

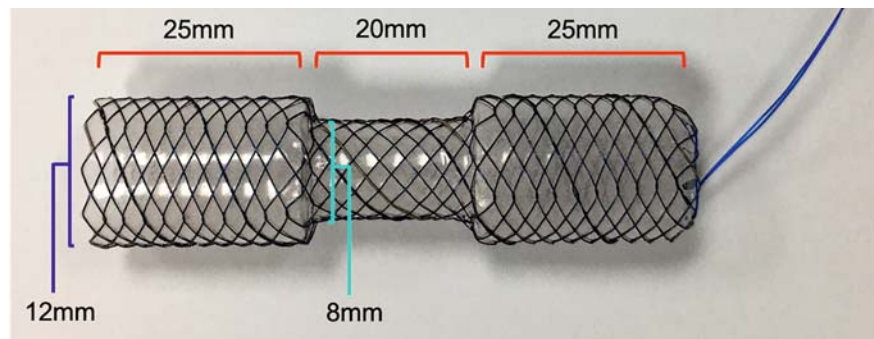
Endoscopic ultrasound-guided gastroenterostomy using a novel dumbbell-shaped fully covered metal stent for afferent loop syndrome with long interluminal distance

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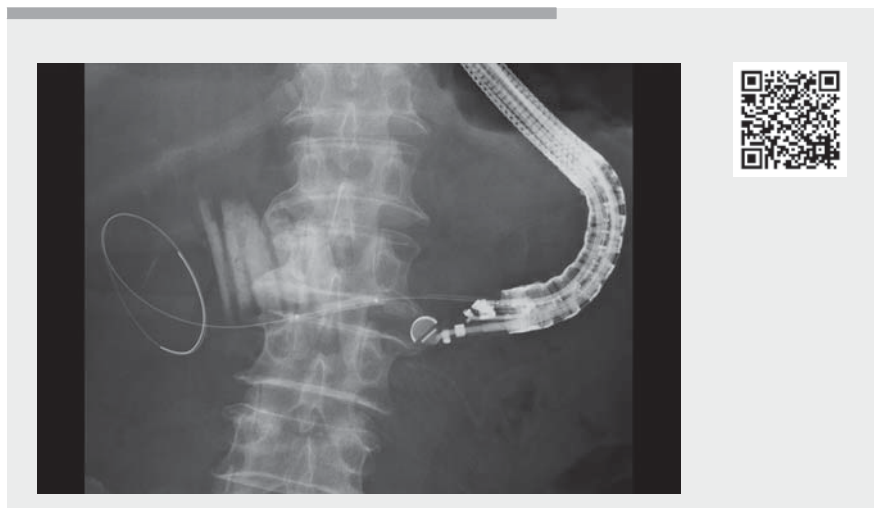
Endoscopic ultrasound-guided gastroenterostomy (EUS-GE) with a lumen-apposing metal stent (LAMS) (Hot Axios; Boston Scientific, USA) effectively manages afferent loop syndrome [1,2]. The LAMS prevents stent migration and fluid leakage. However, because the distance between the flanges of the LAMS is 10 mm, if the distance between the afferent limb and the stomach increases beyond this distance, the risk of technical failure and complications increases [3].

Recently, a novel dumbbell-shaped fully covered self-expandable metal stent (FCSEMS) (Bonastent M-Intraductal; Standard SciTech Inc., Seoul, Korea) has become available [4]. Its unique shape, with a diameter in the central saddle portion that is thinner (8 mm) than that of the proximal and distal portions (12 mm), provides comparable antimigration properties to the LAMS. The length of the central saddle portion is 20 mm, longer than that of a LAMS (► Fig. 1). We performed EUS-GE using a novel dumbbell-shaped FCSEMS for afferent loop syndrome with a long interluminal distance (► Video 1).

A 68-year-old man who had undergone pancreaticoduodenectomy for pancreatic cancer presented with severe abdominal pain. Computed tomography (CT) revealed a dilated afferent limb with ascites, and a diagnosis of afferent loop syndrome with peritonitis was made. Although the distance between the stomach and the afferent limb was 20 mm, we elected to perform EUS-GE (► Fig. 2). Endoscopic enteral stenting risks perforation of the afferent limb owing to increased intestinal pressure during the procedure. The dilated afferent limb was punctured using a 19-G needle from the stomach and contrast medium was injected. A 0.025-inch guidewire was placed into the dilated afferent limb; the needle tract was dilated using a 4-mm



► **Fig. 1** The novel dumbbell-shaped fully covered self-expandable metal stent (FCSEMS) (Bonastent M-Intraductal; Standard SciTech Inc., Seoul, Korea), with a diameter in the central saddle portion that is thinner (8 mm) than that of the proximal and distal portions (12 mm), has antimigration properties. In addition, the length of the central saddle portion is 20 mm, which is longer than that of a lumen-apposing metal stent.

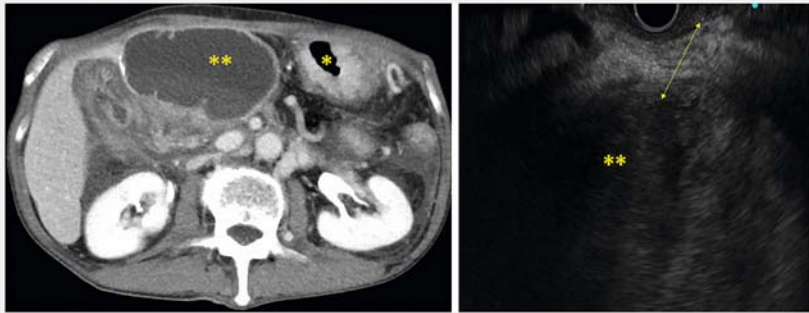


► **Video 1** Successful endoscopic ultrasound-guided gastroenterostomy using a novel dumbbell-shaped, fully covered metal stent for afferent loop syndrome with a long distance between the two lumina.

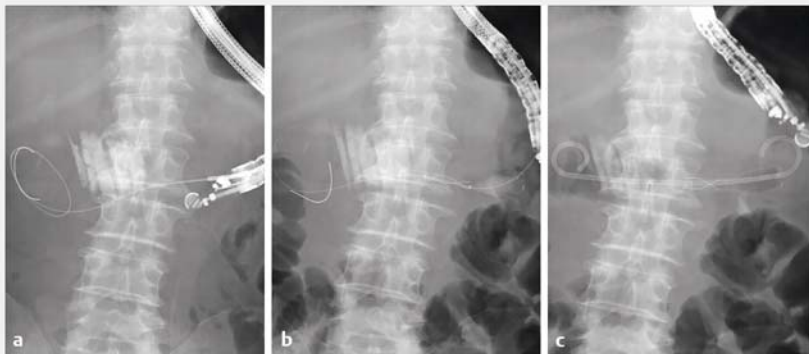
ultra-tapered balloon catheter. The novel FCSEMS was deployed, apposing the dilated afferent limb and the gastric walls. A 7-Fr double-pigtail plastic stent was placed across the FCSEMS to prevent SEMS-induced complications, including bleeding and perforation (► Fig. 3). The patient's symptoms rapidly improved,

and CT revealed shrinkage of the dilated afferent loop (► Fig. 4). Stent migration did not occur before the patient died. This novel dumbbell-shaped FCSEMS may be helpful in EUS-GE for afferent loop syndrome with long interluminal distance.

Endoscopy_UCTN_Code_TTT_1AS_2AD



► **Fig. 2** Contrast-enhanced computed tomography revealed a dilated afferent loop (***) located away from the stomach (*). The endoscopic ultrasound image showed a distance of 20 mm between the two lumina (double-ended arrow).



► **Fig. 3** Endoscopic ultrasound-guided gastroenterostomy was performed using the novel dumbbell-shaped FCSEMS for afferent loop syndrome. **a** A 0.025-inch guidewire was advanced into the dilated afferent limb through a puncture needle. **b** The novel FCSEMS was deployed apposing the dilated afferent limb and the gastric walls. **c** A 7-Fr double-pigtail plastic stent was placed across the FCSEMS.



► **Fig. 4** Contrast-enhanced computed tomography showed shrinkage of the dilated afferent loop, and the endoscopic image revealed no stent migration.

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Endoscopy 2023; 55: E362–E363

DOI 10.1055/a-1997-9382

ISSN 0013-726X

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Georg Thieme Verlag KG, Rüdigerstraße 14, 70469 Stuttgart, Germany



Competing interests

The authors declare that they have no conflict of interest.

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