Intramural esophageal dissection resolved by endoscopic treatment

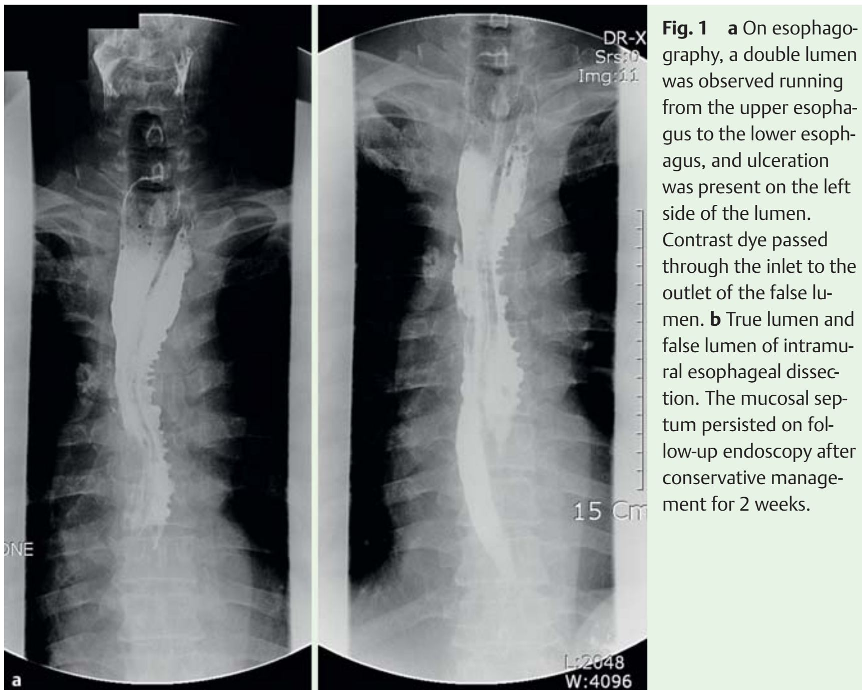
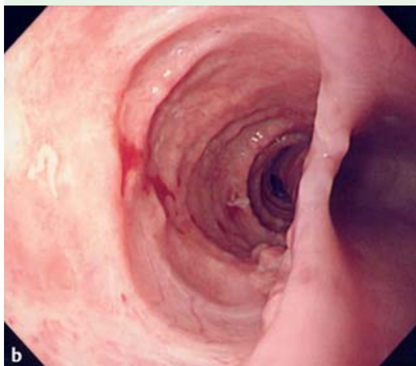


Fig. 1 **a** On esophagography, a double lumen was observed running from the upper esophagus to the lower esophagus, and ulceration was present on the left side of the lumen. Contrast dye passed through the inlet to the outlet of the false lumen. **b** True lumen and false lumen of intramural esophageal dissection. The mucosal septum persisted on follow-up endoscopy after conservative management for 2 weeks.



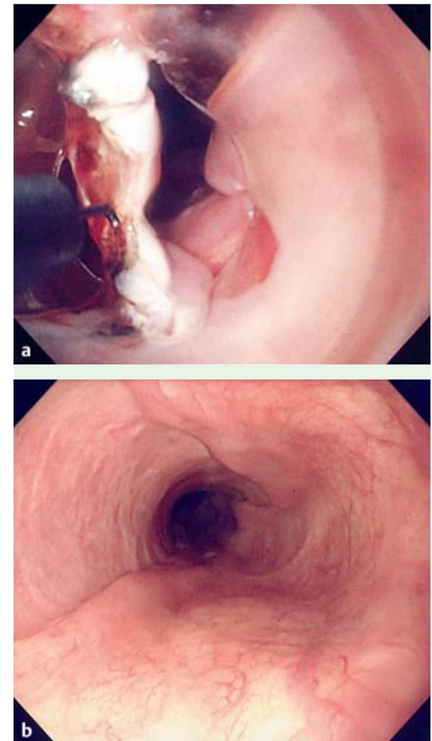


Fig. 2 **a** The septum was introduced into the groove of the cap and then incised with a hook-knife as the scope was advanced. **b** Follow-up endoscopy 3 weeks later demonstrated that both the previously incised mucosa and the ulceration on the false lumen had healed.

Intramural esophageal dissection (IED) is a longitudinal separation between the submucosa and muscular layers of the esophagus without perforation [1]. We report a case of long-segment IED that was successfully treated with an endoscopic cap and hook-knife.

A 62-year-old man with a 2-week history of severe cough and intermittent chest pain was admitted to our hospital. Dysphagia and odynophagia had developed 1 week before admission. On esophagogastroduodenoscopy (EGD), a 2-cm irregular deep ulcer with exudates was found on the esophagus at 20 cm from the incisors and three 0.5-cm mucosal fenestrations at 35 cm from the incisors. Follow-up EGD performed after 1 week revealed a septated esophageal lumen from 20 cm to 35 cm from the incisors. Esophagography also clearly demonstrated the luminal separation (**Fig. 1 a**). A diagnosis of IED was made and the patient was treated conservatively.

When oral intake was permitted after 2 weeks, the patient still complained of dysphasia and regurgitation, and EGD showed persistent intraluminal septum (**Fig. 1 b**). In order to resolve the symptoms, incision of the septum was necessary. To carry out the procedure properly, a grooved-tip transparent cap was made. Two grooves, each 5 mm long and 2 mm wide, facing each other, were carved at the end of the cap, which was then placed at the tip of the endoscope. The septum was then serially introduced into the groove and incised with a hook-knife as the endoscope was advanced (**Fig. 2 a**). The incision was successful without complications. On the following day, when oral intake was permitted, the patient no longer complained of any discomfort. Follow-up endoscopy 3 weeks later demonstrated that both the previously incised mucosa and the ulceration on the false lumen had healed (**Fig. 2 b**).

Although conservative treatment is thought to be adequate for managing IED [2], endoscopic treatment with various techniques using a needle-knife or insulated-tip (IT) knife have been reported to be successful for patients with persistent symptoms such as dysphagia [3 – 6]. In our patient, the septum was relatively thick and long without fenestrations, which necessitated a novel technique for easier and safer incision. Since the mucosal septum could be introduced and locked into the groove, swinging of the endoscopic tip could be minimized. Consequently, the long esophageal septum without fenestration could be safely and successfully incised.

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