

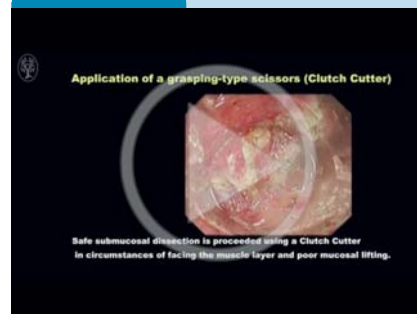
A novel strategy for complete duodenal endoscopic submucosal dissection involving prophylactic defect closure with over-the-scope clips

Duodenal endoscopic submucosal dissection (ESD) remains controversial because of anatomical specificities, technical difficulties, and an unacceptably high rate of complications including delayed perforations and bleeding [1–3]. Accordingly, it is essential to establish a strategy to overcome these problems. A newly developed over-the-scope clip (OTSC; Ovesco Endoscopy, Tübingen, Germany) is now available, which has the advantages of strong grasping and persistent force, and can provide an outstanding outcome for secure defect closure in comparison with conventional hemoclips [4]. Here, we describe how duodenal ESD was safely completed in the setting of general anesthesia, using a safe cutting device and total prophylactic closure of the defect with OTSCs.

A 68-year-old man presented with a 30-mm flat elevated tumor in the second portion of the duodenum (Fig. 1 a). While obtaining informed consent, a therapeutic strategy for this lesion was designed (Video 1).

Duodenal ESD was performed under general anesthesia to guarantee scope stability. When submucosal fibrosis and the muscle layer were encountered during submucosal dissection, a grasping-type scissors forceps (Clutch Cutter, Fujifilm, Japan) [5] was used to avoid the risk of perforation (Fig. 1 b), leading to safe and complete resection. Next, the whole mucosal defect (maximum diameter 35 mm) (Fig. 1 c) was completely closed using two OTSCs, with the aim of preventing delayed complications (Fig. 1 d). A grasping

Video 1



Duodenal endoscopic submucosal dissection (ESD) was completed with the additional use of grasping-type scissors forceps under general anesthesia. The prophylactic closure of the whole defect with two over-the-scope clips prevented delayed complications. This strategy can achieve safe duodenal ESD.

forceps (TwinGrasper; Ovesco Endoscopy) was useful to easily approximate the edges of the large defect. No complications occurred during the operation. Histological examination of the resected specimen (Fig. 1 e) revealed curative re-

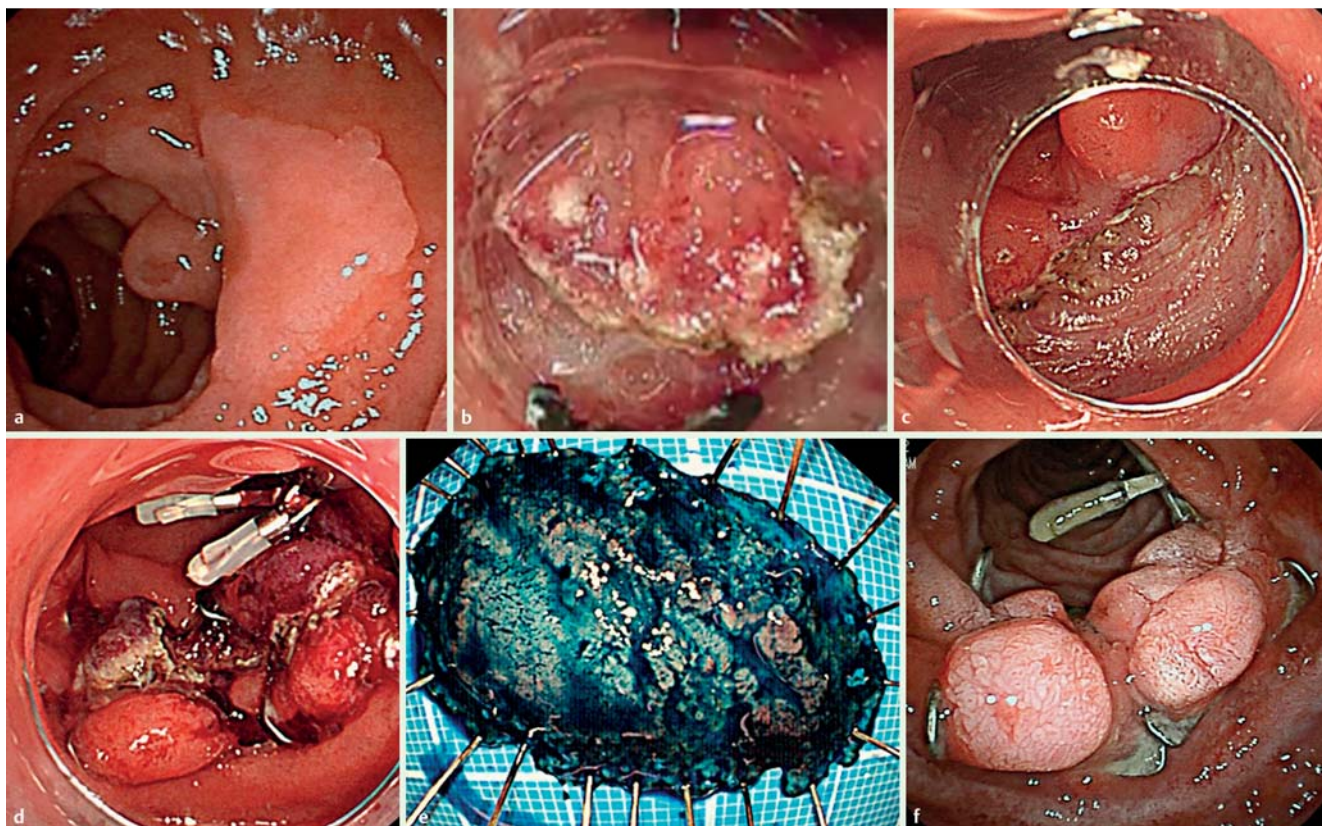


Fig. 1 Endoscopic submucosal dissection (ESD) in the duodenum. **a** Endoscopy revealed a flat elevated tumor (diameter 30×22 mm) in the second portion of the duodenum. **b** When submucosal fibrosis and the muscle layer were encountered during submucosal dissection, a grasping-type scissors forceps was used to avoid the risk of perforation. **c** A large mucosal defect was observed after ESD. **d** Complete closure of the defect was achieved with two over-the-scope clips, with the aim of preventing delayed complications. **e** Macroscopic specimen (35×26 mm; indigo carmine staining) confirmed en bloc resection. Subsequent pathohistological assessment confirmed curative resection of an adenocarcinoma with adenoma. **f** Complete closure of the defect with two over-the-scope clips was confirmed by endoscopy 3 months after treatment.

section of an adenocarcinoma with adenoma. Complete closure of the defect was confirmed 3 months later (● Fig. 1 f). The patient had an excellent outcome with this minimally invasive treatment and without associated complications. We propose that complete duodenal ESD may be feasible using a multidisciplinary strategy involving general anesthesia, grasping scissors forceps, and OTSCs.

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Competing interests: None

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