

Virtual colonoscopies ready for prime time

September 18, 2008 by Judith Graham

I write in today's [paper](#) about virtual colonoscopies, a non-invasive way of testing for large polyps that can grow into colon cancer.

This technology, which employs CT scans, has been around for more than a dozen years, but it's still not widely accepted.

That's because research demonstrating the effectiveness of the procedure has been inconclusive, until now. Although several small studies have shown its efficacy, other studies have documented more modest results.

The really important question has been -- can a well-designed, multi-center study demonstrate that virtual colonoscopies are a reliable cancer screening test for ordinary people?

Now, a new report in today's New England Journal of Medicine suggests the answer is yes. It finds that the CT scan-colonoscopies are about as good as standard colonoscopies at detecting large polyps.

The study involved 2,600 patients at 15 medical centers and was sponsored by the National Cancer Institute.

It demonstrates that non-invasive tests identify 90 percent of large polyps (10 millimeters or more), compared to standard colonoscopies. That's an excellent performance, while not foolproof, experts suggest.

"We picked up 90 percent of the larger polyps; earlier research indicates that standard colonoscopies pick up about 88 percent," said Dr. C. Daniel Johnson, of the Mayo Clinic in Scottsdale, Ariz. and the study's principle investigator. "In other words, the sensitivity is basically equivalent."

It's important to note that virtual colonoscopies are less effective at spotlighting smaller growths: the new study indicates they picked up 87 percent of polyps 8 millimeters or over, 84 percent of those 7 millimeters or larger, and 78 percent of polyps at least 6 millimeters in size.

There's considerable debate in the medical community over the cancer threat posed by these smaller growths, compared with large polyps. "It's a grey area," said Dr. David Lichtenstein, director of endoscopy at Boston Medical Center.

But standard colonoscopies have their own limitations. They're less effective at identifying growths on the right side of the colon, because of the requirements of the procedure, he notes.

As for flat polyps, they're probably less likely to be highlighted by virtual colonoscopies

but the evidence isn't fully in on that yet, Lichtenstein says. Standard colonoscopies also miss many flat polyps.

"Neither test is perfect but they're both excellent," says Dr. Perry Pickhardt, associate professor of radiology at the University of Wisconsin School of Medicine and Public Health.

Pickhardt's 2003 study of patients at three military medical centers first established the efficacy of virtual colonoscopy in ordinary patients seeking cancer screenings. Last October, he co-authored another paper showing that non-invasive and standard colonoscopies were equally effective at identify advanced colon cancer. Both studies were published in the New England Journal of Medicine.

The results of the new 15-center study, which confirmed both sets of Pickhardt's findings, were good enough to convince the American Cancer Society, the American College of Radiology and the Multi Society Task Force on Colon Cancer Screening to recommend virtual colonoscopy as a screening option for colon cancer in March.

That recommendation came after the three groups reviewed data from the study presented at a medical conference late last year.

Whether insurers will start paying for virtual colonoscopies is the next important question. Medicare is looking at the issue, and the Blue Cross and Blue Shield Association's Technology Evaluation Center plans to review the new study's results.

Currently, insurers only pay for the tests if patients can't have standard colonoscopies because of their medical conditions. Most medical centers charge two to three times more for standard procedures because they're done in the hospital and an anesthesiologist and pathologist have to be on hand.

If insurers change their policies, demand for the virtual procedures could increase rapidly as will the need for trained medical staff to perform them at a high level, experts say.

But no one expects the newer technology to replace the older test, which is still considered the gold standard for colon cancer screening.

The hope is that the virtual alternative, which involves a CT scan to the abdomen, might appeal to a group of patients who refuse to be screened for colon cancer and convince them to actually go ahead and get the test. More than 50 percent of Americans 50 and older who should be getting colon cancer screenings aren't, many because they find the prospect of a colonoscopy distasteful.

It's not clear that virtual colonoscopies are actually the more comfortable alternative. Most patients who get traditional colonoscopies receive sedatives and don't remember details of the procedure. Patients who get the non-invasive version don't get the medications, and they'll feel a swelling and potential cramping in their abdomen when gas is pumped in the colon just before the scan is taken, physicians report.

The good news is, that sensation typically disappears almost immediately and patients can get in their cars and drive off to work, without having to recover from anesthesia, physicians say.

The bad news is, if a large polyp is detected on a virtual colonoscopy, a patient will have to have a standard procedure to allow doctors to go in and remove the growth.

That can be done the same day, if preparations are made in advance, but it could involve scheduling another procedure on a different day and undergoing the grueling, bowel-draining preparation that patients dread yet again.

Potential complications exist on both sides. With standard colonoscopies, there's a risk of perforating the colon (about 1 in 1,000 patients are affected). With virtual colonoscopies, there's a unknown risk associated with radiation exposure, especially if patients have multiple scans over the course of years.

As for who should get which test, physicians don't recommend virtual colonoscopies for people with a history of colon cancer in their families, a genetic susceptibility, or previous intestinal polyps. Those high-risk patients should get the standard screening test.