Treatment of complete esophageal stenosis using endoscopic ultrasound-guided puncture: a novel technique for access to the distal lumen

Fig. 1 Endoscopic view, showing complete obliteration of the esophageal lumen after high-dose chemoradiation in a 62-year-old woman.

Treatment of locally advanced esophageal cancers with high-dose definitive concomitant chemoradiotherapy can lead to high-grade esophageal strictures, or, rarely, total obliteration of the lumen. Strictures can be successfully treated with various endoscopic techniques; however, complete obstruction is a technically challenging problem. Anterograde endoscopic techniques carry the risk of perforation or bleeding. A combined anterograde–retrograde dilation technique, described in a few reports, is another option but requires retrograde access through a prior ostomy [1–4].

We report a novel method for managing complete esophageal obstruction using endoscopic ultrasound (EUS)-guided puncture for access to the distal lumen, previously described only in a case of total colonic stricture using a prototype forward-view echoendoscope [5].

A 62-year-old woman had received high-dose chemoradiation for a squamous cell esophageal carcinoma (stage IIIC) and her esophagus had completely occluded, with severe compromise to her quality of life (Fig. 1). Several attempts to pass a guide wire through the stricture were unsuccessful.

We decided to attempt recanalization of the lumen using an EUS-guided access. The linear echoendoscope (GF-UCT140-

Fig. 2 a, b EUS images of the esophageal total stricture. **a** A thickened esophageal wall (arrows) continues through the stenosis. **b** EUS image of the 19G needle through the stricture (arrow).

AL5; Olympus, Tokyo, Japan) was advanced 24 cm from the incisors and the distal esophageal lumen was identified from the proximal end on the EUS image (Fig. 2a). A 19G needle (Expect Flex; Boston Scientific Corp, Natick, Massachusetts, USA) was used to puncture the obstructed lumen under EUS guidance (Fig. 2b). Contrast filling was visualized under fluoroscopy and a 0.035-inch guide wire (Microvasive Jagwire; Boston Scientific) was advanced through the EUS needle (Fig. 3a,b). An 8-mm biliary balloon (Hurricane RX; Boston Scientific) was used to perform a first dilation under endoscopic and fluoroscopic guidance (Fig. 3c). The endoscopic appearance

after dilation was satisfactory, with re-establishment of luminal continuity (Video 1).

The patient underwent four additional endoscopic balloon dilations of up to 15 mm (Fig. 4). She responded well, gaining the ability to swallow secretions, drinks, and soft food, and without evidence of delayed complications.

Video 1

Successful treatment of a completely obstructed esophageal stricture using endoscopic ultrasound-guided puncture.

Fig. 4 Endoscopic view after two balloon dilation sessions up to 15 mm, at 8-weeks follow-up after recanalization.

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