

A Novel Spiral Over-tube for Evaluating the Pancreaticobiliary Limb and Defunctionalized Stomach in Roux-en-Y Gastric Bypass Patients

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Abstract

Introduction: Endoscopic evaluation of the pancreaticobiliary limb and defunctionalized stomach is notoriously difficult in patients who have undergone Roux-en-Y gastric bypass (RYGB). Reasons include: (1) the acute angulation of the jejuno-jejunal (JJ) anastomosis, and (2) the considerable length of the Roux limb. A novel over-tube with outer ridges oriented in spiral fashion allows for pleating and un-pleating of the small bowel with over-tube rotation.

Aims & Methods: To assess the safety and technical feasibility of using the spiral over-tube to assess the afferent limb and defunctionalized stomach in RYGB patients. Observational case series of 5 RYGB patients requiring more extensive endoscopic evaluation of the upper gastrointestinal tract not provided by routine enteroscopy. The novel over-tube [Spirus Medical, Inc., Stoughton, MA] has outer ridges in spiral configuration allowing for pleating of the small bowel with over-tube rotation. Under general anesthesia, the spiral over-tube was inserted per-orally in conjunction with an endoscope. Procedure time was calculated from the per-oral introduction of the over-tube to entering the defunctionalized stomach. Endoscopic findings were documented and complications noted.

Results: The mean patient age was 42 [38-51], and 4/5 (80%) were female. 4/5 patients (80%) had undergone laparoscopic RYGB while 1/5 (20%) had undergone open RYGB. 5/5 (100%) had Roux limbs >100 cm in length. Indications for the procedure was chronic abdominal pain in 3/5 (60%), evaluation of the biliary tract in 1/5 (20%), and iron-deficiency anemia in 1/5 (20%). The spiral over-tube was able to traverse the JJ anastomosis, advance into the afferent limb, and reach the defunctionalized stomach in 5/5 cases (100%). The papilla was seen in 5/5 patients (100%). In 1/5 patients (20%), ERCP was performed due to abnormal LFTs and biliary sludge was discovered upon balloon sweep. However, in this particular case, the over-tube handle was cut off to accommodate the length of a pediatric duodenoscope. 3/5 patients (40%) had only atrophic gastritis with negative biopsies. 1/5 (20%) patients had small jejuno-jejunal ulcerations. The mean procedure time was 31 minutes [24,48]. Time improved with operator experience. Upon over-tube withdrawal, no mucosal erythema was seen. No immediate complications were noted.

Conclusion: The novel spiral over-tube facilitates access to the upper gastrointestinal tract of RYGB patients. This case series suggests that the device is safe and has the potential to allow therapeutic interventions, such as ERCP.