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NEWS

RSNA Press Release

Virtual Colonoscopy Allows Detection of Unsuspected Cancers Beyond Colon

Released: March 23, 2010

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At A Glance

- Unsuspected cancer is detected by virtual colonoscopy at a rate of approximately one case per 200 asymptomatic adults screened.
- Cancers detected outside the colon outnumber colorectal cancers detected by virtual colonoscopy.
- Colorectal cancer remains the second leading cause of cancer death in the U.S.

OAK BROOK, Ill. — A new, large-scale study of more than 10,000 adults found that more than one in every 200 asymptomatic people screened with CT colonography, or virtual colonoscopy, had clinically unsuspected malignant cancer and more than half of the cancers were located outside the colon. The findings were published in the April issue of the journal *Radiology*.

"We are finding that virtual colonoscopy screening actually identifies more unsuspected cancers outside of the colon than within it," said lead author Perry J. Pickhardt, M.D., professor of radiology and chief of GI Imaging, at the University of Wisconsin School of Medicine & Public Health. "As with asymptomatic colorectal cancers identified by virtual colonoscopy screening, these cancers are often detected at an early, curable stage."

Colorectal cancer remains the second leading cause of cancer death in the U.S., and the National Cancer Institute estimated that there would be 146,970 new cases diagnosed in 2009 and 49,920 deaths. The disease is largely preventable through screening for colon polyps, which are benign growths that may develop into cancer if not removed. The American Cancer Society recommends that people at average risk for colorectal cancer begin regular colorectal cancer screening at age 50, but current compliance with this recommendation is below 50 percent. Many people resist screening because of the discomfort and inconvenience caused by the conventional optical colonoscopy test.

Virtual colonoscopy is less invasive than optical colonoscopy and produces precise and detailed "fly-through" images of the entire colon's interior without having to insert a scope. With virtual colonoscopy screening, there is essentially no risk of bleeding or of perforating the colon. There is no need for intravenous sedation, and the procedure is less costly than conventional optical colonoscopy. It also is more convenient, typically taking 10 minutes or less.

Virtual colonoscopy also allows for limited assessment of structures outside the colon (extracolonic), including the abdomen, pelvis and portions of the lungs. Additional diagnostic tests for unsuspected extracolonic findings are performed in about 6 percent of cases, nearly half of which ultimately prove to be clinically relevant.

"Optical colonoscopy cannot provide for any assessment beyond the colon itself, whereas virtual colonoscopy can detect a wide array of unsuspected extracolonic diseases, most notably cancers and aortic aneurysms," Dr. Pickhardt said.

For the study, Dr. Pickhardt and colleagues set out to determine the detection rate and clinical outcome of unsuspected malignancies detected with virtual colonoscopy in an asymptomatic screening population. The researchers retrospectively reviewed the medical records of 10,286 adults (5,388 men and 4,898 women) with a mean age of 59.8 years who were evaluated at either the University of Wisconsin or National Naval Medical Center. All of the adults had undergone colorectal cancer screening with virtual colonoscopy at the two centers between April 2004 and March 2008. The mean time for follow-up was 30.2 months.

Unsuspected cancer was confirmed in 58 patients, including 33 women and 25 men. Invasive colorectal cancer was found in 22 patients, and extracolonic cancer was found in 36 patients. Cancers in 31 patients (53.4 percent) were stage 1 or localized cancers.

"To our knowledge, none of the patients who presented with stage 1, stage 2 or localized disease at diagnosis has progressed to a higher stage," Dr. Pickhardt said. "The fact that so many of the cancers in our study were localized or detected at an early stage appears to have positively affected survival."

Extracolonic malignancies, which outnumbered cases of invasive colorectal cancer, included renal cell carcinoma, lung cancer and non-Hodgkin lymphoma, among others.

"Although extracolonic evaluation at screening CT colonography does carry some disadvantages, such as patient anxiety, inconvenience, or the potential for benign biopsy, our results suggest that early detection of asymptomatic extracolonic cancer represents an additional benefit of screening CT colonography that is not available with optical colonoscopy," Dr. Pickhardt said.

"Virtual colonoscopy is an accurate, safe and convenient screening test that could potentially be a life-saving examination,"

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he added.

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"Colorectal and Extracolonic Cancers Detected at Screening CT Colonography in 10,286 Asymptomatic Adults." Collaborating on this paper with Dr. Pickhardt were David H. Kim, M.D., Ryan J. Meiners, M.D., Kimberly S. Wyatt, M.D., Meghan E. Hanson, M.D., Duncan S. Barlow, M.D., Priscilla A. Cullen, R.N., Rahim A. Remtulla, M.D., and Brooks D. Cash, M.D.

Disclosures: Drs. Pickhardt and Kim have consulted for Viatronix and Medicsight and are co-founders of VirtuoCTC. Dr. Pickhardt has also consulted for Covidien and Philips.

Radiology is edited by Herbert Y. Kressel, M.D., Harvard Medical School, Boston, Mass., and owned and published by the Radiological Society of North America, Inc. (*http://radiology.rsna.org/*)

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For patient-friendly information on virtual colonoscopy, visit *RadiologyInfo.org*.

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