

# Over-tube Assisted Enteroscopy Using the Spiral Tip Over-tube (OAE-Spiral): Single Center Experience in Patients with Normal and Altered Anatomy

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## Abstract

**Purpose:** Therapeutic small bowel endoscopy is now possible with the introduction of over-tube assisted enteroscopy. The double balloon device requires two operators; the single balloon system is a simpler variation. The spiral tip over-tube is the most recent to be introduced with its unique method. We report our initial experience.

**Methods:** The endoscopy database was searched from 01/2008 to 04/2009 for over-tube assisted enteroscopy (OAE) using the spiral tip over-tube (spiral). This was performed using an Olympus SIF Q180 enteroscope preloaded with the 48Fr, 118cm long Discovery SB over-tube with a 21 cm long 5 mm tall spiral at the tip (Spirus Medical, Stoughton, MA). The small bowel is pleated using clockwise rotation of the over-tube, with reductions that advance the endoscope through the small bowel. Maximal insertion depth is estimated by adding endoscope advancements, and subtracting scope length that is withdrawn during reductions.

**Results:** Thirty-nine patients (18M, 21F) underwent OAE-spiral. Mean age was 55 yrs (SD  $\pm$  18 yrs). Indications were iron deficiency anemia (n = 14), obscure overt gastrointestinal bleeding (n = 6), unexplained abdominal pain (n = 11), ERCP after gastric Roux-en-Y bypass (n =2) and fistula plug placement for entero-cutaneous fistula (n =1), diarrhea (n = 2), suspicious lesion on capsule endoscopy (n = 2), small bowel polypectomy in Gardner's syndrome (n = 1). Mean total procedure time was 50 minutes (SD  $\pm$  22 minutes). Sedation was achieved with propofol in 26 and general anesthesia in 13 patients. 7 of the 39 patients had Roux-en-Y anatomy. The proximal to mid-ileum was reached in 75% of patients (n = 24) with normal anatomy. Significant findings included: 3 patients with small bowel angioectasia and were treated with APC; 1 patient with lymphangioma; multiple jejunal diverticulosis in 1 patient with overt bleeding. Deep small bowel biopsies established the diagnosis of celiac disease in 1 patient. OAE-spiral reached the ileal fistula and a plug was placed with short-term control of drainage. An enteral anastomotic stricture was seen in 3 patients and successfully treated with balloon dilation. Jejunal polyps (adenoma) were removed in the patient with Gardner syndrome. ERCP was successful in 1 patient with Roux-en-Y in which single balloon enteroscopy failed previously. Complications included mild to moderate mucosal trauma, hematomas, and a jejunal perforation in one patient.

**Conclusion:** OAE-spiral offers deep small bowel access in a reasonable amount of time with therapeutic opportunities. It also was successful after failure of the single balloon over-tube. Rigorous studies to determine its efficacy in comparison to single or double balloon enteroscopy are needed.