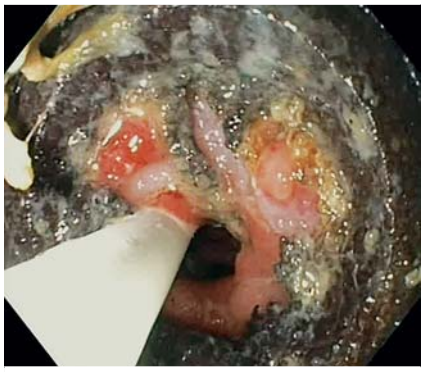
Buried lumen-apposing metal stent (LAMS) in esophagogastric anastomosis: the LAMS-in-LAMS rescue treatment

A 61-year-old man presented with progressive dysphagia and post-prandial vomiting 1 year after undergoing an esophagogastric anastomosis for adenocarcinoma of the gastroesophageal junction. Upper gastrointestinal endoscopy revealed a high grade, anastomotic stricture (1 cm in length) at 25 cm from the incisors, which failed to respond to multiple, serial 15-mm balloon dilation sessions. He subsequently underwent uneventful placement of a lumen-apposing metal stent (LAMS; Axios, 15-mm diameter; Boston Scientific, Marlborough, Massachusetts, USA). This resulted in complete resolution of his symptoms.



▶ **Fig. 1** Endoscopic view showing a buried lumen-apposing metal stent at the esophagogastric anastomosis with only part of its proximal flange visible.

A follow-up endoscopy was performed at 6 months, during which it was found that almost the entire LAMS was embedded with significant tissue overgrowth (▶ **Fig. 1**). A second 15-mm LAMS was placed using the "stent-in-stent" technique, completely overlapping the first LAMS (▶ **Fig. 2**). At a further follow-up endoscopy 3 months later, both LAMSs were easily removed in an atraumatic fashion using rat-tooth forceps (▶ **Video 1**). Inspection of the first LAMS after its removal revealed complete disintegration of its coating, which had led to its embedding, because of the prolonged in-dwell time (▶ **Fig. 3**).

Tissue overgrowth resulting in embedding of LAMSs is a rare complication [1]. It results from the foreign body reaction when the stents are used for the management of benign strictures. In the setting of benign tissue hyperplasia, forcible removal of the stent has been reported to cause luminal perforation [2, 3]. Therefore, the stent-in-stent technique has gained greatest acceptance among endoscopists for removal of embedded covered metal stents [2, 4]. This technique involves placement of another stent, which entirely covers the inside of the trapped stent. This second stent should be of the same diameter in order to achieve tissue necrosis of the hyperplasia, which subsequently results in easy atraumatic removal of the embedded stent.

To our knowledge, this is the first report of the successful removal of an embedded LAMS using the stent-in-stent technique.

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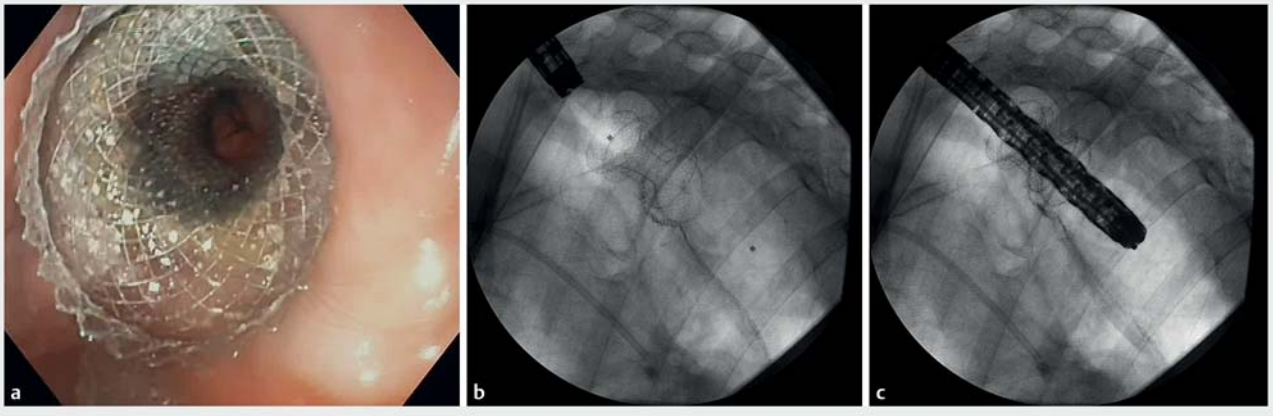
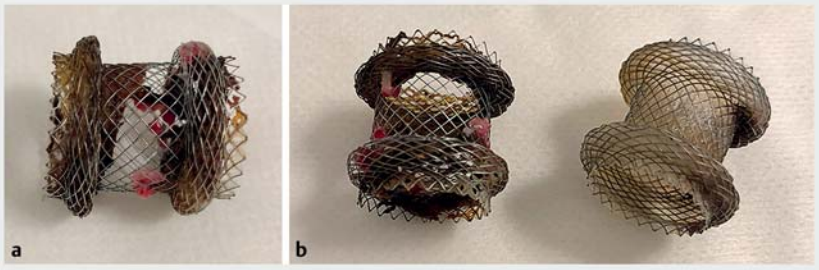
Competing interests

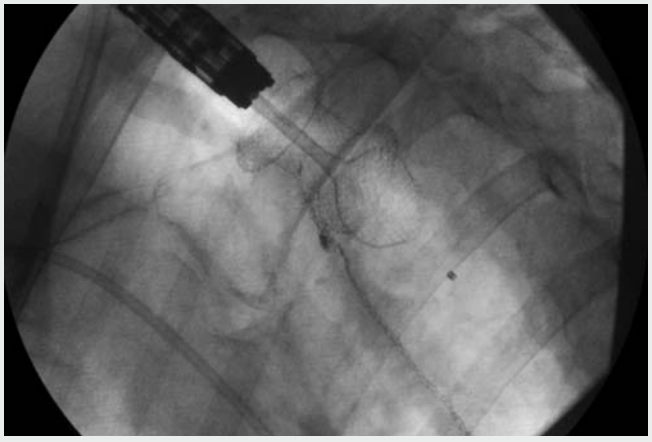
None



▶ **Fig. 2** Placement of the second lumen-apposing metal stent (LAMS), seen on: **a** endoscopic view; **b** fluoroscopic view showing the second LAMS being placed using the stent-in-stent technique; **c** fluoroscopic view showing passage of an endoscope through the stricture after the second LAMS had been placed.



▶ **Fig. 3** Images of the removed lumen-apposing metal stents (LAMSs) showing: **a** the first LAMS with complete disintegration of the coating; **b** both LAMSs side by side.



Video 1 Video showing placement of the first lumen-apposing metal stent (LAMS) across an esophagogastric stricture. After 6 months, almost the entire LAMS is found to be embedded, with significant tissue overgrowth and a second 15-mm LAMS is placed using the stent-in-stent technique. Finally, 1 month later, both LAMSs are easily removed.

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