

Deep Enteroscopy with a Conventional Colonoscope: Initial Multicenter Study Using the NaviAid™ AB Balloon System*

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Purpose: Capsule endoscopy has revolutionized evaluation of the small bowel. Deep enteroscopy with single or double balloon techniques allows for diagnostic and therapeutic intervention.^{1,2} Deep enteroscopy can be time consuming, but also requires special scopes and accessories to fit down the working channel.³ The NaviAid™ system enables the endoscopist to perform deep enteroscopy with the conventional colonoscope and use standard accessories.

Methods: We performed a nine center retrospective study using the NaviAid AB balloon system for small bowel evaluation. The NaviAid™ AB device (SMART Medical Systems Ltd., Ra'anana, Israel) is an on-demand balloon catheter that is inserted through the instrument channel of a standard colonoscope and enables it to advance deep into the small bowel in either antegrade or retrograde approach. It consists of a balloon inflation/deflation system and a single-use balloon catheter, designed for anchoring in the small bowel. The balloon is inflated to anchor in the intestine and a repetitive push-pull technique is performed, with the endoscope sliding over the guiding catheter to the balloon inflated in the distal small bowel. The catheter may be removed to allow for therapeutic intervention while maintaining scope position. The balloon catheter can then be reinserted for further advancement.

Results: A total of 98 patients were included; 52% were male, mean age 55 years old (range 15-94). Indications included abdominal pain, anemia, occult gastrointestinal bleed, diarrhea, abnormal capsule endoscopy, weight loss, protein losing enteropathy, retained foreign body, altered anatomy ERCP, and small bowel strictures. Antegrade enteroscopy was performed in 65 patients. The average depth of insertion (DOI) was 156cm (range 50cm-350cm) beyond the LOT. The average procedural time for the antegrade enteroscopy cases was 15.5min. Retrograde enteroscopy was performed in 33 cases. The average DOI was 89 cm (range 20cm-150cm) beyond the ileocecal valve. Overall, diagnostic yield was 45%. There were no procedural complications reported in the 98 cases.

Conclusion: The NaviAid AB advancing balloon is a safe and effective way to perform deep enteroscopy using a conventional colonoscope without the need of an overtube. Procedure time is shorter than other forms of deep enteroscopy. Diagnostic yield and depth of insertion are on par with other forms of deep enteroscopy. This is the largest reported study using this novel technology to diagnose and treat small bowel disease.



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