

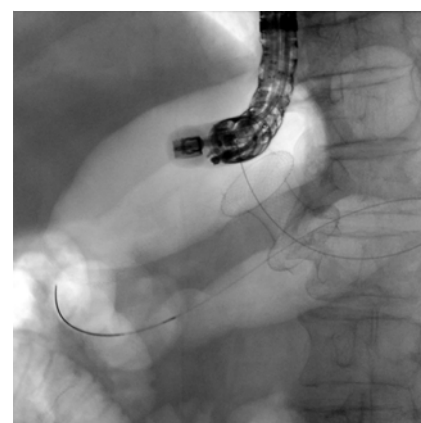
Endoscopic ultrasound-directed transgastric ERCP facilitating extensive ampullectomy in Roux-en-Y gastric bypass patient



► **Fig. 1** Computed tomography scan (left) showing a large ampullary mass (red arrow) that can be traced as a hypointense area on magnetic resonance cholangiopancreatography (right).



► **Video 1** Successful use of endoscopic ultrasound-guided gastrogastrostomy to secure ERCP access in gastric bypass anatomy. The extremely complex ampullectomy lasted more than 3 hours and required 2 advanced endoscopists.



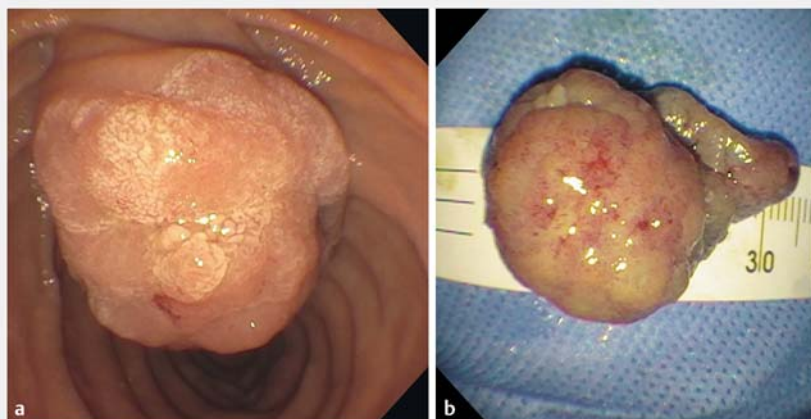
► **Fig. 2** Fluoroscopic image demonstrates successful apposition of the gastric pouch and the remnant by a lumen-apposing metal stent for the gastrogastrostomy.

A 71-year-old woman with a history of BRCA2+ ovarian cancer and Roux-en-Y gastric bypass was incidentally found to have transiently elevated cholestatic liver function tests. Magnetic resonance cholangiopancreatography (MRCP) demon-

strated intra- and extrahepatic dilatation to the level of the pancreatic head but no apparent stone or mass. A contrast-enhanced abdominal computed tomography (CT) scan identified a 26-mm ampullary neoplasm (► **Fig. 1**). When re-

viewed in retrospect, the lesion was present on her positron emission tomography (PET) scan 3 years ago with a mild increase in size.

BRCA2 mutation carriers are intrinsically at risk for malignancies, pancreatic among them [1]. Furthermore, ampullary lesions exceeding 15 mm carry a specificity of 80% for underlying malignancy [2]. Possible therapeutic strategies were reviewed considering various factors including altered anatomy. The Whipple procedure involved a risk for postoperative fistulae given her CT findings of fatty pancreas; she was also a poor surgical candidate. Percutaneous gastrostomy or laparoscopy-assisted endoscopic retrograde cholangiopancreatography (ERCP) would be technically challenging with ampullectomy intended. A multidisciplinary majority decision favored a complete endoscopic approach employing endoscopic ultrasound (EUS)-directed transgastric ERCP, typically a two-step technique including placement of a lumen-apposing metal stent (LAMS) reconnecting the stomach through temporary gastrogastrostomy with subsequent ERCP after tract maturation. If



► **Fig. 3** **a** Endoscopic view showing a 40-mm ampullary neoplasm with an adenomatous pattern. **b** A photo of the resected adenomatous tissue measuring 35 mm.



► **Fig. 4** Post-polypectomy defect closed in a zipper-like manner using hemostatic clips.



► **Fig. 5** Endoscopic view showing 2 plastic biliary stents and a prophylactic pancreatic stent placed to secure adequate drainage after ampullectomy completion.

waiting is not an option, the procedure can be also done in a single session [3]. The technique carries a risk of weight gain by essentially reversing the bypass. However, supporting evidence is lacking, and any weight gain before fistula closure would likely be outweighed by the benefit of the procedure [4–5].

EUS-guided gastrogastronomy was performed uneventfully (► **Fig. 2**) (► **Video 1**). After tract maturation, ERCP was performed with a near-complete resection of a 40-mm ampullary mass using hot snare polypectomy (► **Fig. 3**, ► **Fig. 4**). A small residuum remained and was removed in 4 weeks (► **Fig. 5**). Histopathology showed ampullary adenoma nega-

tive for high grade dysplasia or invasion, and the patient was scheduled for endoscopic follow-up with LAMS extraction and fistula closure in 2 months.

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Competing interests

M. L. Freeman is a consultant for Boston Scientific. The other authors declare they have no conflict of interest.

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