

# Taming Tortuous Colons: The Use of Spiral Colonoscopy for Incomplete Colonoscopy

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## Abstract

**Purpose:** Failure rates of cecal intubation with conventional colonoscopy ranges from 3-10%. Many failures occur in patients with long, redundant colons. Techniques, including double balloon colonoscopy, have been utilized to achieve complete colonoscopy with varying success. The Spirus Endo-Ease® is a threaded, flexible over-tube that is rotated over a pediatric colonoscope to facilitate deep colonic or ileal intubation. We examined the utility of using “spiral colonoscopy” to complete failed colonoscopies.

**Methods:** All patients between January and December 2008 who underwent salvage spiral colonoscopy for a previously failed colonoscopy due to a long, redundant colon were reviewed. Complete colonoscopy was defined as the ability to pass the colonoscope into the cecal cap or the terminal ileum and complete all routine instrumentation. Spiral colonoscopy is performed by passing a pediatric colonoscope (max. O.D. 11.6 mm) through either a 50 or 70 cm threaded over-tube. Once through the descending colon, the over-tube is rotated and advanced to pleat and splint the colon over the colonoscope to avoid looping.

**Results:** Eight men ( $\mu$  age = 68) and 4 women ( $\mu$  age = 65) with unsuccessful standard colonoscopies due to tortuous, redundant colons met criteria for review using the Spirus system. Most patients underwent complete colonoscopy with the Spirus system (11/12; 92%), without complications. Six patients (50%) had either biopsies or polypectomy performed in the proximal colon that had not been previously reached. One patient with cecal intubation with spiral colonoscopy was unable to have a complete polypectomy, which was performed successfully via double balloon colonoscopy, resulting in a therapeutic success rate of (5/6; 83%). One patient who underwent spiral colonoscopy achieved cecal intubation only after removing the colonoscope and passing a 200 cm enteroscope through the over-tube once it was in a fixed position. This patient ultimately had 3 large cecal polyps removed via a re-inserted colonoscope. Significant pathology was identified in 7 patients (7/12; 58%); with adenomatous polyps in 5 patients, a cecal cancer in 1 patient, and chronic inflammatory strictures in 1 patient. Spiral colonoscopy was performed under conscious sedation in all but 2 cases. Mean time to cecum was 17.1 minutes ( $\sigma$  = 9.0 minutes). Mean medication use was midazolam 8 mg and fentanyl 180  $\mu$ g.

**Conclusion:** Spiral colonoscopy with the Spirus Endo-Ease® is an effective and safe technique to complete colonoscopy in individuals who have failed standard attempts. The procedure can be performed in a reasonable time under conscious sedation with endoscopes already found in most endoscopy suites.