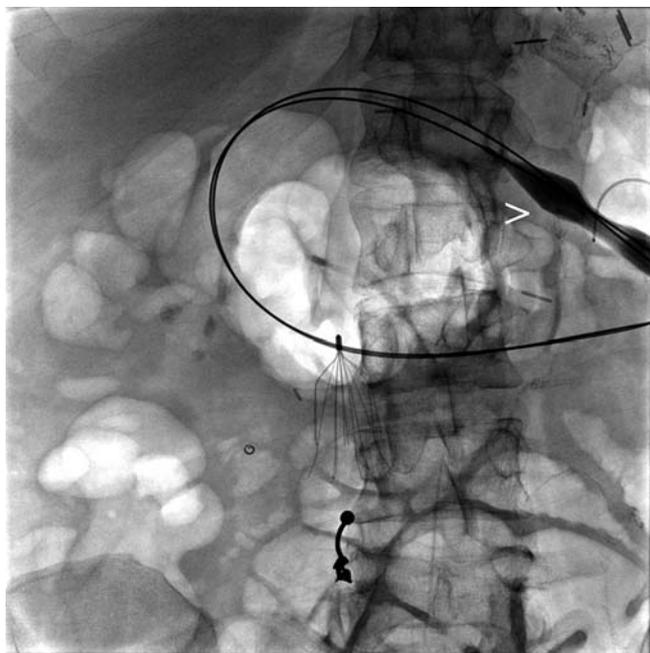


## Through-the-skin ERCP and endoscopic ultrasound-guided cystogastrostomy in a patient with a Roux-en-Y gastric bypass



**Fig. 1** Computed tomography (CT) scan in a 40-year-old woman with a history of Roux-en-Y gastric bypass showing a fluid collection (white asterisk) adjacent to the excluded stomach which contains the intragastric G-tube balloon (white arrowhead).



**Fig. 2** Fluoroscopic image showing the esophageal dilating balloon (white arrowhead) positioned in the percutaneous tract to the excluded stomach.

A 40-year-old woman with a history of Roux-en-Y gastric bypass (RYGB) 10 years previously was transferred to our institution with acute pancreatitis complicated by acute pancreatic fluid collections (APFCs). The patient complained of severe epigastric abdominal pain and tenderness. Her amylase and lipase, which had peaked at around 5000 U/L several days before, were noted to be 116 IU/L (normal 30–100) and 305 U/L (normal 5–50), respectively. Her remaining laboratory re-

sults were unremarkable. Computed tomography (CT) and subsequent magnetic resonance imaging (MRI) scans revealed extensive pancreatic stranding and multiple APFCs, including an 8-cm collection that was compressing the duodenum and resulting in distension of the excluded stomach.

Because her symptoms were unremitting and she had outlet obstruction of the gastric remnant, a 22-Fr gastrostomy tube (G-tube) was placed into the excluded

stomach under CT guidance to relieve the partial gastric outlet obstruction and allow access to the duodenum for future endoscopic intervention.

She remained symptomatic and a CT scan 6 weeks later confirmed the persistence of a large pseudocyst adjacent to the excluded stomach (▶ Fig. 1). After the patient had given informed consent, the G-tube tract was dilated under visual and fluoroscopic guidance to 48 Fr using a standard esophageal dilating balloon (▶ Fig. 2). Once a duodenoscope had been advanced through the tract, pancreatography revealed focal pancreatic duct disruption in the pancreatic head and a stricture in the pancreatic body with upstream dilatation. A 7-Fr, 12-cm pancreatic stent was placed across the disrupted area and the stricture.

The duodenoscope was replaced with a therapeutic linear-array echoendoscope. The cyst was punctured under endoscopic ultrasound (EUS) guidance with a 19-gauge needle. A 0.035-inch guidewire was then coiled within the cyst cavity. The needle tract was dilated with 5, 7, and 10-Fr graduated dilators and then with a 6-mm dilating balloon. A 10-mm fully covered metal stent was placed through this tract across the stomach wall into the lumen of the cyst and a copious amount of fluid was drained. Once the endoscopic procedure had been completed, a 30-Fr G-tube was placed in the tract to allow future endoscopic access to the excluded stomach.

On review 3 weeks later, the patient's abdominal pain had resolved and a CT scan showed complete resolution of the fluid collection during this time. A repeat pancreatogram through the percutaneous tract revealed resolution of the leak and the stricture. The pancreatic and transgastric stents were removed. The G-tube was left in place for an additional 6 weeks in case of pseudocyst recurrence.

Endoscopic retrograde cholangiopancreatography (ERCP) in patients who have undergone RYGB is challenging, but can be performed using enteroscopy-assisted or through-the-skin approaches [1]. Percutaneous access to the excluded stomach, either at the time of laparoscopy or through a mature G-tube tract, allows more reliable identification and cannulation of the papilla and higher therapeutic success rates compared with an enteroscopy-assisted approach [2]. Similarly, percutaneous access to the excluded stomach is necessary for transluminal endoscopic drainage of pancreatic fluid collections

that are not accessible from the gastric pouch.

In this report, we present a case in which a pancreatic pseudocyst in a patient who had undergone previous RYGB was successfully managed by through-the-skin ERCP and EUS-guided cystogastrostomy. Once access to the excluded stomach had been achieved, we used techniques identical to those employed in patients with non-surgically altered anatomy. Use of a percutaneous approach to achieve pseudocyst drainage has been previously reported [3]; however, our case represents the first report to our knowledge of EUS-guided percutaneous pseudocyst drainage. This therapeutic approach should be considered as a novel option for managing pancreatic fluid collections in patients who have undergone RYGB.

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**Competing interests:** None

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