

Colorectal Cancer Screening

Colorectal cancer (CRC) is the third most commonly diagnosed cancer and the second leading cause of cancer deaths in the U.S. The 5-year survival for early stage cancers is 90%, while only 10% of patients with advanced cancers survive 5 years. As most cancers arise in polyps, and it takes an average of 10 years for a small polyp to progress to a cancer, screening should lead to a decrease in CRC related deaths.

Screening Patients at Average Risk:

Screening for patients at average risk for CRC should begin at age 50. The simplest option is fecal occult blood testing (FOBT). Patients should collect three separate stool samples at home on a yearly basis. Since samples from digital rectal exam have a high false positive rate, they should not be used. All positive tests mandate total colonoscopy (TC). FOBT testing should occur on a yearly basis in conjunction with other screening tests. In prospective randomized trials, this approach has decreased CRC mortality by 15-33%.

Another option, flexible sigmoidoscopy, should be performed every 5 years. Sigmoidoscopy is most effective when combined with yearly FOBT and with intermittent barium enemas to evaluate the right colon. As with FOBT, all positive tests mandate TC. Double contrast barium enema (DCBE) every 5-10 years is another option. DCBE does offer evaluation of the entire colon, but has only 83% sensitivity. Furthermore, no studies demonstrate that DCBE lowers CRC related mortality.

TC every 10 years may be the best method for CRC screening. TC offers the advantages of complete colonic visualization with therapeutic potential. Although no direct studies evaluate whether screening TC reduced CRC related mortality, the National Polyp Study estimated that 76-90% of colon cancers could be prevented through routine colonoscopic screening.

Furthermore, TC is an improvement upon sigmoidoscopy, and there is direct evidence that

sigmoidoscopy reduces CRC mortality. TC has a sensitivity of 93% for detecting CRC.

Several recent reports have generated interest in CT colography (virtual colonoscopy) as a non-invasive method to evaluate the colon. At this time there is no solid evidence demonstrating equivalent effectiveness at finding early cancers compared with currently recommended screening tests. More studies are needed before recommending it as a screening test for the general public. At this time, CT colonoscopy represents a promising, but experimental, approach.

Screening High Risk Patients:

Individuals with a family history of CRC or adenomas in first-degree relatives should undergo TC every 3-5 years beginning at an age 10 years younger than the youngest effected relative. Hereditary non-polyposis colorectal cancers should be suspected in any patient with several relatives with CRC, especially if any of the relatives was diagnosed before age 50. Colonoscopic evaluations should be performed in these patients every 2 years starting at age 25, or 5 years younger than the earliest diagnosis of CRC, whichever is younger. After age 40, TC should be done annually.

Personal history of CRC requires TC before surgery or within 12 months of resection. If negative, subsequent procedures can be deferred for 3 years. Frequency of endoscopy in patients with a personal history of adenomatous polyps depends on the number and type of polyps initially treated. Although therapy for these patients should be individualized, TC is the preferred method of follow-up.

We believe colonoscopic screening most effectively reduces mortality from colon cancer; it is the most sensitive test and allows concurrent therapy. Unfortunately, only 1/3 of patients actually undergo adequate screening. In order to improve this community's screening rate, we have a program in place to allow easy, prompt scheduling of this vital exam. (*Gastrointest Endosc. 2000 Jun;51(6):777-82. Other sources available on request*) Summarized by Arun Gowdamarajan, MD.

What is Laparoscopic Surgery?

Laparoscopic or “minimally invasive” techniques have revolutionized the practice of surgery. Initially, laparoscopic surgery was used primarily for gynecologic surgery and cholecystectomy. Over the past 10 years, its role has been expanded to include colon and rectal surgery. In traditional “open” surgery, the surgeon uses a single incision to enter into the abdomen and complete an operation. Laparoscopic surgery uses several 0.5-1 cm incisions, called “ports”. Specialized instruments and a camera known as a laparoscope are passed through these ports. The laparoscope transmits images from the abdominal cavity to high-resolution video monitors in the operating room, and the surgeon performs the operation by watching detailed images of the abdomen on the monitor. This system allows the surgeon to perform the same operations as traditional surgery but with smaller incisions.

We perform most of our abdominal surgery laparoscopically. This includes surgery for Crohn’s disease, ulcerative colitis, diverticulitis, cancer, rectal prolapse, and severe constipation.

What are the Advantages of Laparoscopic Surgery?

In comparison to conventional colectomy, the benefits of laparoscopic colectomy include reduction of postoperative ileus, less postoperative pain and concomitant reduction in need for analgesics, an earlier tolerance of diet, a shortened hospital stay, and improved cosmetic results.

Perhaps more important than a decreased hospital stay is the fact that patients undergoing laparoscopic colectomy return to normal activities and employment 3-4 weeks earlier than patients undergoing open colectomy. This benefit seems especially important in the current difficult economic environment.

Is Laparoscopic Surgery Safe?

Laparoscopic surgery is as safe as traditional open surgery with regard to morbidity and mortality. One of the factors that initially prevented the adaptation of laparoscopic colectomy for colon cancer was early data that suggested an inferior oncologic outcome with the laparoscopic approach. Since 2002, however, there have been four large randomized controlled trials

comparing laparoscopic versus open colectomy for colon cancer. These trials have demonstrated that laparoscopic colectomy is equivalent to open colectomy in oncologic outcomes such as adequacy of resection, recurrence, and survival. This has led to the widespread adaptation of the laparoscopic approach in the treatment of colon cancer.

There are fewer randomized controlled trials evaluating the effectiveness of laparoscopy in the treatment of rectal cancer. However, the published series that are currently available suggest that there is no difference in oncologic outcomes between laparoscopic and open resection for rectal cancer.

What About Robotic Colectomy?

Unlike other surgical subspecialties, such as urology, robotic surgery has been slow to enter the realm of colon and rectal surgery. This is due to the fact that most minimally invasive intestinal surgery can be performed with the same ease laparoscopically as with a robot, with much lower associated costs. Rectal surgery, however, may be well-suited for robotics because of the difficulty of performing a laparoscopic resection and anastomosis within the pelvis. Early reports do confirm that robotic rectal cancer surgery is safe and feasible. **We are currently investigating the benefit of robotic colectomy for our patients and have successfully employed this technique in several recent cases involving deep pelvic dissection.**

In conclusion, we perform approximately 90% of our intestinal surgery laparoscopically. Our patients have left the hospital as early as 2-3 days after surgery, and many are back to work within 3-4 weeks after surgery. We are dedicated to the use of minimally invasive techniques for our patients and are constantly exploring ways to reduce pain, length of hospital stay, and the time they must remain off work.

Marcello PW, Young-Gadok T. Laparoscopy. In: The ASCRS Textbook of Colon and Rectal Surgery. Springer Science and Business Medica, LLC, 2007: 693-712. Koopman MC, Heise CO. Laparoscopic and minimally invasive resection of malignant colorectal disease. Surg Clin N Am 2008; 88: 1047-72. http://www.fascrs.org/patients/treatments_and_screenings/laparoscopic_surgery/. Summarized by Ateet H. Shah, MD.