ERCP Using Spiral Enteroscopy in Patients with Altered Gastrointestinal Anatomy

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Abstract

Purpose: Endoscopic methods for accessing the biliary and pancreatic ducts in patients with surgically altered anatomy can be difficult. Spiral enteroscopy (SE) is a new technique that allows for visualization of the small bowel by using a rotating overtube to pleat small bowel on the enteroscope to advance through the lumen. This is the first reported case series using SE to access the biliary and pancreatic ducts in patients with surgically altered anatomy to perform diagnostic and therapeutic ERCP.

Case Vignettes: A total of five cases were performed with SE-assisted ERCP. Patient demographics, procedural indications, findings and therapeutic interventions are listed in Table 1. All procedures were performed using an Olympus SIF-Q180 enteroscope and a Discovery Small Bowel (DSB) overtube, which were inserted through the mouth and advanced across the stomach into the small bowel, with careful attention to prevent gastric loop formation. The enteroscope was advanced to site of the native papilla or surgical anastomosis. A custom length 320 cm sphincterotome was used for cannulation of the native papilla in patients with Roux-en-Y anatomy. A wire-guided CRE balloon and hydrophilic guidewire was used to cannulate surgical pancreatic and biliary anastomses (Fig 1).

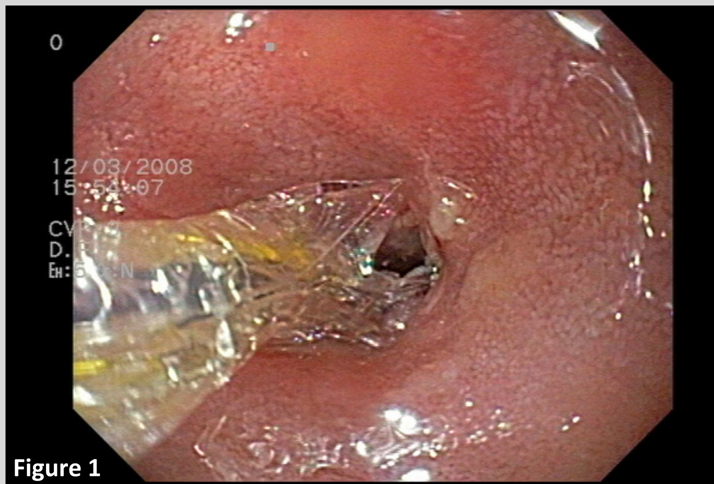

Figure 1

Discussion: Patients with surgically-altered upper GI tract anatomy pose a challenge to endoscopic biliary interventions. Endoscopic treatments are preferable because they are less invasive than either transhepatic or surgical options. More patients are undergoing Roux-en-Y gastric bypass and the need for biliary and pancreatic interventions in these patients will likewise increase. Our case series is the first report of using spiral enteroscopy for accessing the native papilla or the desired surgical pancreatic or biliary anastomosis to perform diagnostic and therapeutic ERCP in patients with altered upper GI tract anatomy. In our small case series, the success rate was 80%. Additionally, SE-assisted ERCP appears to be easier to perform compared to other methods previously described and allows for stable positioning of the enteroscope to perform delicate therapeutic maneuvers. Spiral enteroscopy-assisted ERCP should be considered in patients with altered anatomy in whom the pancreatic and biliary ducts are beyond the reach of a standard side-viewing duodenoscope.

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Table 1: Patient Characteristics, Findings, and Therapeutic Interventions

Patient	Age	Sex	Indication	Surgical Anatomy	Sedation	Papilla/ Anastomoses Identified?	Findings	Intervention
1	61	F	CBD stone seen with MRCP	Roux-en-Y gastric bypass	MAC	Y	Biliary stones/sludge	Balloon sphincteroplasty and sludge extraction
2	35	F	Type I SOD	Roux-en-Y gastric bypass	General	Y	Dilated CBD suggestive of SOD	Biliary sphincterotomy
3	72	M	Recurrent Cholangitis	Pancreatico-duodenectomy	CS	Y	CBD stone	Stone extraction and biliary stent placement
4	58	F	Suspected Pancreatic Leak	Roux-en-Y gastric bypass	General	N	N/A	Failed ERCP attempt
5	63	F	Recurrent pancreatitis after Whipple procedure	Pancreatico-duodenectomy	General	Y	Anastomotic pancreatic duct stricture	Balloon sphincteroplasty and placement of 2 winged 7 Fr pancreatic stents

Abbreviations: CBD - Common Bile Duct; SOD - Sphincter of Oddi Dysfunction;
MAC - Monitored Anesthesia Care; CS - Conscious Sedation

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