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Comparison of the relative sensitivity of CT colonography and double-contrast barium enema for screen detection of colorectal polyps.

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BACKGROUND & AIMS: In a population reflective of a screening setting, our aim was to compare the relative sensitivity and specificity of computed tomography (CT) colonography with double-contrast barium enema (DCBE) for detection of colorectal polyps and to assess the added value of double reading at CT colonography, using endoscopy as the arbiter. **METHODS:** This prospective, blinded study comprised 837 asymptomatic persons at higher than average risk for colorectal cancer who underwent CT colonography followed by same-day DCBE. Examinations with polyps ≥ 5 mm in diameter were referred to colonoscopy. **RESULTS:** CT colonography readers detected 56%-79% of polyps ≥ 10 mm in diameter. In comparison, the sensitivity at DCBE varied between 39% and 56% for the 31 polyps ≥ 1 cm. All of the readers detected more polyps at CT colonography than DCBE, but the difference was statistically significant for only a single reader ($P = 0.02$). Relative specificity for polyps ≥ 10 mm on a per-patient basis ranged from 96% to 99% at CT colonography, and 99%-100% at DCBE. Doubly read CT colonography detected significantly more polyps than DCBE (81% vs. 45% for polyps ≥ 1 cm [$P < 0.01$], and 72% vs. 44% for polyps 5-9 mm [$P < 0.01$]). **CONCLUSIONS:** Double-read CT colonography is significantly more sensitive in detecting polyps than single-read double contrast barium enema. DCBE was significantly more specific than CT colonography.