Colonic masses: detection with MR colonography

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PURPOSE: To assess magnetic resonance (MR) colonography as a method for detection of colorectal masses, with conventional colonoscopy as the reference standard. MATERIALS AND METHODS: MR colonography was performed in 132 patients referred for colonoscopy because of the possible presence of a mass. After rectal filling with a gadopentetate dimeglumine and water enema, T1-weighted three-dimensional gradient-echo MR studies were acquired with the patient in the prone and supine positions. Water-sensitive single-shot fast spin-echo MR images were also obtained. Surface-rendered virtual endoscopic endoluminal views, orthogonal sections in three planes, and water-sensitive MR images were interactively assessed for presence of colorectal masses by two radiologists. RESULTS: MR colonography was well tolerated without sedation or analgesia. MR image quality was sufficient for diagnosis in 127 (96%) patients. Most small (\(<=5\)-mm-diameter) masses were overlooked at MR colonography, but 19 of 31 6-10-mm lesions and 26 of 27 large (>10-mm) lesions were correctly identified. For these large masses, MR colonography had a sensitivity of 93%, specificity of 99%, positive predictive value of 92%, and negative predictive value of 98% for detection of masses. CONCLUSION: MR colonography is a promising modality for help in detecting colorectal mass lesions larger than 10 mm in diameter.