EDGE Procedure to allow EUS/FNB of an uncinate process pancreatic mass in a patient with gastric-bypass anatomy using a 20-mm lumen-apposing metal stent

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EUS is the standard for sampling pancreatic tumors. However, in a patient with gastric-bypass anatomy, pancreatic tumors at the head of the pancreas cannot be sampled by EUS in the traditional manner. EUS-directed transgastric ERCP (EDGE) is a procedure originally described to access the excluded stomach so as to perform ERCP in gastric-bypass anatomy.1 We report a modification of the EDGE procedure to sample and stage a pancreatic mass at the uncinate process in a patient with gastric-bypass anatomy.

A 57-year-old man with a history of gastric-bypass surgery presented with a 3-week history of upper-abdominal pain. Abdominal CT showed a pancreatic mass at the uncinate process without distant metastases (Fig. 1). The study was limited by an inability to inject intravenous contrast material because of chronic renal insufficiency. We discussed with the patient different methods to obtain a biopsy specimen, including CT-guided biopsy, surgical laparotomy, and endoscopic sampling (EUS-directed gastrostomy with EUS-guided fine-needle biopsy [FNB]). The patient elected to proceed with the endoscopic method (Video 1, available online at www.VideoGIE.org).

A linear echo endoscope was advanced to the gastric pouch. The excluded stomach was located. A 19-gauge
needle was advanced to the lumen of the excluded stomach. Contrast material was infused to fill and distend the excluded stomach (Fig. 2). A lumen-apposing metal stent (LAMS) with a 2-cm diameter and electrocautery tip was advanced to the excluded stomach under EUS guidance and was deployed, connecting the gastric pouch to the excluded stomach. The stent was then dilated by use of a controlled radial expansion balloon up to 2 cm (Fig. 3). After that, in the same session, the echoendoscope was advanced carefully through the stent lumen to the excluded stomach and all the way to the second part of the duodenum. A hypoechoic mass measuring 3 cm was seen at the uncinate process abutting the superior mesenteric artery and invading into the duodenal wall (Fig. 4). Biopsy of the mass was performed with a 25-gauge core needle. An onsite pathologist confirmed a diagnosis of adenocarcinoma. The echoendoscope was carefully withdrawn, leaving the LAMS in place. The patient tolerated the procedure well without adverse events and was referred to an oncologist. Our plan is to remove the LAMS after 4 weeks.

EUS-directed gastrostomy with EUS/FNB is a feasible and safe method to sample and stage a mass at the head of the pancreas in a patient with Roux-en-Y gastric bypass anatomy. This procedure was valuable in this patient, who could not have undergone imaging with intravenous contrast material because of chronic renal insufficiency. The alternative methods are CT-guided biopsy and surgical laparotomy with frozen section. CT-guided biopsy is technically challenging if a mass is at the uncinate process. In addition, it carries a theoretic risk of seeding the needle track with malignant cells. Surgical laparotomy is a more invasive method. In this case, with the tumor abutting the superior mesenteric artery, the surgical method would not have provided a cure. We elected to proceed with EUS/FNB immediately after deploying and dilating the LAMS to prevent delaying the diagnosis and treatment of the patient’s pancreatic malignancy. In order to minimize the risk of stent dislodgement, we used a 2-cm diameter LAMS. The echoendoscope was advanced slowly and carefully through the LAMS under fluoroscopic guidance.

In conclusion, EUS-directed gastrostomy with EUS/FNB is a feasible and safe technique for sampling and staging a pancreatic tumor at the head of the pancreas in gastric-bypass anatomy in the absence of known distal metastases.

**DISCLOSURE**

All authors disclosed no financial relationships relevant to this publication.

Abbreviations. EDGE, EUS-directed transgastric ERCP; FNB, fine-needle biopsy; LAMS, lumen-apposing metal stent.

**REFERENCE**

1. Vallabh H, Poushanchi B, Hsueh W, et al. EUS-directed transgastric ERCP (EDGE) with use of a 20-mm × 10-mm lumen-apposing metal stent in a patient with Roux-en-Y gastric bypass. VideoGIE 2018;2:262-3.