The value of continued colonoscopy in the elderly, for the prevention of colon cancer, has been questioned recently. A higher hospitalization rate after colonoscopy and a higher perforation rate from colonoscopy is evident in the elderly (1,2). There are also concerns about their prep tolerance and sedation tolerance. However, adenoma prevalence appears to be higher in the previously unscreened elderly population so there is significant potential benefit to screening an older population despite their shorter life span.

A thorough analysis of this dilemma can be found in the US Preventive Services Task Force (USPSTF) website. They state “continued screening in 75-year-old persons after consecutive negative screenings since age 50 will add little benefit. Individuals with continuous negative findings by age 75 are unlikely to have a missed adenoma at their last screening or to develop an adenoma that progresses to cancer and subsequent cancer death after their last screening. Surveillance colonoscopies for patients with adenomas detected are continued without a stopping age. We note that our analysis used chronologic age rather than comorbidity-adjusted life expectancy and that the decision to stop screening in practice should consider the age and health of the patient. As a guide, life expectancy at age 75 is 10.5 years for men and 12.5 years for women, respectively (3).”

I have found that the above statement and USPSTF recommendations are often misinterpreted to mean the USPSTF does not recommend colonoscopy for cancer prevention in any patient over age 75. The USPSTF recommendation for no further screening over age 75 only applies to those who have undergone previously negative colon exams at age 50 and had negative follow-up exams. Note that the USPSTF does clearly recommend against screening for colorectal cancer in adults older than age 85. What about the elderly patient who presents for screening but has had no prior colonoscopy? A recent Annals of Internal Medicine article suggests “in unscreened elderly persons with no comorbid conditions, screening by colonoscopy was indicated up to age 80, with moderate co-morbid conditions, age 80; and severe comorbid conditions up to age 77 (4).”

This study looked at quality adjusted life years gained, costs, and cost per quality adjusted life year gained.

The American Gastroenterology Association does not advocate a specific age to discontinue screening. They recommend that “Both surveillance and screening should not be continued when risk may outweigh benefit… the decision to continue surveillance should be individualized, based on an assessment of benefit, risk, and comorbidities (5).”

The Society of General Internal Medicine’s “Choosing Wisely” Campaign suggests that if a person is thought to have a life expectancy less than 10 years then perhaps the risk of screening for colon cancer outweighs the benefit. Of course, estimating life expectancy is difficult and unproven.

Personally, I find that most patients around age 75 and older welcome a discussion about the risks and benefits of colon cancer screening. I will explain to a patient with significant co-morbidities that the risk appears to outweigh the benefit of continued screening, by any method, and this is almost always well received. When the risk/benefit ratio seems about equal, I will ask the patient to decide, making sure he or she understands both the risks and benefits.

Facts about Colon Cancer

1. In American Cancer Society (ACS) estimates for 2015, colorectal cancer was the second leading cause of cancer deaths in the United States, after lung cancer. (6)
2. Colorectal cancer is the third leading cause of cancer deaths in the United States, after lung and prostate cancer. (6)
3. The American Cancer Society estimates that 138,000 cases of colorectal cancer and 40,000 deaths due to this disease will be diagnosed in the United States in 2015. (6)
4. Colorectal cancer is the third leading cause of cancer deaths in the United States, after lung and prostate cancer. (6)

References

There are a few common surgical procedures used to obtain continued weight loss in the United States, but none more ubiquitous than Roux-en-Y gastric bypass (RYGB), also referred to as gastric bypass surgery. This surgery makes up for about 80% of all weight loss surgeries, as it combines both restrictive and malabsorptive properties. The first RYGB was performed in 1993. This procedure creates a small gastric pouch (15-30 ml) from the upper stomach which restricts the volume of food intake. Weight loss surgery has become the treatment of choice for patients who are morbidly obese, as it produces 3 to 4 times more weight loss than what can be achieved with nonsurgical weight management programs.

Nutrient deficiency is proportional to the length of the bowel bypassed. Less is known about the consequence of nutritional deficiencies of weight loss surgery compared to the surgery-associated risks like wound infection, anastomotic leak and deep vein thrombosis. Furthermore, the signs and symptoms of many vitamin deficiencies are difficult to identify in the short term. The most common deficiencies are outlined in detail below.

Iron deficiency is one of the most common deficiencies as a result of bariatric surgery. Dietary iron needs to be reduced to the ferrous state by the acid secretion in the stomach, since the main areas of iron absorption (the duodenum and proximal jejunum) are bypassed with the surgery. Iron deficiency can cause anemia, brittle nails, fatigue, irritability and pica syndrome. Most multivitamin and mineral supplements provide sufficient amounts of iron to prevent deficiency. However, if iron deficiency and anemia persist, an additional iron supplementation should be prescribed.

Vitamin B12 is another common deficiency after gastric surgery. The deficiency is due to a failure of separation of vitamin B12 from food sources and to the absence of intrinsic factor, and therefore failure of absorption of crystalline vitamin B12. Although the body storage is substantial compared to the small daily needs, low levels can be seen as early as 6 months after surgery but most commonly 12 months or longer after weight loss surgery. Vitamin B12 deficiency is usually detected by low serum levels and is usually subclinical. However, elevated methylmalonic acid and total homocysteine levels are a result of Vitamin B12 deficiency and are associated with an increased risk of cardiovascular disease. Vitamin B12 deficiency may also cause megaloblastic anemia or neuropsychiatric disorders without anemia.

Vitamin D and Calcium deficiencies are common in post-gastric bypass patients. As a result, their risk of osteoporosis in the long term is elevated. Maximal calcium absorption usually takes place in the jejunum, where it is bypassed in RYGB. The reduced absorption of Vitamin D, which usually takes place in the jejunum and ileum, further reduces calcium malabsorption. Calcium citrate, rather than Calcium carbonate, is the choice of calcium supplementation, since calcium from carbonate is not bioavailable in the absence of stomach acid.

Folate is also known to be affected by weight loss surgery. Although folate absorption usually occurs in the proximal portion of the intestine, it can take place along the entire small bowel with adaptation after surgery. Therefore, folate deficiency is less common than B12 deficiency. Folate deficiency can lead to megaloblastic anemia as well as various neurologic and psychiatric problems. Thiamine deficiency is rare compared to Vitamin B12 and folate deficiencies, but it is more dangerous and has greater clinical importance. Thiamine plays a major role in carbohydrate metabolism and the limited tissue storage will only last for 18 to 20 days once intake is low. Deficiency can happen in the presence of chronic vomiting and very poor oral intake.

The Gold Standard in Colorectal Screening by Dr. Jeffrey Douglass

Colorectal cancer (CRC) remains the third leading cause of cancer for men and women; however evidence shows that new cancer diagnoses have declined by almost 30% over the last decade. This is believed largely due to screening colonoscopy (1). As of 2012, 1 in 3 adults nationwide who are 50-75 years of age, is not being screened as recommended for colorectal cancer (2). Compliance with any single recommended colorectal cancer screening strategy can vary widely and recommendation of only one strategy to patients can contribute to worsened compliance (3). The National Colorectal Cancer Roundtable has recently outlined its “80% by 2018” initiative, which is focused on achieving 80% of adults aged 50 years and older being regularly screened for colorectal cancer by 2018. To achieve this goal, the medical community must utilize all available options for colorectal cancer screening and prevention, especially since more individuals have coverage for colon cancer screening than ever before.

Colonoscopy is the “gold standard” colorectal screening and prevention procedure once it is able to remove “pre-cancerous” polyps during the procedure. Unfortunately, due to the invasive nature of colonoscopy, procedural risks, individual patient factors, and the need for bowel preparation, some patients will not comply with this recommendation. Noninvasive testing which centers on stool analysis includes Fecal Occult Blood Testing (FOBT), Fecal Immunochromatographic Test (FIT) and the newly approved Cologuard stool DNA test. Both Cologuard and FIT carry significant advantages over FOBT testing in test accuracy, eliminating the need for special protest dietary restrictions and requiring only a single stool test instead of multiple stool samples.

Both FIT and Cologuard contain a hemoglobin assay to detect human blood, however, Cologuard has additional DNA targets for various gene mutations associated with colon cancer. A study recently published in the New England Journal of Medicine of nearly 10,000 average risk screening participants at 90 sites across North America compared both FIT and Cologuard to colonoscopy for the detection of CRC and advanced precancerous lesions (4). Cologuard performed better than FIT for colon cancer sensitivity (92.3% vs. 73.8%) and for high grade dysplasia (69.2% vs. 51.1%). Unfortunately, neither test performed well for detection of advanced pre-cancer lesions (42.4% vs. 23.8%). Cologuard’s specificity was worse than FIT (86.6% versus 94.9%) indicating a higher rate of false positives. Any positive test for either FIT or Cologuard requires a follow-up colonoscopy for investigation. FIT testing is required yearly as part of a screening program and although no time interval for Cologuard has been studied some authors have suggested a 3 year time interval. More information in terms of optimal interval will likely be available in the future. The need for stool collection and the variable of patient compliance with the need for repeated testing are challenges for stool based test options. The cost of the Cologuard is $599 which is much greater than FIT testing estimated at around $20.

The challenge for the health care provider will be to try and determine which of our patients will be compliant with various forms of screening. Our goal for them should be the prevention of cancer through the detection and removal of colon polyps, which at this point is only available with optical colonoscopy. When this is not possible due to individual patient factors, completion of any accepted form of CRC screening test will serve to save lives. The Oregon Clinic will move toward 80 by 2018 and the larger goal of elimination of colorectal cancer as a major health concern. Cologuard appears promising as a noninvasive test with better sensitivity and improved, but still low, pre-cancer lesion detection. The associated high cost limits a broad application, FIT testing is inexpensive, but its lower sensitivity for screening and inability to prevent cancer leave much to be desired. However, with all these limitations in mind, the best colorectal screening test is “the one that gets done.”


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