Premature explantation of an EndoBarrier gastrointestinal liner because of sleeve invagination

Fig. 1 The EndoBarrier gastrointestinal liner consists of a 60-cm fluoropolymer "sleeve" that is anchored in the duodenal bulb. It creates a duodenal–jejunal bypass by internally lining the mucosa of the proximal small intestine. The device is implanted and explanted endoscopically while the patient receives general anesthesia or conscious sedation. The EndoBarrier is CE-marked for up to 12 months of use in the treatment of obese patients with or without type 2 diabetes.

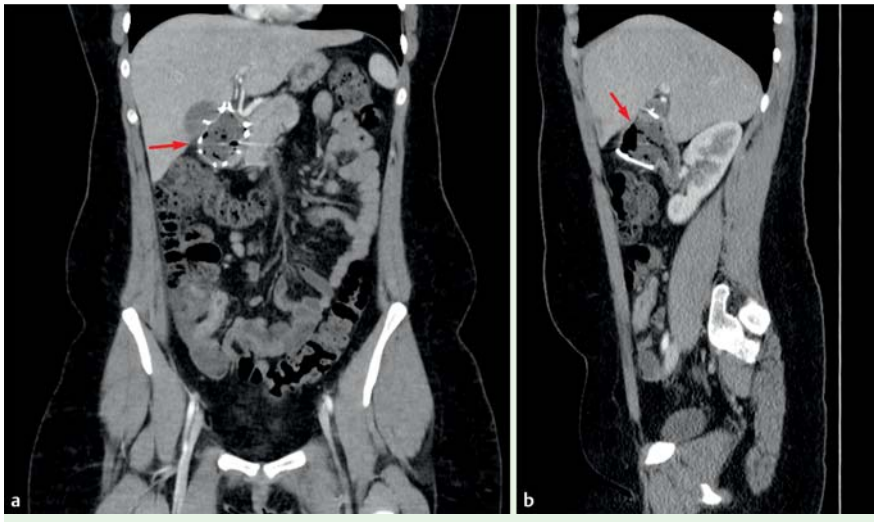

Fig. 2 Contrast-enhanced computed tomographic scan of the abdomen shows no migration or signs of obstruction of the device. The anchor is correctly situated in the duodenal bulb (arrow). **a** Coronal projection. **b** Sagittal projection.

The EndoBarrier gastrointestinal liner (GI Dynamics, Lexington, Massachusetts, USA) (**Fig. 1**) is an endoscopically deployed and fully reversible treatment modality for type 2 diabetes and/or obesity [1]. Adverse events related to its use include transient abdominal pain, nausea, and vomiting, which typically occur within the first 2 weeks after implantation.

We present the first case of premature explantation of the EndoBarrier after recurrent abdominal pain, nausea, and vomiting due to invagination of the sleeve.

Following implantation, a 25-year-old obese woman experienced recurrent epigastric pain and nausea with occasional vomiting. The severity of the symptoms led to hospitalization 4 weeks after implantation. Abdominal computed tomography revealed no migration or signs of obstruction of the device (**Fig. 2**), and a biochemical profile showed the following elevated values: plasma alanine transaminase, 84 U/L (normal range 10–45); aspartate transaminase, 53 U/L (normal range 10–35); amylase, 205 U/L (normal range 10–65). The white blood cell count remained normal, but the C-reactive protein level fluctuated up to 58 mg/L (normal values <10). Upper gastrointestinal endoscopy revealed invagination of the device (**Fig. 3**), which was uneventfully explanted. The patient was discharged well and with normalized blood values.

Abdominal pain, nausea, and/or vomiting are common symptoms within the first 2 weeks after implantation [2]. Similar symptoms have been reported in association with device obstruction [3], but also without obstruction [4]. Other adverse events, which may result in abdominal symptoms, include device-related ulceration [5] and device migration. However, the latter have also been reported in asymptomatic patients [4]. Invagination of the EndoBarrier has not previously been reported. Computed tomography may be employed for diagnosis, but upper gastrointestinal endoscopy seems preferable because it allows device explantation, depending on the findings.

Obstruction of the EndoBarrier due to invagination may be the cause of recurrent epigastric pain. Therefore, it should be emphasized that patients experiencing epigastric pain, nausea, and/or vomiting beyond the first 2 weeks should be thoroughly examined with regard to the function and location of the device.

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Competing interests: None

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Fig. 3 Appearance of the EndoBarrier gastrointestinal liner after explantation because of the patient's recurrent episodes of epigastric pain, nausea, and vomiting. The "anchor" is seen from above; the "sleeve" is invaginated (arrowhead) and tinged by bile. The two drawstrings (arrow), which were used to collapse the anchor during the explantation procedure, are located at the top of the anchor.

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