Radical incision and cutting with an insulation-tipped knife: a new method to treat multiple diaphragmatic strictures of the small intestine

Fig. 1 Single-balloon enteroscopy (SBE) showed a diaphragm with a small orifice in the upper jejunum of a 68-year-old woman with nausea, vomiting, and weight loss that had been present for several months.

Fig. 4 Another diaphragmatic stricture was found in the distal portion of the jejunum.

Fig. 2 A balloon was inserted to dilate the stricture in the upper jejunum.

Fig. 5 The stricture was radically incised with an insulation-tipped knife.

Fig. 3 Bleeding occurred during dilation.

Fig. 6 The stricture was incised successfully.

A 68-year-old Chinese woman presented with nausea, vomiting, and weight loss that had been present for several months. She had undergone esophagogastroduodenoscopy (EGD) and colonoscopy examinations, but no positive findings were detected. Upper gastrointestinal radiography revealed a stricture in the upper jejunum. Hence, single-balloon enteroscopy (SBE) was performed. She had a history of cerebral infarction, and had been taking aspirin (100 mg daily) for 3 years.

During the SBE examination, a smooth diaphragmatic stricture with a 5-mm opening was detected in the upper portion of the jejunum and the scope could not pass through the stricture (Fig. 1). Accordingly, we intended to dilate the stricture with a balloon to a maximum diameter of 12 mm (Fig. 2). However, bleeding occurred during dilation (Fig. 3) and we had to stop the bleeding with hemostatic clips. As a result, we decided to change to the use of an insulation-tipped knife to radically incise a further four diaphragmatic strictures in the distal portion (Fig. 4, Fig. 5). The strictures were incised successfully (Fig. 6), and the scope could be advanced easily. Importantly, no bleeding or perforation were found with this procedure. After the treatment, the symptoms of nausea and vomiting disappeared quickly. In the 16-month follow-up, the patient remained in a good condition and gained 15 pounds (6.8 kg).

Diaphragm disease can affect both the small bowel and colon, and has been associated with the use of nonsteroidal anti-inflammatory drugs (NSAIDs), especially with high daily doses [1,2]. Balloon dilation has been reported to resolve strictures, but it can potentially lead to bleeding or perforation [3]. Radical incision and cutting with an insulation-tipped knife has been used to treat refractory esophageal strictures, and the safety and efficacy have been confirmed [4,5]. However, the use of a radical incision and cutting method in small-intestinal diseases, especially for diaphragmatic strictures, has not been reported. As far as we know, this is the first report to use the method of radical incision and cutting with an insulation-tipped knife to treat multiple diaphragmatic strictures of the small intestine.

Endoscopy_UCTN_Code_TTT_1AP_2AD

Competing interests: None

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DOI <http://dx.doi.org/10.1055/s-0034-1377765>
Endoscopy 2015; 47: E51–E52
© Georg Thieme Verlag KG
Stuttgart · New York
ISSN 0013-726X

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