

A Pilot Study of Spiral Enteroscopy Using a New Design 48F Discovery[®] SB Over-tube and the Fujinon 200cm x 9.4mm 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 48F Discovery SB over-tube with the Fujinon 200 cm, 9.4mm enteroscope (Fuji ENT). The new Discovery SB has a smaller diameter (48F) and improved spiral and shaft characteristics. The Fuji ENT has increased endoscope length for deeper small bowel insertion.

Aims & Methods: This is a small bowel enteroscopy pilot study using the newly designed Discovery SB with the Fuji ENT. The Discovery SB over-tube is 48F outer diameter, 118cm long with a 5mm raised spiral at the distal end. The Fujinon enteroscope (EN-450TS) is 200cm long, 9.4mm diameter with a 2.8mm working channel. 50 consecutive patients with obscure bleeding were enrolled. The distal balloon on the Fuji ENT was not used. MAC sedation was performed with Propofol, Versed and Fentanyl. 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: 24 males and 26 females were enrolled. Ave. age was 46 years (19-78). Average height 164cm and average weight 72kg. Average total procedure time was 29 minutes. Average time to maximal depth of insertion was 18.7 minutes. Average estimated insertion depth past the Ligament of Treitz was 243cm (range 50-380cm). Findings were 8 AVM's, 1 tumor, 2 stronglyloides. Complications were 8 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 1 patient. All patients were discharged the same day of procedure. Average anesthesia use was 75 mg propofol, 4.3 mg midazolam, and 84 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 Fujinon 200 cm enteroscope is rapid and safe for advancement through the small bowel. Depth of insertion into the small bowel compares favorably with published DBE data and procedure times are superior. Controlled withdrawal was achieved in all patients. Overall, the Discovery SB/Fuji ENT combination may offer advantages compared to Double Balloon Enteroscopy. Future comparative studies are needed.