Endoscopic sleeve gastroplasty: the "cable" technique

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Endoscopic sleeve gastroplasty (ESG) is a minimally invasive procedure for the treatment of obesity whereby transmural sutures are placed to reduce gastric volume. An endoscopic suturing system (OverStitch, Apollo Endosurgery, Austin, Tex, USA) is used to create a running suture pattern that imbricates the greater curvature of the stomach, resulting in a reduction in functional volume by approximately 70%, in addition to 30% foreshortening.[1-3]

Various suture patterns for performing ESG have been described, including a Z-pattern, which involves suturing in a triangulated configuration, a U-pattern that requires additional stitch placement and enhances foreshortening, and a parallel suture row pattern that more evenly distributes tension.[4-6] Here we describe a novel suturing approach that we have termed the "cable" technique (Fig. 1). This approach draws on the benefits of the previously reported suture patterns.

A 44-year-old woman with a history of obesity (body mass index 33 kg/m^2) was referred for ESG. As demonstrated in this video (Video 1, available online at www.VideoGIE.org), the technique begins with the creation of a "cable" along the posterior wall (Fig. 2). This is accomplished by placement of 2 sutures, each with 3 or 4 stitches, in a running pattern from distal to proximal. A second cable is then repeated along the greater curvature using the same approach (Fig. 3).

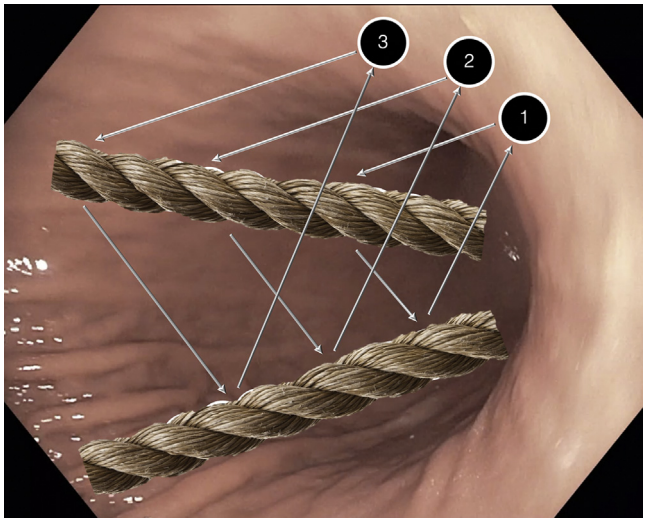

Figure 1. Overview of the "cable" technique.

Figure 2. Endoscopic appearance after creation of the first cable along the posterior wall.

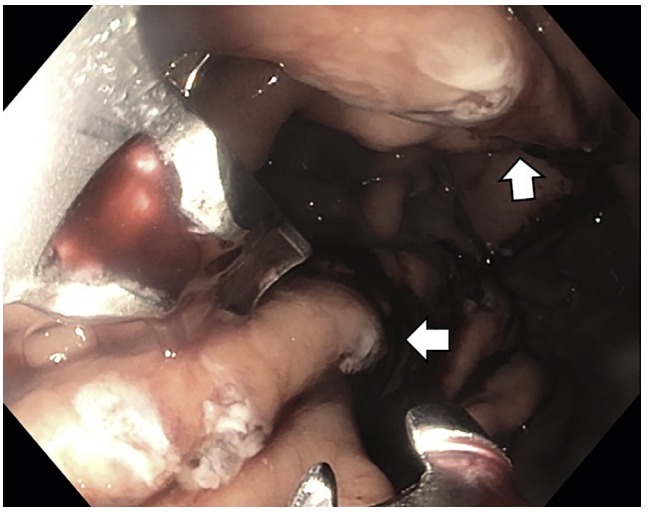

Figure 3. Endoscopic appearance of the gastric lumen after cable creation along the posterior wall and greater curvature.

After creation of these cables, or ridges, sutures are then placed in a running pattern. Taking advantage of these cables, stitch placement can be performed with the potential for decreased use of the grasping device (Fig. 4). This pattern is then repeated from the incisura to the gastroesophageal

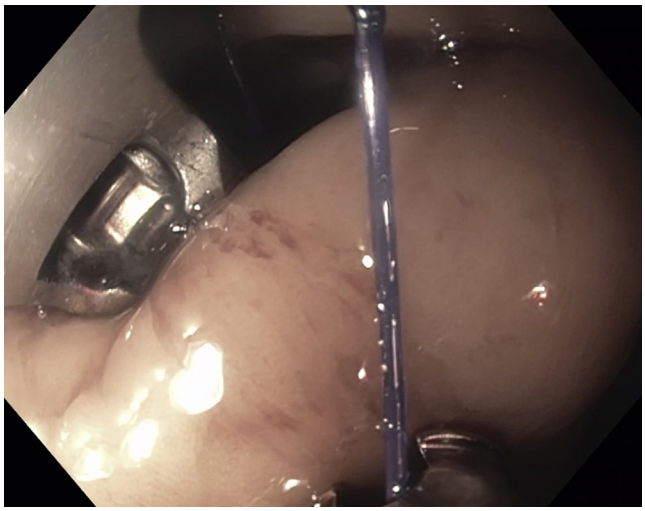

Figure 4. Full-thickness endoscopic stich placement after cable creation, without the use of a tissue grasping device.

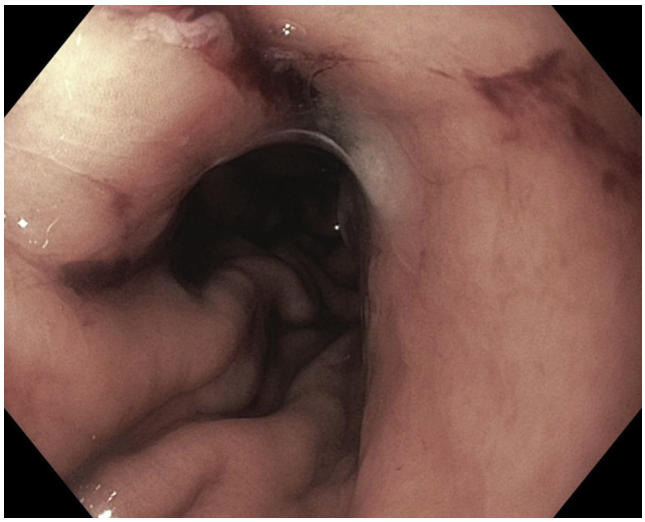

Figure 5. Narrowed gastric lumen after completion of endoscopic sleeve gastroplasty using the cable technique.

junction, leaving a small intact fundus (Fig. 5). Preintervention and postintervention measurements demonstrated lumen foreshortening of 21 cm.

The novel cable technique shown here combines the benefits of previously described suture patterns with ease of stitch placement and enhanced foreshortening. Although standardization of ESG technique is important for widespread adoption, this approach may provide an alternative option in variant gastric anatomy or when traditional ESG suture patterns are challenging. Further study evaluating outcomes and long-term durability is underway.

DISCLOSURE

Dr Schulman is a consultant for Apollo Endosurgery, Boston Scientific, MicroTech, and Olympus and has received research/grant support from GI Dynamics. All other authors disclosed no financial relationships.

Abbreviation: ESG, endoscopic sleeve gastroplasty.

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