

Overtube Assisted Enteroscopy Using the Spiral Tip Overtube (OAE-Spiral): Single Group Experience in Patients with Normal and Altered Anatomy

Shailender Singh, Jayaprakash Sreenarasimhaiah, Shou-jiang Tang, Luis F. Lara

Small Bowel Endoscopy Group, Department of Internal Medicine, Division of Digestive and Liver Diseases, The University of Texas Southwestern Medical Center, Dallas, TX

Abstract

Introduction: The endoscopic investigation and application of therapies for small bowel disorders is now possible with the introduction of overtube assisted enteroscopy using double balloon, single balloon, and spiral tip overtubes. The double balloon device may allow for deep bowel intubation, but requires two operators. The single balloon device is simpler but may not reach as deep. The spiral tip overtube, which uses a rotating overtube, is the most recent to be introduced. We report our initial experience with it.

Aims and Methods: The small bowel endoscopy database was searched for overtube assisted enteroscopy (OAE) using the spiral tip overtube (spiral) from January 2007. The OAE-spiral was performed using an Olympus 200cm, 9.2 mm enteroscope preloaded with the 48F Discovery SB[®] overtube (Spirus Medical[™], Stoughton, MA) which is 118cm long with a 21cm long spiral in the distal end which is 5mm tall. The small bowel is pleated using clockwise rotation of the overtube, with occasional counter-clockwise rotations and reductions which advances the tip of the endoscope through the small bowel. Maximal depth of insertion is estimated by adding all endoscope advancements, and subtracting the amount of scope that is pulled back during reductions.

Results: Twenty-one patients (8 males, 12 females) underwent OAE-spiral at our institution. Mean age was 55yrs (SD ± 17yrs). Indications included iron deficiency anemia (n = 9), obscure overt gastrointestinal bleeding (n = 2), unexplained abdominal pain (n = 7), ERCP after gastric Roux-en-Y bypass (n = 2) and fistula plug placement for entero-cutaneous fistula (n = 1). Mean total procedure time was 51 minutes (SD ± 21 minutes). Sedation was achieved with propofol; one patient required general anesthesia. 14 patients had normal small bowel anatomy and 7 patients had Roux-en-Y anatomy. In patients with normal small bowel anatomy, the proximal to mid-ileum was reached in 93% of patients (n = 13). Of these 13 patients, 2 had small bowel angioectasia and endotherapy with APC was performed; 1 patient had yellowish nodules (lymphangioma). OAE-spiral reached the ileal fistula and a fistula plug was placed with short-term control of cutaneous drainage. In the 7 patients with Roux-en-Y anatomy, an enteral anastomotic stricture was seen in 2 patients which were successfully treated with endoscopic balloon dilation. Both had an orthotic liver transplant (OLT) and one had previous single balloon endoscopy failure. The ampulla was not reached for ERC in one patient with Roux-en-Y anatomy. ERC was successful with the OAE-spiral in the second patient. Complications included mild to moderate mucosal trauma (upper esophageal sphincter and pylorus), small bowel hematomas, and a jejunal perforation in one patient.

Conclusion: OAE-spiral allows deep small bowel access in a reasonable amount of time and therapy that was previously only available by intra-operative enteroscopy or laparotomy. It also was successful after failure of the single balloon overtube. Rigorous studies to determine how it compares to single or double balloon enteroscopy are needed.