

Spiral Enteroscopy: Prospective Multicenter U.S. Trial in Patients with Small Bowel Disorders

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Abstract

Introduction: Deep enteroscopy (DBE, SBE) has revolutionized management of patients with mid-small bowel disorders. Spiral enteroscopy (SE) is a novel approach coupling a standard balloon enteroscope with a spiral overtube. Aims of the present study were to determine the performance, yield and safety of SE in patients with suspected or established small bowel pathology.

Aims and Methods: Prospective, multicenter study with centralized standard database. Patients referred for antegrade enteroscopy were eligible. Patients with a history of esophageal stricture, advanced cirrhosis, or coagulopathy were excluded. The depth of insertion was measured using a standard algorithm. The mean adjusted diagnostic procedure time was calculated for all procedures: total time minus therapy time.

Results: 148 patients were enrolled at 10 centers in the U.S. with a median age of 68 (42% male). Co-morbid conditions were common: CAD 37.4%, CHF 12%, COPD 16%, and prior abdominal/pelvic surgery 55%. Chronic medication use: ASA 27%, clopidogrel 12%, warfarin 6.3%. Obscure GI bleeding (72%) was the most common indication, of which 32% were overt and 62% had been transfused within 6 months. Prior diagnostic evaluations: CE 84% (66% abnormal), EGD 84%, colonoscopy 91%, push enteroscopy 29%, DBE/SBE 12.5%. Spiral enteroscopy beyond the LOT was successful in 96% of procedures. The mean MAC doses: propofol 326mg (median 200mg), fentanyl 68mcg, midazolam 3.1mg. The median depth of insertion beyond the LOT was 250cm (range 80-600cm), with estimated SB segment depths: jejunum (proximal 6%, middle 12.3%, distal 28.8%) and ileum (proximal 44%, middle 6.2%). The terminal ileum was visualized in 1 subject.

The mean total procedure time was 45.0 minutes for all procedures, and 35.4 minutes for diagnostic procedures. The adjusted diagnostic procedure time for all procedures was 34.4 minutes. Fluoroscopy was limited (13%). The diagnostic yield was 65%, of which 48% had more than one abnormality. 62.3% of findings were localized beyond the proximal jejunum (35% mid-jejunum, 20% distal jejunum, 7.3% ileum). The most common findings: angioectasias (61.5%), inflammation (7.5%), neoplasia (6.8%). APC ablation accounted for 64% of interventions. The most common adverse events at 24 hours were: sore throat (28.3%), swallowing discomfort (24%), and abdominal bloating/discomfort (19%). There were no serious adverse events (perforation, pancreatitis, ileus, death).

Conclusion: Spiral enteroscopy appears to be safe and effective for evaluation of the small bowel. The procedure duration (35, 45 minutes) and depth of insertion (250cm) compare favorably with other deep enteroscopy techniques (DBE, SBE).