Complete endoscopic management of tubular esophageal duplication in a young woman

A 29-year-old woman was referred to our department for endoscopic dilation of upper esophageal stricture. Dilation was performed with Savary–Gilliard dilators allowing the passage with resistance of a standard flexible video gastroscope (EG-201FP; Fujinon, Willich, Germany). Esophagastroduodenoscopy showed a double esophageal lumen at 18 cm from the incisors. A thick bridge of intact mucosa separated the two lumens (● Fig. 1). The passage of the endoscope through the second lumen was not possible. At 32 cm, a distal defect was also found. A barium esophagogram and high-resolution computed tomography (CT) scan confirmed esophageal tubular duplication (● Fig. 2 and ● Fig. 3).

Under general anesthesia, the standard video gastroscope was pushed down to the proximal opening of the duplication. After an easy passage of a 0.035-inch guide wire (Boston Scientific, Natick, MA, USA) in the duplicated lumen, a lengthwise incision of the intraluminal bridge was performed by using a 5.5-Fr needle-knife (microKnife XL; Boston Scientific). The incision was performed step by step, from the upper to the distal end (● Fig. 4, Videos 1–3). The procedure was completed with dilation of the upper esophageal stricture by using a wire-guided balloon (Boston Scientific) advanced through the endoscope and expanded up to 12 mm.

Biopsies performed along the incision showed the presence of malpighian epithelium. The patient’s early post-procedural course was marked by an iatrogenic mediastinal emphysema and bilateral pneumothorax, more pronounced in the left. The placement of a left chest drain led to rapid improvement. Upper endoscopy on day 20 showed two longitudinal residual folds (● Fig. 5).

Endoscopic management of esophageal duplication was reported twice previously for the cystic form [1,2]. To our knowledge, only one case of endoscopic management of a tubular esophageal duplication has previously been reported [3]. Nevertheless, the procedure was decided upon after surgical examination through a right thoracoscopy. Our case highlights the possibility of complete endoscopic management of tubular esophageal duplication. The post-procedure pneumothorax could have been avoided by carbon dioxide insufflation [4].
Interventional endoscopy: a lengthwise incision was made of the intraluminal bridge by using a needle knife starting from the upper end and achieved step by step. The procedure was completed with dilation of the upper esophageal stricture.

**Fig. 4** Image of interventional endoscopy showing incision of the intraluminal bridge by using a needle knife.

**Fig. 5** Endoscopic image of two residual folds of the duplication.

N. Tahri¹, L. Mnif¹, L. Chtourou¹, M. Boudabbous¹, K. Yaïch¹, H. Fourati², Z. Mnif², A. Amouri¹

¹ Department of Gastroenterology, Hedi Chaker University Hospital, Sfax, Tunisia
² Department of Radiology, Hedi Chaker University Hospital, Sfax, Tunisia

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**Corresponding author**

L. Mnif
Department of Gastroenterology
Hedi Chaker University Hospital
Route el Ain
3029 Sfax
Tunisia
Fax: +216-74-243993
leilamnif@yahoo.fr

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