

A Pilot Study of Spiral Enteroscopy Using a New Design 48F Discovery SB Over-tube and the Olympus 200 cm x 9.2mm Enteroscope

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Abstract

Introduction: Intraoperative enteroscopy, double balloon enteroscopy (DBE) and single balloon enteroscopy (SBE) all use small bowel pleating techniques to visualize lengths of small bowel greater than the length of the enteroscope. Our prior studies have shown proof of concept for pleating small bowel using a spiral over-tube on a pediatric colonoscope. Here we present our results using the newly designed Discovery SB over-tube with the Olympus 200 cm, 9.2mm enteroscope (Oly ENT). The new Discovery SB has a smaller diameter (48F) and improved spiral and shaft characteristics. The Oly ENT has a longer length to improve insertion depths.

Aims and Methods: This is a pilot study presenting initial results of the newly designed Discovery SB with the Oly ENT. The Discovery SB over-tube is 48F outer diameter, 118cm long with a 5mm raised spiral at the distal end. The Olympus enteroscope (GIF) is 200cm long, 9.2mm diameter with a 2.8mm working channel. 25 consecutive patients with obscure bleeding were enrolled. MAC sedation with Propofol, Versed and Fentanyl was used. All patients were outpatients. Advancement through the small bowel was accomplished with spiral pleating, push advancement or combination technique. Withdrawal was accomplished with counter-clockwise rotation.

Results: 15 males and 10 females were enrolled. Average age was 45 years (25-68). Average height 166cm and average weight 69kg. Average total procedure time was 26.1 min. Average time to maximal depth of insertion was 16.2 min. Average estimated insertion depth past the Ligament of Treitz was 256cm (range 50-400cm) Findings were 7 AVM's, 1 tumor, 1 strongyloides. Complications were 7 sore throats that all resolved in 72 hours and one intussusception recognized and reduced during procedure. Mild mucosal trauma was seen in 5 patients and moderate mucosa trauma in 2 patients. All patients were discharged the same day of procedure. Average anesthesia use was 70 mg Propofol, 4.1 mg midazolam, and 81 mcg fentanyl. On a visual analog scale, ease of rotation was good to excellent on all patients and controlled withdrawal was very good to excellent.

Conclusion: The newly developed 48F Discovery SB over-tube with the Olympus 200 cm 9.2mm enteroscope is rapid and safe for spiral advancement through the small bowel. Depth of insertion into the small bowel compares favorably with published single balloon enteroscopy data and procedure times are superior. Controlled withdrawal was achieved in all pts. Overall, the Discovery SB/Olympus ENT combination may offer advantages compared to single balloon enteroscopy. Future studies are needed.