# **Does Everyone Need** a Colonoscopy?

A Surgeon's View

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lthough colon cancer is a deadly disease, it is very curable in its early stages. If the cancer is confined to the bowel wall, the can be greater

five-year survival can be greater than 90 percent. Once it has spread to lymph nodes, however, five-year survival decreases to 50 to 60 percent. With distant metastasis survival will be less than 10 percent.

A major problem with detection is that colorectal cancer has no early signs or symptoms. Therefore, health care providers should make colorectal cancer risk assessment part of their routine (see Table 1). By obtaining information such as age, history of colon cancer, polyps, or colitis, and a family history of colon cancer, a screening strategy can be determined.

#### **SCREENING TOOLS**

More than 80 percent of colorectal cancers are sporadic, and the vast majority occur in people older than 50. Thus, screening of patients with no other risk factors should begin at age 50. Screening tools include digital rectal exam, fecal occult blood testing, sigmoidoscopy, barium enema, and colonoscopy.

Digital rectal examination is still a vital part of the complete physical exam. It used to be said that 50 percent of colorectal cancers could be discovered on rectal exam. This is clearly not the case now; increasingly, tumors are being found in the proximal colon. Still, a good anorectal exam allows examination for other pathology such as

Randy Crim, M.D., and Jeff Hurley, M.D., are colorectal surgeons with Texas Colon and Rectal Surgeons, Dallas, Tex. hemorrhoids, fistulas, or infections. Prostate and pelvic floor abnormalities such as sphincter dysfunction or rectocele can also be evaluated.

Flexible sigmoidoscopy was a major advance over rigid proctoscopy in that more of the colon could be examined. The thinner, flexible scope causes less discomfort. Flexible sigmoidoscopy has been advocated as the major tool for colorectal screening, since it can be done in the office without sedation. If adenomatous polyps are seen, then a full colonoscopy should be performed, because the presence of polyps in the distal colon increases the risk of proximal polyps or cancer. Distal colon polyps predict proximal colon polyps in up to 30 percent of subjects, and lesions are advanced in up to 20 percent.<sup>1</sup> Studies show that half of tumors could potentially be reached with sigmoidoscopy. Recommendations now include sigmoidoscopy in conjunction with fecal occult blood testing.

The major criticism of sigmoidoscopy as a screening method is that at least half of the colon is not examined. The exam is also limited by discomfort. Furthermore, in a study by Painter and colleagues<sup>2</sup> examination of the entire sigmoid was not achieved in approximately one-quarter of the patients. The descending colon was intubated in a minority of cases.

In a study by Imperiale and colleagues,<sup>3</sup> patients who had undergone colonoscopic screening for the first time were examined for advanced proximal neoplasia and whether they had synchronous distal neoplasia. Of patients with advanced proximal neoplasia, 46 percent had no distal polyps. One conclusion of the study was that if colonoscopic screening were performed only in people with distal polyps, about half the cases of advanced proximal neoplasia would be missed.

Although problems exist with specificity and sensitivity, the use of the *fecal occult blood test* (FOBT) has been shown to reduce the mortality from colorectal cancer. The biggest problem in office use of the FOBT is lack of patient compliance, which severely limits FOBT as an effective screening tool. Patients don't want to adhere to the diet, collect the specimen, or return it. For those who test positive, colonoscopy is required.

For years barium enema was the primary tool for a complete exam of the colon. An air contrast barium enema allows for even greater mucosal detail. Controversy exists regarding the accuracy of barium enema versus endoscopy, but clearly colonoscopy allows for detection of smaller lesions and also therapeutic intervention. Prospective studies that were part of the National Polyp Study have shown colonoscopy to be superior to barium enema in follow-up of patients with a history of polyps.<sup>4</sup> Barium enema is still valuable to evaluate the colon proximal to a nearly obstructing lesion or after an incomplete colonoscopy.

#### COLONOSCOPY: PROCEDURE OF CHOICE

Colonoscopy has emerged as the best method to examine the entire colon. Fiberoptics have given way to computer chip technology, and the resolution and picture quality allow identification of lesions smaller than one centimeter in size. Some endoscopists irrigate the wall with dye to pick up even more subtle changes. In addition to identification of pathology, working channels in the scope allow for biopsy and removal of neoplastic lesions. Colonoscopy is clearly the recommended exam for high-risk individuals and has been recommended by the American Cancer Society as part of routine screening. Screening recommendations are listed in Table 2.

Lieberman and colleagues<sup>5</sup> used colonoscopy as a screening tool for asymptomatic adults and found neoplastic lesions in 37 percent. Half of their patients with advanced proximal neoplasia had no distal polyps. Colonoscopy fulfills the ultimate goal of a screening program in that cancers can be prevented by the removal of premalignant lesions.

## Table 1. Risk Factors forColorectal Cancer

- Age greater than 50
- High-fat/low-fiber diet
- Adenomatous polyps
- Inflammatory bowel disease (ulcerative colitis or Crohn's disease)
- Family history of colorectal cancer
- Familial polyposis
- Hereditary nonpolyposis colon cancer
- History of breast, ovarian, or endometrial cancer

Insurance companies, however, may not cover colonoscopy, so it has not become routine practice. The cost of the exam is the biggest impediment to its more universal use.

Virtual colonoscopy may be a promising screening test for the future. It uses advanced CT-scan techniques to construct virtual 3-D images of a colon that can be "traveled through" and visualized similar to video games. This technology is early in development, but considering computer advances, it will probably be a viable technique similar to CT cardiac imaging.

Genetic screening may also hold promise for colorectal cancer. Identifying at-risk individuals such as those with familial polyposis or hereditary nonpolyposis colon cancer (HNPCC) may lead to earlier intervention.

While there are signs of improvement in survival with colon cancer, the fact remains that 20 percent of patients with colorectal cancer present with metastatic disease. This is a disease where health care professionals can truly have a positive impact by educating patients about the disease, identifying people at risk, and sending them for the appropriate exam. While the expense of colonoscopy limits its widespread use now, its superiority as a tool to examine the colon will ultimately make it the procedure of choice.

### REFERENCES

<sup>1</sup>Schoen RE, Corle D, Cranston L, et al. Is colonoscopy needed for the nonadvanced adenoma found on sigmoidoscopy: The Polyp Prevention Trial. *Gastroenterol*. September 1998;115(3):533-541.

<sup>2</sup>Painter J, Saunders DB, Bell GD, et al. Depth of insertion at flexible sigmoidoscopy: implications for colorectal screening and instrument design. *Endosc.* March 1999;31 (3):227-231.

<sup>3</sup>Imperiale TF, Wagner DR, Ching YL, et al. Risk of advanced proximal neoplasms in asymptomatic adults according to the distal colorectal findings. *N Engl J Med.* July 20, 2000;343(3):169-174.

<sup>4</sup>Winawer SJ, Stewart ET, Zauber AG, et al. A comparison of colonoscopy and double contrast barium enema for surveillance after polypectomy. *N Engl J Med.* June 15, 2000;342(24):1766-1772.

<sup>5</sup>Lieberman DA, Weiss DG, Bond JH, et al. Use of colonoscopy to screen asymptomatic adults for colorectal cancer. *N Engl J Med.* July 20, 2000;343(3):162-168.

Table 2. Screening Recommendations*		
Average risk, age 50	Annual FOBT and flexible sigmoidoscopy every 5 years or colonoscopy every 10 years or barium enema every 5 to 10 years	
Moderate risk	Adenoma on screening exam	Colonoscopy
	First-degree relative with colorectal cancer	Colonoscopy at age 40 or 10 years before youngest cancer in family
	First-degree relative younger than 60 with adenoma	Colonoscopy at age 40 or 10 years before youngest adenoma in family
High risk	Inflammatory bowel disease	Colonoscopy every 1 to 2 years after 8 years' diagnosis with colitis involving the entire colon, or 12 years' diagnosis with colitis involving the left side of the colon, i.e. rectum, sigmoid, and descending colon
	Familial polyposis	Colonoscopy in early teens, and consider genetic testing
	Hereditary nonpolyposis colon cancer	Colonoscopy in early 20s and every 2 years up to age 40, then every year, and consider genetic testing.
*Average risk, age 50 scre	eening recommendations are from the A	gency for Health Care Policy and Research (AHCPR).

Currently, there is no consensus on screening for moderate- to high-risk individuals. The recommendations listed here are based on our experience. For a complete compilation of guidelines, please refer to the National Guideline Clearinghouse.