First a.m. Colonoscopy Yielded More Polyps

BY ROBERT FINN
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SAN DIEGO — Colonoscopies performed first thing in the morning yielded significantly more polyps and more histologically confirmed polyps than did those performed later in the day, according to a study presented at the annual Digestive Disease Week.

"In medicine it's well known that errors accumulate, particularly in anesthesia and surgery, as the day progresses," said Dr. Brennan M. Spiegel of the University of California, Los Angeles. "Any surgeon will tell you that he'd rather be the first case of the day if he has to go under the knife." The study he presented appears to extend these results to both surveillance and screening colonoscopy.

On average, the first colonoscopy of the day found 20% more polyps than did those performed later in the day, a statistically significant difference.

Dr. Spiegel and his colleagues performed a retrospective analysis of 500 consecutive patients seen at the West Los Angeles Veterans Administration Medical Center in 2006-2007. At that institution, colonoscopy cases begin at 7:45 a.m. and typically end at 1 p.m. The investigators divided that time into five segments that they analyzed separately.

Colonoscopists found a mean of 2.6 polyps per patient seen before 8:30 a.m., 2.1 polyps between 10 a.m. and 11:30 a.m., and 1.2 polyps after 1 p.m. On average, the first colonoscopy of the day found 20% more polyps than did those performed later in the day, a statistically significant difference. The trend line was also statistically significant.

The investigators noticed a similar pattern when they restricted their analysis to histologically confirmed polyps. The colonoscopists found a mean of 2.1 hyperplastic polyps during the first case of the day, 1.6 in cases between 10 a.m. and 11:30 a.m., and 1.1 in cases after 1 p.m. That trend line also was statistically significant.

The first case of the day remained a significant independent predictor of polyp yield even after the investigators controlled for a host of potential confounders in a multivariate analysis ($P = .004$). They controlled for patient-level factors such as age and body mass index, provider-level factors such as which individual colonoscopist performed the procedure and whether he or she was a fellow, and procedure-level factors such as the quality of the bowel prep and the withdrawal time.

Of those factors, the only other independent predictor of polyp yield was whether or not a fellow was participating in the procedure. Fellow participation was a strong predictor of higher yield ($P = .00001$). Dr. Spiegel suggested that one reason the presence of fellows may have improved yield is that there were "two [sets of] eyes on the screen instead of one."

The study generated some critical comment during the question-and-answer period. Although no one intentionally assigned a specific type of case to a specific time period, one audience member said that there might be some undetected bias in appointment times, with a certain type of patient choosing earlier or later appointments.

Another physician noted that some colonoscopy centers perform many more procedures per day than does the West Los Angeles VA Medical Center, and suggested that the result might have been different if the study had been conducted elsewhere.

Another audience member commented, "I worry that when the New York Times or the Wall Street Journal gets ahold of this paper and publishes it widely, we're going to begin to have great difficulties scheduling patients in the afternoon."

Dr. Spiegel agreed that the study should be repeated elsewhere before anyone takes it too seriously. "And whether it's the New York Times or anyone else, we have to emphasize that we have no idea that this impacts advanced adenomatous cancer" in terms of survival, he said.

But if the results are generalizable and colonoscopists are simply more vigilant earlier in the day, Dr. Spiegel suggested that clinicians look to other industries, such as air-traffic control and long-distance trucking, that depend on constant vigilance. In those industries, strategies such as split-shift scheduling, visible prompts, and frequent reminders to be vigilant have proved helpful.

Dr. Spiegel acknowledged receiving consulting fees, research support, and/or other financial benefits from AstraZeneca, Ethicon, TAP Pharmaceutical, Novartis, and Procter & Gamble. ■

THE EFFECTIVE PHYSICIAN

Barrett's Esophagus

BY WILLIAM E. GOLDEN, M.D., AND ROBERT H. HOPKINS, M.D.

Background

The diagnosis, surveillance, and treatment of Barrett's esophagus remain a vexing clinical concern. The American College of Gastroenterology recently released an update of its clinical practice guideline.

Conclusions

The incidence of esophageal cancer continues to rise at a rate faster than that of breast cancer, prostate cancer, and melanoma. In white men, annual incidence is 3.6/100,000, but the incidence is only 0.8/100,000 in black men and 0.3/100,000 in white women.

Most patients with locally advanced adenocarcinoma of the esophagus are found to have Barrett's esophagus on pretreatment tissue samples.

Data are lacking to document the impact of the diagnosis of Barrett's esophagus on mortality from adenocarcinoma of the esophagus. Current 5-year survival of adenocarcinoma of the esophagus is 13%.

The clinical definition in the United States of Barrett's esophagus remains unchanged: the proximal displacement of the squamocolumnar cell line, containing intestinal metaplasia, beyond the gastroesophageal junction. Prevalence is estimated at 1.6% of the population.

There are no data on the risk of adenocarcinoma of the esophagus in patients with a columnar cell–lined esophagus without metaplasia.

Studies have documented good interobserver reliability for endoscopic recognition of Barrett's esophagus, but this diagnostic consistency drops considerably for affected segments less than 1 cm in length.

Nearly 10% of patients with erosive esophagitis have been diagnosed with Barrett's esophagus on diagnostic studies after healing of the inflammation.

Implementation

Barrett's esophagus is most commonly found in white men over age 50 years with long-standing heartburn. Nevertheless, presence of heartburn is an insensitive risk factor for Barrett's esophagus.

Patients with Barrett's should receive acid suppression with proton pump inhibitors once or twice daily. Fundoplication is a surgical option, but up to 20% of these procedures have failed at 5 years.

There is insufficient evidence to recommend diagnostic screening of targeted populations at this time.

Erosive esophagitis should be healed prior to biopsies to establish the diagnosis of Barrett's esophagus.

Although multiple biopsies are required to establish the diagnosis, only the columnar-lined esophagus requires sampling. A four-quadrant biopsy for every 2 cm of Barrett's mucosa is recommended. Specimens should be reviewed by GI pathologists to avoid diagnostic variation.

Although most gastroenterologists actively monitor patients with Barrett's esophagus, data supporting the value of this approach are lacking. Patients undergoing long-term surveillance should be on proton pump inhibitors to reduce inflammation that impairs visual recognition and pathologic reading of tissue samples.

Patients with low-grade dysplasia often receive follow-up endoscopy at 6 months. If follow-up tissue does not contain high-grade dysplasia, these patients usually receive annual endoscopy until there is no dysplasia on two consecutive endoscopies. Of patients with low-grade dysplasia, 40% will be dysplasia-free on subsequent samples and two-thirds will have no long-term dysplasia.

The 5-year risk of adenocarcinoma of the esophagus in patients with high-grade dysplasia is greater than 30%. These patients should be counseled on therapeutic options, which include intensive surveillance, esophagectomy, and ablative techniques. Esophagectomy is no longer a required procedure for high-grade dysplasia. Active surveillance of high-grade dysplasia should include a four-quadrant biopsy every 1 cm of the affected area to avoid missing new cancers.

Esophagectomy of high-grade dysplasia is associated with a 33% complication rate and a 7-day length of stay even with newer laparoscopic surgical techniques. Vagal-sparing surgery with and without colonic interposition can help avoid dumping syndromes associated with esophagectomy alone.

Photodynamic therapy has been used in Europe as an alternative to surgery for high-grade dysplasia. In one major study, 78% of treated patients cleared the dysplasia, compared with 39% in the control group. Photodynamic therapy has a 5-year all-cause mortality of 8%, similar to that of surgery.

Patients who become free of dysplasia should be managed for their risk as reflected by their previous level of diagnostic severity.

Esophageal capsule endoscopy has potential to provide noninvasive diagnosis but should still be viewed as experimental at this time.

Promising technologies now under development include the improvement of endoscopic imaging with different photochemicals, better diagnosis using biomarkers, and medications for the chemoprevention of cancer transformation. None of these technologies is ready for general clinical application at this time.

Reference

Wang KK, et al. Updated guidelines 2008 for the diagnosis, surveillance and therapy of Barrett's esophagus. Am. J. Gastroenterol. 2008;103:788-97.

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