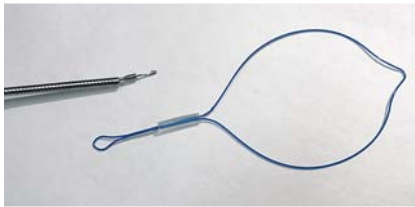


A novel endoloop pretest to treat severe gastroesophageal reflux disease symptoms before anti-reflux mucosectomy

A 44-year-old man with a 6-year history of gastroesophageal reflux disease (GERD; score of 30 on GERD questionnaire) underwent an upper gastrointestinal (GI) endoscopy, which revealed esophagitis (Los Angeles grade A). After failure of maximal medical therapy for GERD, the patient underwent a new minimally invasive, reversible endoscopic treatment, with the aim of predicting whether his symptoms could be alleviated, in order



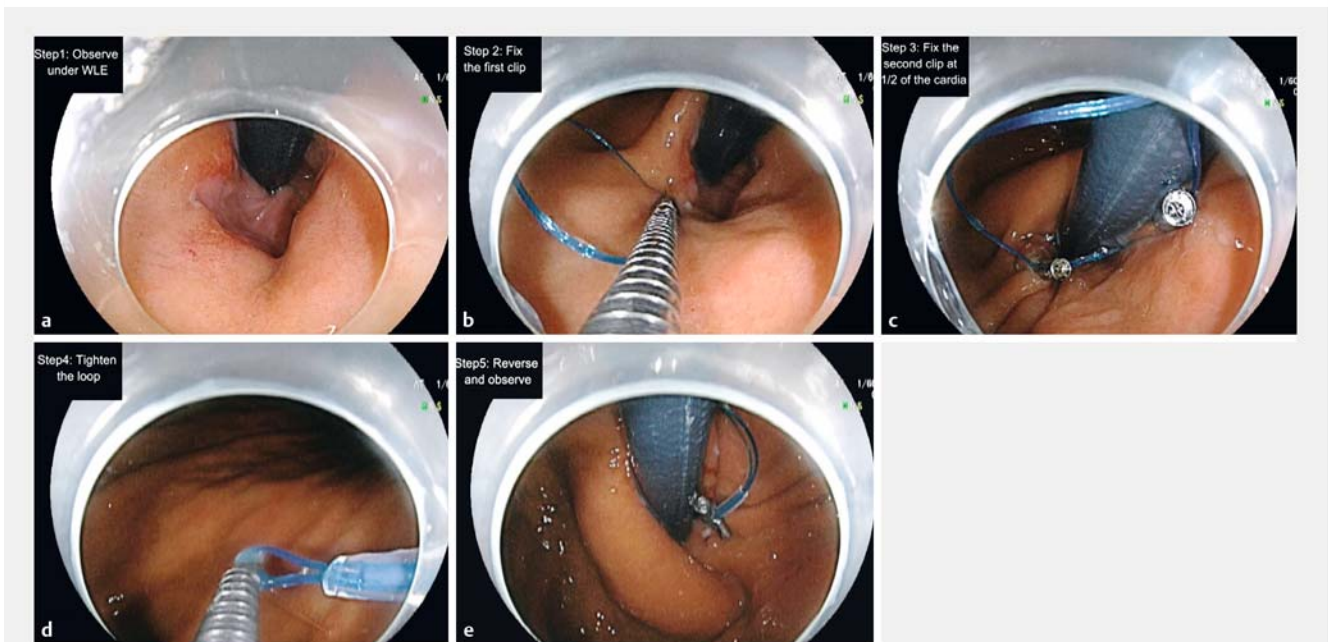
► **Fig. 1** The LeCamp endoloop.

to ultimately decide whether to undergo irreversible surgery or endoscopic treatment.

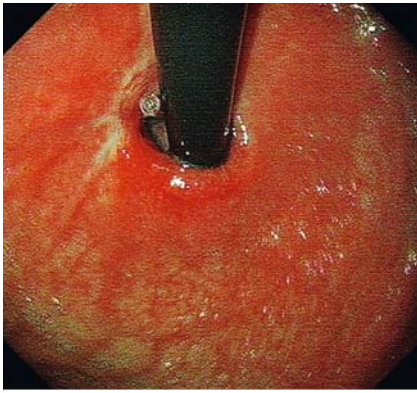
A novel LeCamp endoloop (Leo Medical, China) (► **Fig. 1**) was inserted into the gastric cardia using forceps passed through a single-channel endoscope (► **Fig. 2a**). After adjustment of the location and angle of the endoloop, it was anchored onto the edge of the gastric cardia with a clip (► **Fig. 2b**) and another one or two clips were inserted to hold the opposite side of endoloop about half-way round the circumference (► **Fig. 2c**). The hook was then connected with the endoloop (► **Fig. 2d**), which was tightened with a slight pulling together of all the clips (► **Fig. 2e**). The patient did not experience any pain and was safely discharged the same day.

After the treatment, the patient showed significant improvement in his symptoms with a score of 4 points on the GERD questionnaire and was able to discontinue daily use proton pump inhibitors. At 1-month follow-up, the patient complained that the symptoms were gradually re-appearing, repeat upper GI endoscopy revealed the endoloop and the clips had dropped off. After the patient had given his consent, anti-reflux mucosectomy (ARMS) was performed using standard endoscopic submucosal dissection [1]. At the 3-month follow-up, he reported significant reduction in GERD questionnaire scores and his upper GI endoscopy showed a tight gastroesophageal junction (► **Fig. 3**).

In this patient, we used a novel pretest to narrow the gastric cardia before he underwent ARMS, which suggests that this



► **Fig. 2** White-light endoscopy views showing: **a** the gastric cardia; **b** the endoloop being fixed with the first clip using forceps passed through a single-channel endoscope; **c** a second clip being applied halfway around the circumference of the cardia; **d** the hook being connected to tighten the endoloop; **e** the gastric cardia in retroflexed view after the endoloop has been fixed and tightened.



► **Fig. 3** Endoscopic appearance 3 months after undergoing anti-reflux mucosectomy showing a tight gastroesophageal junction.

Step5: Reverse and observe



► **Video 1** A novel endoloop pretest to treat severe gastroesophageal reflux disease symptoms before anti-reflux mucosectomy in a 44-year-old man.

new technique may be a simple and reversible method to control symptoms temporarily in GERD patients, while they decide whether to undergo irreversible surgery or endoscopic treatment.

Endoscopy_UCTN_Code_CCL_1AB_2AC_3AC

Competing interests

None

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DOI <https://doi.org/10.1055/a-0861-9849>
 Published online: 12.4.2019
 Endoscopy 2019; 51: E193–E194
 © Georg Thieme Verlag KG
 Stuttgart · New York
 ISSN 0013-726X

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