

AJR Am J Roentgenol. 2004 May;182(5):1233-40.

Small (≤ 2 cm) hepatic lesions in colorectal cancer patients: detection and characterization on mangafodipir trisodium-enhanced MRI.

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OBJECTIVE: The purpose of this study was to evaluate whether mangafodipir trisodium (MnDPDP)-enhanced MRI improves the detection and characterization of small (≤ 2 cm) hepatic lesions in patients with colorectal carcinoma, compared with helical CT. **SUBJECTS AND METHODS.** Sixty-nine patients who had or were suspected of having focal liver lesions underwent helical CT and MnDPDP-enhanced MRI and constituted the study population. Two experienced radiologists independently reviewed CT and MR images for the number of hepatic lesions seen and whether the lesion appeared to be benign or metastatic; their interpretations were correlated with the reference diagnoses, including histopathologic diagnoses in 35 patients. The lesions were categorized as small (≤ 2.0 cm in diameter) or large (> 2.0 cm). The differences between MnDPDP-enhanced MRI and helical CT with regard to the detection rates for hepatic lesions and metastases and with regard to the false-positive rates for hepatic metastases were analyzed using the McNemar test. The performances of MnDPDP-enhanced MRI and helical CT in indicating metastases of focal liver lesions were analyzed using receiver operating characteristic curves. **RESULTS:** No statistically significant differences were seen between MnDPDP-enhanced MRI and helical CT in the detection of all hepatic lesions ($p = 0.383$) and small lesions ($p = 0.210$). However, concerning the differentiation between benign and metastatic lesions, MnDPDP-enhanced MRI was superior to helical CT both for all hepatic lesions ($p = 0.023$) and for small lesions ($p = 0.015$), and remained better when the analyses were restricted to patients with histopathologic confirmation ($p = 0.023$ for both). MnDPDP-enhanced MRI changed the diagnosis of hepatic metastasis in nine (13.0%) of 69 patients. Of 12 metastases that were found on MnDPDP-enhanced MRI and missed on helical CT, 11 lesions (91.7%) were small. MnDPDP-enhanced MRI showed a significantly greater detection rate than helical CT for small hepatic metastases ($p = 0.022$). MnDPDP-enhanced MRI was better when the analyses were restricted to patients with histopathologic confirmation ($p = 0.043$). **CONCLUSION:** Although MnDPDP-enhanced MRI is equal to helical CT in detection of both all hepatic lesions and small lesions in patients with colorectal carcinoma, it is superior to CT in characterization of the lesions.

