
RSNA Press Release

Colon Cancer Screening with CT May Also Identify Heart Attack Risk

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CHICAGO - Virtual colonoscopy, an imaging procedure used for early identification of colon cancer, may also detect heart attack risk in patients, according to a study presented today at the annual meeting of the Radiological Society of North America (RSNA).

"This early study points to the possibility of multiple diagnostic benefits for patients participating in certain colon cancer screenings," said lead author, Jesse A. Davila, M.D., a fellow in musculoskeletal radiology at the Mayo Clinic Jacksonville in Florida.

Computed tomographic (CT) colonography, more commonly known as virtual colonoscopy, is a minimally invasive procedure that tests for colon cancer by creating 2-D and 3-D fly-through images that identify such abnormalities as pre-cancerous polyps. Virtual colonoscopy requires no sedation and is less costly than conventional colonoscopy.

"With virtual colonoscopy providing a less invasive approach to diagnosing colon cancer, we wanted to measure whether additional information could be gained during the scan," Dr. Davila said. "Because cardiovascular disease is often asymptomatic prior to a major event, we hoped that we could use the scan to measure calcium deposit levels within the aorta and its branching vessels without the need for additional testing."

According to the Centers for Disease Control and Prevention, heart disease is the leading cause of death in the United States, followed closely by cancer. Colon cancer is the second leading cause of cancer deaths. The American Cancer Society recommends that men and women be screened for colon cancer beginning at age 50.

The researchers reviewed the records of 480 patients who received virtual colonoscopy exams at the Mayo Clinic in Rochester, Minn., from 1995 to 1998. Medical records showed a direct correlation between high aortic calcium scores measured during the procedure and the nine patients who experienced heart attacks subsequent to the screening.

At A Glance

- Aortic calcium levels detected during virtual colonoscopy can signal cardiovascular disease before the patient develops symptoms.
- All of the patients who subsequently had heart attacks exhibited high aortic calcium levels during virtual colonoscopy screening.
- Virtual colonoscopy is a minimally invasive procedure requiring no sedation.

By noting calcification scores during virtual colonoscopy procedures, physicians may have an additional means of identifying patients at risk of developing cardiovascular disease, according to Dr. Davila.

"While larger, follow-up studies are necessary to help verify our results, we hope that identifying the possible synergies in medical testing will encourage individuals to take advantage of the diagnostic tools available to them," Dr. Davila said. "As a leading cause of death, colon cancer should be identified as early as possible. The potential benefits from additional diagnostic uses for virtual colonoscopy should encourage individuals to undergo this very important procedure."

Co-authors of this study are C. Daniel Johnson, M.D., Thomas R. Behrenbeck, M.D., and Tanya Hoskin.

Abstract:

• [Assessment of Cardiovascular Risk Status at CT Colonography](#)

Image (.JPG format)

Using a commercially available calcium scoring tool the abdominal aorta was divided into 3 regions: suprarenal (1 cm above the celiac axis to 1cm below the renal arteries), laminar (1 cm below the renals to 1 cm above the bifurcation), bifurcation (1 cm above and below the aortic bifurcation). Each image illustrates a manually placed region of interest and electronically detected calcification within the wall of the aorta in each of the three regions. Detected calcium is seen in red. The laminar region of the aorta contained the highest calcification score.

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RSNA is an association of more than 37,000 radiologists, radiation oncologists and related scientists committed to promoting excellence in radiology through education and by fostering research, with the ultimate goal of improving patient care. The Society is based in Oak Brook, Ill.