

Computed tomography colonography: a well-known but poorly utilized screening method

Colonografia por tomografia computadorizada: um método de rastreamento conhecido porém pouco utilizado

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Malignant colon neoplasm is the third cause of death for cancer in the United States of America. Many of such deaths could be avoided with the introduction of an effective screening schedule⁽¹⁾. The ideal screening test is the one that allows for an early diagnosis and, consequently the management of the disease at its early stages. The effectiveness of a screening test depends on three factors, namely: 1) the disease must be common; 2) early detection of the disease; 3) acceptance of the test by the patient⁽²⁾.

Different factors predispose to large bowel neoplasia: 1) family history of disease or large adenomatous polyp (diagnosed before the age of 60); 2) inflammatory bowel disease; 3) family history of adenomatous polyposis or non-polypoid hereditary colorectal cancer syndromes; 4) previous history of adenomatous colon polyps. Despite the existence of specific predisponent conditions, in approximately 75% of cases it is not possible to identify a specific risk factor⁽³⁾.

Before the introduction of computed tomography colonography (CTC), several screening tests were available to detect colon polyps or neoplasms, namely, fecal occult blood test, rectosigmoidoscopy, a combinations of the mentioned methods, double contrast barium enema and colonoscopy^(4,5).

In 2008, the American Cancer Society, in association with the US Multi-Society Task Force on Colorectal Cancer (representing the three major American gastroenterological societies – American Society of Gastroenterology, American College of Gastroenterology, and American Society of Endoscopy) and the American College of Radiology placed CTC as a screening test for colorectal carcinoma (CRC) in association with colonoscopy, as a modality for primary prevention and early detection⁽⁶⁾.

Virtual colonoscopy or CTC is a relatively recent investigation method, initially described in 1994 amongst the available options for screening CRC. It is a minimally invasive computed tomography (CT) modality utilizing low radiation doses,

with no need for sedation or contrast enhancement. Additionally, CTC allows for a structural analysis of the rectum and colon, and the identification of extracolonic lesions, particularly in asymptomatic patients^(1,6,7).

However, this method presents disadvantages such as 1) exposure to ionizing radiation; 2) need for bowel preparation and colon's insufflation with gas; 3) utilization of high-cost hardware and software; 4) necessity of a rigorous examination protocol; 5) scarcity of professionals trained and familiar with colon disease and pseudolesions^(8,9).

The technique consists in: 1) bowel preparation; 2) colonic distension, either with air or, preferentially, CO₂; 3) tomographic images acquisition⁽²⁾. The images quality is much dependent of the colon preparation and of the utilization of specialized equipment (CT apparatuses and advanced workstations with specific softwares to create endoluminal images similar to those obtained at endoscopic colonoscopy)^(6,10).

A limiting factor of the method is the need for appropriate training of radiologists to interpret the images⁽⁶⁾. For this reason one can say that familiarity with colorectal diseases imaging findings, knowledge of potential pitfalls and technical limitations of the method contribute to reduce misinterpretation and errors of perception in the analysis of CTC⁽¹⁰⁾.

Despite the benefits from this strategy, the adherence to the screening for CRC is below the desirable range^(4,10). According to the literature, in 2008, the number of procedures performed in the United States of America for CRC screening was proportionally lower as compared with the screening for cervical and breast cancer. Amongst other causes, this is attributed to the need for bowel preparation and the lack of priority for screening, as well as to the lack of information about other options for investigation besides colonoscopy⁽⁴⁾.

CTC is indicated for patients undergoing anticoagulant therapy, with incomplete colonoscopy, or with contraindications to sedation. However, preference should be given to colonoscopy for patients at high CRC risk, principally for allowing performance of biopsy^(5,7).

Both in the Brazilian and international literature, one can find studies approaching the relevance of screening for

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polyps and CRC, as well as of analyses of the different modalities of investigation and patients' positioning. It is important to note that the authors could not find any article evaluating surgeons' opinion on the role of CTC in the diagnosis of colorectal diseases.

In the study developed by Kierszenbaum et al.⁽¹¹⁾, included in the present issue of **Radiologia Brasileira**, and that is apparently unprecedented at least in the Brazilian literature, the authors, by means of a questionnaire, have mapped the view of general and gastric surgeons about the role of CTC. The analysis of the study results demonstrates that the method is widely known, particularly in large urban centers and academic centers, but is poorly requested by physicians. The mentioned article recommends the divulgation and inclusion of CTC in the "diagnostic procedures" table of health plans, which would contribute to reduce the CRC morbimortality.

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