

Dual contrast MR imaging of liver with superparamagnetic iron oxides and mangafodipir trisodium: Influence of the first on the second contrast agents

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목적 : To assess the feasibility of sequential administration of ferumoxides and mangafodipir trisodium in the same imaging protocols.

대상 및 방법 : Thirty patients underwent double-contrast enhanced MR imaging of liver using ferumoxides (Fe-MRI) and mangafodipir trisodium (Mn-MRI) on 1.5T GE Horizon system. In twenty patients, Mn-MRI was immediately followed by Fe-MRI. In ten patients, Fe-MRI was performed first, then Mn-MRI was performed immediately. In all cases, precontrast T1-weighted in-phase and opposed-phase spoiled gradient echo (GRE) images and T2-weighted fast spin-echo images (TR 4000ms, TE 102ms, ETL 8-12) were obtained. Fe-MRI was performed with FSE and steady state GRE (TE 10 msec, flip angle 30 degrees) sequences. Mn-MRI was performed with in-phase and opposed-phase spoiled GRE sequences. The SNR changes after the use of each contrast agent were calculated.

결과 : The mean percentage of SNR changes after administration of Mn was 58%. When Mn was administered after use of Fe, SNR of liver increased 12% compared to the precontrast T1-weighted MR images. The mean percentage of SNR changes after administration of Fe was -57%. When Fe was administered after use of Mn, the mean change of SNR was -72% compared to the precontrast T2-weighted images.

결론 : The positive enhancement effect of mangafodipir was obscured by the prior use of Fe. Ferumoxides can be effectively used even immediately after the use of T1-contrast agent.