

Study finds that competency in colonoscopy requires experience with 150 cases or more

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Researchers from Korea have found that technically efficient screening and diagnostic colonoscopy generally requires experience with 150 cases or more. The study appears in the April issue of *Gastrointestinal Endoscopy*, the monthly peer-reviewed scientific journal of the American Society for Gastrointestinal Endoscopy (ASGE).

Colonoscopy is a fiberoptic (endoscopic) procedure in which a thin, flexible, lighted viewing tube (a colonoscope) is threaded up through the rectum for the purpose of inspecting the entire colon and rectum, and is considered the gold standard in colorectal cancer screening and therapy. Properly trained endoscopists can accurately and safely examine the entire colon in a manner well-tolerated by patients. Expertly trained endoscopists can identify clinically important colorectal lesions, obtain tissue samples and perform various therapeutic procedures without complication.

Colonoscopy is a complex technical procedure that requires training and experience to maximize accuracy and safety. Colonoscopy training programs recommend trainees conduct at least 100 to 200 procedures to be considered technically competent. ASGE guidelines recommend a required number of 140 procedures. Most studies, however, have only used cecal intubation rate, or the visualization of the cecum (the cul-de-sac lying below the terminal ileum forming the first part of the large intestine or colon) by notation of landmarks as a measure of actual competence and have been limited to a single center experience.

“Our objective was to identify other possible measures of competence, such as cecal intubation time and the polyp detection rate, as well as the cecal intubation rate,” said study lead author Dong Soo Han, MD, Hanyang University Guri Hospital, Korea. “We found that based on these measures, a trainee’s colonoscopy success rate depends on the number of colonoscopies completed. A trainee’s success rate improved significantly after performing 150 procedures.

Patients and Methods

A prospective study was conducted at 15 tertiary care academic medical centers over eight months from June 2006 to January 2007. The study included 4,351 colonoscopies. There were 2,500 male patients and 1,851 female patients with a mean age of 51 years. A total of 24 first-year gastrointestinal (GI) fellows (trainees) participated in the study. The starting level of training was based on the observation of colonoscopies performed by seniors (at least 50 cases); training included an understanding of indications, performance of procedures, patient monitoring, use of sedatives and analgesics, interpretation of findings and avoidance of complications.

Colonoscopies were carried out by using the “single-handed” technique, unaided by radiographic screening or a variable-stiffening colonoscope. The instructor allowed trainees 30 minutes to reach the cecum, if the procedure was being performed safely and the patient was comfortable. Cecal intubation was documented by photographing the identified cecal landmarks, including the appendiceal orifice and the ileocecal valve. Success rates were based on adjusted completion rate greater than 90 percent and cecal intubation time, less than 20 minutes. Polyps greater than 5 mm were recorded. The trainees learning curve was calculated in consecutive blocks of 50 procedures.

During a colonoscopy, the ability to reach and examine the cecum is an

obligatory measure of competence. Trainees, however, may confuse the flexure (or bend of the colon) with the cecum. This study considered the cecum reached only if cecal landmarks (appendiceal orifice and ileocecal valve) were clearly identified with electronic photography.

Cecal intubation rates above 90 percent are a goal of training. Mean cecal intubation time by experienced endoscopists has been reported at between 10 and 20 minutes. Another measure that could be considered to reflect competence is the polyp detection rate. Among healthy asymptomatic patients undergoing screening colonoscopy, adenomas (benign abnormal tissue) is detected in 25 percent of men and 15 percent of women more than 50 years old.

Results

The overall success rate over the eight month study for reaching the cecum in less than 20 minutes was 83.5 percent. The trainee's skill at cecal intubation in less than 20 minutes improved significantly and rapidly within the first 150 procedures and reached the requisite for competence after 150 procedures. Only a slow improvement was observed subsequently. Time to cecal intubation decreased from 11.16 minutes to 8.39 minutes after 150 procedures and continuously improved afterwards.

The polyp detection rate of all colonoscopies was 21.8 percent. During the training period, the polyp detection rate did not significantly improve (all colonoscopies and healthy screenings of patients more than 50 years old).

Researchers suggest that the minimum threshold number of procedures for technical competence in screening and diagnostic colonoscopy is more than 150 and factors associated with prolonged cecal intubation for typical trainees did not differ from those for experienced colonoscopists.

Source: American Society for Gastrointestinal Endoscopy

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