantages of the motorized SE are single operator use, higher total enteroscopy rates, and shorter duration of the procedure.¹ Limited data are available about the adverse events. Rates of adverse events in different studies range from 10% to 14% and include minor mucosal trauma to major events such as perforation and pancreatitis.² Most adverse events occur because of usage technique and wide diameter of the power spiral tube. Malfunctioning of the power spiral overtube with spontaneous dislodgement of fins was never reported.

CASE REPORT

Case 1: A 49-year-old woman presented with occult obscure gastrointestinal (GI) bleed. Her contrast-enhanced computed tomography of the abdomen showed jejunal thickening. She underwent motorized SE under general anesthesia. Advancement of enteroscope was difficult beyond D2-D3 junction, and, as the operator had limited experience, further forceful advancement was avoided, and the procedure was abandoned. During withdrawal of the enteroscope, we noticed that the silicon spiral fin of the tube dislodged into antrum (Figure 2). The fin was successfully retrieved with rat tooth forceps (Figure 3).

Case 2: A 51-year-old man presented with iron deficiency anemia. Upper GI endoscopy and colonoscopy were normal. Capsule enteroscopy showed multiple telangiectasias into the jejunum. Patient underwent motorized SE-guided thermal ablation. The telangiectasias in proximal small bowel were coagulated successfully with hot biopsy forceps. The spiral silicon fin over the proximal end of enteroscope was dislodged into the lumen while attempting to advance further into distal jejunum (Figure 4). The procedure was abandoned, and retrieval of the sheath was attempted several times. However, all attempts failed. Other modalities such as single balloon enteroscopy were not attempted to retrieve the fins because the patient did not give consent and wanted a conservative approach. He was observed for 48 hours, and during that period, he noticed spontaneous passage of the fins in the stools.
DISCUSSION

Motorized SE is a novel tool in the GI armamentarium for evaluation and management of the small bowel pathology. It uses a power spiral tube, which is an overtube with soft spiral-shaped fins over it. Clockwise movement of the motorized power spiral tube causes pleating of mucosa and helps forward progression of the scope. The overtube is made of polyvinyl chloride, whereas spiral-shaped fins are made of silicone. Mallory-Weiss tear, pancreatitis, hypothermia, and small bowel perforation are well-known adverse events.2,3 Manual SE uses Endo-Ease Discovery SB and Endo-Ease Vista Retrograde overtubes, which require manual rotation. Sore throat and mucosal trauma of varying severity were the most common adverse events because of larger size of overtube.4 Severe complications such as perforation have occurred during forceful insertion/advancement of the scope and by less-experienced endoscopists (less than 10 cases).5 However, malfunctioning of spiral fins of the overtube was never described with manual or motorized SE. Mechanism of dislodgement of spiral fin of overtube is unclear. Possible reasons for migration could be excessive rotation of softer fin over rigid overtube during forceful advancement. An inexperienced endoscopist could have pushed the scope with some force while motorized rotation of fin is on and lead to the dislodgement from unsynchronized movement.

SE is a relatively new device with limited literature and expertise. Spiral fin dislodgement was a complication experienced...
during our limited experience (20 cases). In one of the above 2 cases, fin was not retrieved successfully. The spiral fins are radiolucent fluoroscopy, which is not helpful in localisation. Although spiral fins may pass into the stool spontaneously, patients should be observed and followed until migration of fin. Spontaneous dislodgement of silicon spiral fin of overtube can occur during the procedure and hamper further advancement of SE into small bowel. During power SE, malfunctioning of spiral fins must be considered when forceful resistance is encountered.

Figure 4. Dislodged spiral fin.

DISCLOSURES

Author contributions: P. Bhatt, V. Tadkalkar, and S. Rajput wrote the manuscript. R. Pipavit, C. Gandhi, P. Bhatt, and V. Bachkaniwala retrieved the endoscopy images. All authors drafted, revised, and approved the manuscript. Pratin Bhatt is the article guarantor.

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