A 72-year-old woman presented with a 10-month history of epigastric discomfort. Esophagogastroduodenoscopy (EGD) detected two protruding lesions located at the greater curvature of the gastric fundus (Fig. 1). Endoscopic ultrasound showed two hypoechoic tumors arising from the muscularis propria layer (Fig. 2). Computed tomography (CT) scan revealed an extraluminal component of the large mass (Fig. 3).

In order to achieve a complete submucosal resection, endoscopic full-thickness resection (EFR) was first considered because of the extreme difficulty in creating submucosal tunneling for two lesions in the gastric fundus. On the basis of the large lesion with an extraluminal component, an innovative technique of combining EFR with natural orifice transluminal endoscopic surgery (NOTES) was taken into account. EFR was used to remove the small tumor as well as to create a transgastric orifice for the subsequent NOTES to resect the extraluminal tumor. Accordingly, the surgery was performed as follows (Video 1). A circumferential full-thickness resection was performed around the small tumor. When the endoscope passed through the EFR-produced perforation into the abdominal cavity, the extraluminal tumor was found. The Video 1 A combination of endoscopic full-thickness resection with natural orifice transluminal endoscopic surgery was created to remove two gastric gastrointestinal stromal tumors located in the gastric fundus.
tumor was then successfully dissected off using endoscopic submucosal dissec-
tion (ESD), whereby a submucosal injec-
tion was performed to preserve the in-
tegrity of the mucosal layer. Finally, the
gastric defect was sutured with endo-
clips. The two resected specimens, the
large one measuring 15×9 mm and the
small 10×8 mm, were both low-risk gas-
trointestinal stromal tumors (GISTs) on
histopathology.

In this case, a combination of EFR with
NOTES was created to prevent duplicate
full-thickness incisions for resection of
multiple gastric GISTs, which minimized
transgastric defects and reduced closure
difficulty so as to eliminate abdominal
trauma and its related complications.
We believe this new technique is applic-
able for resecting multiple submucosal
tumors, including but not limited to le-
sions located in the gastric fundus, espe-
cially for those with an extraluminal
component.

Competing interests

The authors declare that they have no con-

cflict of interest.

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