Fecal-Tagging Prep Tested for CT Colonography

BY KATE JOHNSON
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BOSTON — Computed tomographic colonography using a fecal-tagging bowel preparation performed well, showing high sensitivity, specificity, and negative predictive value for polyps measuring 8 mm or more, Dr. Didier Bielen reported at an international symposium on virtual colonoscopy sponsored by Boston University.

Although patients prefer the noninvasive nature of computed tomographic colonography (CTC) as compared to optical colonoscopy, both procedures require purgative bowel preparation. But a nonlaxative preparation may be an adequate alternative that proves to yield good results.

In a study of 75 patients undergoing CTC because of family or personal history of colorectal carcinoma or suspicion of colonic pathology, a nonlaxative fecal-tagging bowel preparation allowed sufficient visualization of polyps measuring 8 mm or larger, said Dr. Bielen of University Hospital Gasthuisberg and Katholieke Universiteit Leuven, both in Leuven, Belgium.

The patients (mean age 61) consumed a low-fiber diet for 2 days before the exam. Fecal tagging was achieved with 100 mL water-soluble, iodinated contrast medium given the day prior to the exam. After the CTC was completed, additional bowel preparation was performed with 4-5 L of an electrolyte solution to allow for a same-day comparison to optical colonoscopy.

CTC detected 14 of 20 polyps measuring 6 mm or more in 12 patients and one tumor in another patient. Specifically, CTC detected three of eight polyps measuring 6-7 mm, four of five polyps that were 8-9 mm, all seven polyps measuring 10 mm or more, and the single tumor.

The sensitivity and specificity of CTC per patient for polyps measuring 6-9 mm were 50% and 98.6%, respectively. The negative predictive value for the same polyp size was 95.8%. For polyps of 10 mm or more, the sensitivity, specificity, and negative predictive value were 100%.

With the fecal-tagging preparation, residual fluid was present, but it covered less than 20% of the colonic surface and tagging was homogeneous in most patients. Residual stool was present in some patients, and although its tagging was insufficient in most cases, the stool could be easily recognized because it was floating in tagged fluid, Dr. Bielen reported.

Preliminary results from a screening population study also looked promising, reported Maj. Richard P. Moser III, MC, USA, of Walter Reed Army Medical Center in Washington. Subjects consume a low-fiber diet for 2 days, and stool tagging is achieved with 800 cc of 40% barium solution in six divided doses over the 2 days. Gastrografin (60 cc) is also given the night before the CTC. In the 50 subjects enrolled to date, 30 polyps measuring 6 mm or more have been identified, he said. ■

Deflation Maneuver Reduces Pain in Virtual Colonoscopy

Dr. Abraham H. Dachman described another innovation in virtual colonoscopy in a separate presentation at the meeting.

A deflation maneuver that lasts only 4 seconds can alleviate roughly 6 minutes of pain during virtual colonoscopy, he reported.

"This maneuver works for every patient and should now become routine," said Dr. Dachman of the University of Chicago. "It makes virtual colonoscopy more tolerable and theoretically should reduce the risk of colonic perforation."

Insufflation of the colon with carbon dioxide is necessary during virtual colonoscopy (VC) to allow adequate visualization, he said. But the resulting abdominal distension, required for the full duration of the 7- to 15-minute exam, causes pain, which is sometimes severe.

In his study of 38 patients, partial deflation between the supine and prone portions of the exam reduced perceived pain in all patients without compromising quality or significantly prolonging the duration of the procedure.

"We turn off the CO_2 flow and disconnect the rectal tubing for about 4 seconds after completion of the supine scan. This deflates the rectum but not the colon," he explained.

After the deflation maneuver, the patients' average visual analog pain scores dropped from 3.4 to 1.6 and the average colonic pressure dropped by 14 mm Hg. Patients then turned over, and the scanner was prepared and initialized for the prone scan. Reinflation to adequate colonic distension in the prone position took between 5 and 20 seconds.

Although the entire deflation maneuver prolonged the virtual colonoscopy procedure by only 15-30 seconds, it reduced pain for 6 minutes, said Dr. Dachman, adding that the improvement was so significant in all patients that he did not feel it was ethical to include a control group.

"Theoretically, this reduction in colonic pressure should also reduce the risk of colonic perforation, although we have not studied that," he noted.

Virtual Colonoscopy Compares Well With Optical Screening in Two Studies

BY KATE JOHNSON
Montreal Bureau

BOSTON — New data from two studies are putting virtual colonoscopy in a good light compared with optical colonoscopy.

Interim results from a large military study comparing virtual and optical colonoscopy for colorectal cancer screening suggest that the two methods are comparable in terms of sensitivity and specificity, said Maj. Richard P. Moser III, MC, USA.

If final results of the 8-year screening virtual colonoscopy (VC) trial confirm this trend, they will be seen as a validation of the landmark 2003 trial (N. Engl. J. Med. 2003;349:2191-200) that put VC on the map for colorectal cancer screening, suggested Dr. Moser of Walter Reed Army Medical Center in Washington.

Speaking at an international symposium on virtual colonoscopy sponsored by Boston University, Dr. Moser outlined the trial, which includes 3,000 subjects considered to be at average risk in terms of colorectal cancer screening.

The study's primary goals are to validate the 2003 trial, to evaluate the effectiveness and cost-effectiveness of VC screening in routine clinical practice, and to gather data on the short-term natural history of medium-sized (6-9 mm) polyps.

Patients undergoing VC screening are sent to same-day optical colonoscopy (OC) if they have a polyp measuring 10 mm or more, or if they have three polyps measuring at least 6 mm (medium size), Dr. Moser said. Patients with fewer than three medium-sized polyps are randomized to either same-day colonoscopy or 1-year VC follow-up. And patients with no polyps are randomized to either same-day OC or 5-year VC follow-up.

The interim results suggest that for polyps measuring at least 6 mm, VC has a sensitivity of about 90%, compared with about 97% for OC. The specificity of VC was 73%, slightly less than the 80% specificity found in the 2003 trial, indicating some tendency to identify too many polyps, Dr. Moser suggested.

In a separate presentation, Dr. Joel G. Fletcher of the Mayo Clinic in Rochester, Minn., reported that the miss rate for large advanced neoplasia during optical colonoscopy may be "higher than previously anticipated."

He based his conclusion on comparisons of virtual colonoscopy findings and optical colonoscopy results in a prospective trial of 452 asymptomatic patients who underwent both procedures on the same day.

Dr. Fletcher's team noted 43 lesions measuring 1 cm or larger, including 5 cancers and 21 large adenomatous lesions. Seven of these lesions were missed on optical colonoscopy but were seen on virtual colonoscopy. Four of these lesions were cancers measuring 1.3-3.2 cm. There was also 1 tubulovillous adenoma measuring 3 cm, 1 hyperplastic polyp measuring 1.3 cm, and 1 probable leiomyoma measuring 4.4 cm.

Four patients were referred for a repeat colonoscopy, two were recommended for close interval surveillance, and one was observed for new symptoms.

Dr. Fletcher said that the lesions missed on index optical colonoscopy were not confined to any particular colonic segment. Two were located on the proximal aspect of a fold, three were flat, and four were polypoid. ■

Screening Colonoscopy Finds More Cancers in Men

Colonoscopy detects cancers and advanced neoplasia at a higher rate in men than in women, according to a cross-sectional analysis of more than 50,000 participants in a Polish national colon cancer screening program.

The findings suggest that screening guidelines should include male sex as a risk factor.

Dr. Jaroslaw Regula of the Maria Sklodowska-Curie Memorial Cancer Center, Warsaw, and colleagues analyzed data from 43,042 people aged 50-66 years and 7,106 people aged 40-49 years who had reported a family history of any type of cancer. Participants had been referred by general or family physicians at any of 40 sites in Poland and were excluded if they had colon cancer or clinical signs thereof, or a colonoscopy within the last 10 years.

In the younger cohort, colonoscopy detected 124 advanced neoplasias (ANS) in 2.8% of women and 4.5% of men. Similarly, in patients aged 50 years or older, colonoscopy detected AN in 4.5% of women and 8.5% of men (N. Engl. J. Med. 2006;355:1863-72).

The number needed to screen to detect AN in the large bowel was lower for men than for women in all age groups: 30 vs. 52, respectively, in the 40- to 49-year-old age group, 18 vs. 31 in the 50-54 group, 12 vs. 23 in those 55-59 years old, and 10 vs. 19 in those aged 60-66 years.

"We identified male sex as an independent predictor of advanced neoplasia," Dr. Regula and colleagues wrote. "This finding suggests that the screening recommendations should be modified in order to ensure the maximal diagnostic yield of the screening and the optimal use of resources." Current screening guidelines, such as those from the American College of Gastroenterology and the U.S. Preventive Services Task Force, call for colonoscopy screening to begin at age 50 and do not make specific recommendations according to sex.

—John R. Bell