

Overtube-assisted over-the-wire stent placement to treat a post-surgical duodenal leak



Fig. 1 Post-surgical duodenal leak following right hemicolectomy because of distal ileum abscess in a 51-year-old woman with Crohn's disease.

A 51-year-old woman affected with Crohn's disease developed a distal ileum abscess requiring right hemicolectomy. A few days later, bile was flowing from surgical drains, and a computed tomography (CT) scan showed a duodenal leak. Surgical suture of the duodenal wall was attempted, but failed.

The patient was then referred to our institute and, to promote duodenal healing, the predetermined goal was to stop both the enteric and the biliary flows through the leak (Fig. 1). A percutaneous transhepatic cholangiography (PTC) was done to divert bile flow. To divert the enteric flow, a treatment with a fully covered metal stent (26 mm body diameter, 34 mm flare diameter, and 10 cm length; Beta stent; Taewoong Medical, Gyeonggi-do, South Korea) (Fig. 2) was planned. The Beta stent is an over-the-wire stent, with a

specific antimigration system, developed for the treatment of post-bariatric surgery leak. To enhance the depth of the stent insertion into the duodenum, a single-balloon enteroscopy overtube (ST-SB1; Olympus Europe, Hamburg, Germany) was used to prevent gastric looping thus straightening the release system from the esophagus through the stomach to the distal duodenum [1]. The procedure was carried out under endoscopic and radiologic control and with the patient under general anesthesia. The enteroscopy overtube was advanced through the duodenum and stabilized beyond the ligament of Treitz. A small orifice was created by puncturing the overtube about 70 cm from its distal end (Fig. 3 a) and the Beta stent was inserted through the orifice over the wire (Fig. 3 b). When the stent was in the correct position, the overtube was twisted and slightly retracted allowing stent placement from the duodenal bulb beyond the ligament of Treitz (Video 1). The abdominal drainage flow stopped immediately, and the patient was restarted on oral feeding 1 week later. The stent was removed 3 months later, and the leak



Fig. 2 Beta stent. (Image by kind permission of Taewoong Medical.)

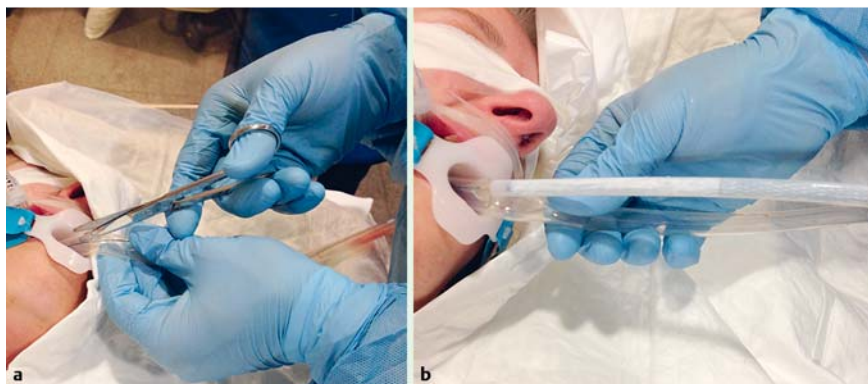


Fig. 3 An overtube was advanced to the distal duodenum, to assist placement of the large-bore stent. **a** Small orifice created by puncturing the overtube. **b** Over-the-wire stent insertion through the orifice.

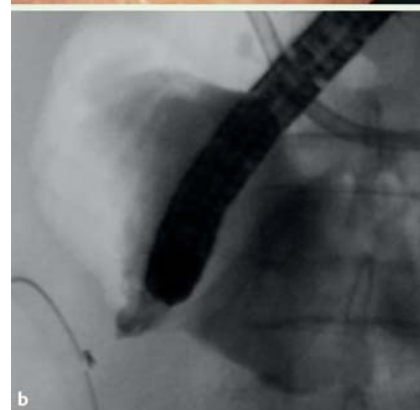
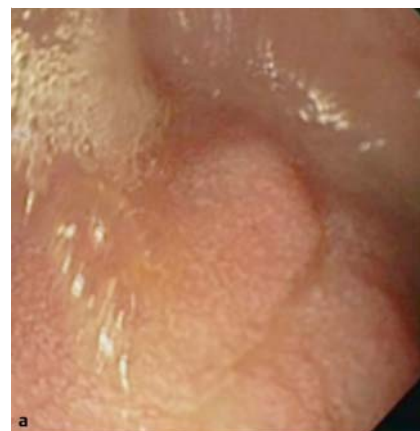
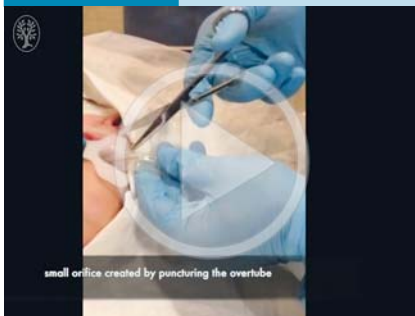


Fig. 4 Site of the resolved duodenal leak.

Video 1



Post-surgical duodenal leak treated by over-tube-assisted over-the-wire stent placement.

appeared to have resolved (Video 1, Fig. 4). The patient remained asymptomatic during the 8-month follow-up. Duodenal leak is a life-threatening condition, with a high rate of complications, and entailing a long period of hospitalization. Diversion of the enteric and the bili-

ary flows away from the fistula seems to be effective in promoting rapid healing [2]. This report describes a new, over-tube-assisted method for safely releasing a large-bore over-the-wire enteral stent directly into the duodenum to resolve a case of leakage.

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Competing interests: None

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Bibliography

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