

The Utility of Magnetic Endoscopic Imaging in a Patient with Redundant Colon

A Case Report by Dr. Seth A. Gross

Case Report

A 48-year-old white male presented with a complaint of abdominal pain. He had no significant past medical history and denied ever having surgery. When an initial abdominal CAT scan returned negative findings, he was scheduled for a colonoscopy to better evaluate the source of his abdominal pain and to rule out any mucosal abnormalities.

Procedure

After conscious sedation, the patient was placed in the left lateral decubitus position to start the procedure. A pediatric colonoscope (Olympus PCF-H180AL) was inserted into the rectum and advanced to the level of the splenic flexure with minimal difficulty. At this point, the colonoscope began to loop, halting forward progress. The nurse then applied pressure to the abdomen, and this allowed the scope to reach the hepatic flexure. From this point forward, significant looping continued to occur; it proved difficult to obtain enough information from feel alone to identify and manage the types of loop formations that were developing, and the scope was unable to reach the cecum.

The patient was moved into a supine position and abdominal pressure was applied, but again the colonoscope could not be further advanced. The colonoscope was then removed and reinserted, but looping continued to occur at the hepatic flexure/distal ascending colon despite the application of abdominal pressure and adjustments to the instrument's variable stiffness.

After exhausting efforts to reach the cecum using the pediatric colonoscope, it was removed to attempt a visually guided colonoscopy using a ScopeGuide®-compatible colonoscope. ScopeGuide uses magnetic endoscopic imaging (MEI) technology and is the only MEI product currently available in the U.S. market. It allows real-time, three-dimensional visualization of the scope while it is inside the body. Because of the looping tendency of this patient's colon, the ability to see the type and location of loop formations as they occurred would be helpful in making the technical adjustments needed to successfully reach this patient's cecum.

A receiver dish—which picks up the pulsed, low-intensity magnetic field transmitted from the electromagnetic coils incorporated along the length of the insertion tube of the ScopeGuide-enabled colonoscope—was

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positioned by the procedure table and the patient was repositioned to the left lateral decubitus position. The colonoscope (Olympus CF-H180DL) was inserted into the rectum and advanced to the distal ascending colon. Once again, looping started to occur. Visual inspection of the scope's shape as displayed on the procedural monitor indicated an "N" loop formation, which was limiting scope advancement. (See Figure 1.) A clockwise torque to the colonoscope successfully reduced the loop to the shape analogous to a question mark. (See Figure 2.) With the aid of an externally applied handheld location tracker (Olympus ScopeGuide Hand Coil), the scope's tip was identified in relation to the patient's abdomen. This allowed the nurse to apply targeted abdominal pressure so that the colonoscope could advance successfully to the cecum and allow a complete exam.

Discussion

ScopeGuide can assist with endoscopic technique when dealing with long, difficult or redundant colons by allowing real-time visualization of the colonoscope as it moves through the body. This can help the endoscopist minimize looping to better advance the colonoscope to the cecum. In this patient procedure, using ScopeGuide helped achieve cecal intubation, even in a redundant colon. In other procedures, there have been various benefits of using ScopeGuide-enabled colonoscopes, including improved patient comfort, decreased procedure times, and the allowance for unsedated colonoscopy exams.

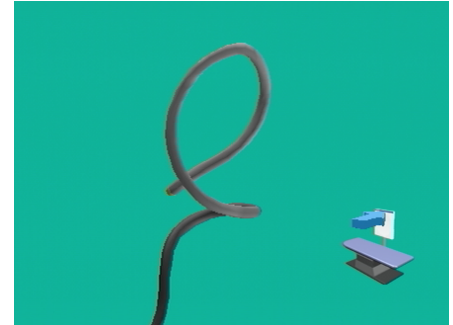


FIGURE 1

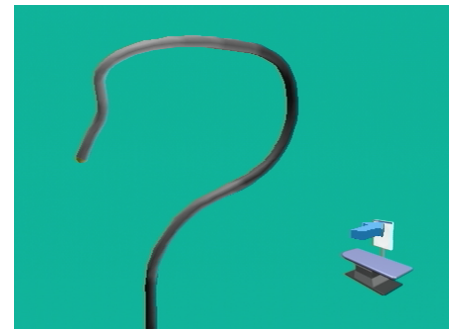


FIGURE 2



Seth A. Gross, MD

Dr. Gross is the director of advanced endoscopy at Norwalk Hospital in Connecticut, which is affiliated with Yale University School of Medicine. Since joining the hospital in 2008, Dr. Gross has implemented new programs offering patients the latest digestive disease services, including being the first provider in the state to use cryotherapy to treat patients with Barrett's esophagus or esophageal cancer. Dr. Gross completed his gastroenterology fellowship at the Mayo Clinic in Jacksonville, Florida. His areas of interest include colon cancer, gastrointestinal malignancies, endoscopic ultrasound, balloon-assisted enteroscopy, gastroesophageal reflux disease, Barrett's esophagus, and ablation.

Dr. Gross is a paid consultant to Olympus America Inc., Medical Systems Group (Olympus). Olympus did not draft, edit, or provide any substantive input on this Case Report.