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

Treatment of locally advanced esophageal cancers with high-dose definitive concurrent 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 though the stricture were unsuccessful. We decided to attempt recanalization of the lumen using an EUS-guided access. The linear echoendoscope (GF-UCT140-AL5; Olympus, Tokyo, Japan) was advanced 24cm 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 15mm (Fig. 4). She responded well, gaining the ability to swallow secretions, drinks, and soft food, and without evidence of delayed complications.
Competing interests: None

Joan B. Gornals1, Claudia Consiglieri1, Josep M. Castellvi1, Xavier Ariza1, Mariona Calvo2, Maica Galan2

1 Endoscopy Unit, Department of Digestive Diseases, Hospital Universitari de Bellvitge-IDIBELL, Barcelona, Spain
2 Department of Medical Oncology, Institut d’Oncologia DiR-IDIBELL, Barcelona, Spain

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Corresponding author
Joan B. Gornals, MD, PhD
Endoscopy Unit, Department of Digestive Diseases
Hospital Universitari de Bellvitge-IDIBELL
(Bellvitge Biomedical Research Institute)
Feixa Llarga s/n
08907 L’Hospitalet de Llobregat
Barcelona
Spain
Fax: +34-93-2607681
gornals@bellvitgehospital.cat

Fig. 3 a Fluoroscopic image of the echoendoscope and an esophagogram obtained after the guided puncture. b, c Endoscopic views. b A 0.035-inch guide wire is advanced to the distal esophageal lumen. c Dilation up to 8 mm with a biliary balloon.

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