Oral MO-5 *(11:56 - 12:05)*

Fast Dynamic, High Resolution Contrast-Enhanced Head MR Angiography with SENSE and Keyhole Technique: Optimization of Imaging Parameters at 1.5 T MR System

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목적 : To optimize the imaging parameters of dynamic contrast-enhanced MR angiography with SENSE and Keyhole techniques

대상 및 방법 : We have tested possible spatial and temporal resolution of dynamic contrast-enhanced MR angiography by changing the parameters of SENSE factor (46), imaging matrix (256-512), half-scan (yes or no) and scan percentage (60-80 %) in 14 adult human subjects. We did not change the field of view(250-256 mm) and the keyhole percentage of k-space (16 %). A total of 15 mL of MR contrast materials were administered intravenously at a rate of4 mL/sec. Dynamic MR angiography started 8-10 seconds later after contrast material administration. All examinations were performed with an eight channel head coil at a 1.5 T MR system.

결과 : For high temporal resolution (0.8 sec/frame, 25 dynamic series), we optimized imaging parameters as follow: TR/TE/FA =3.3/1.1/30, 256 matrix, SENSE factor of 6,half-scan (yes), scan percentage of 60 %. These imaging parameters produced angiographic images with measured spatial resolution of 1x1x1 mm, and total scan time of 25 seconds. For high spatial resolution (0.5x0.5x0.8 mm), we adjusted imaging parameters as follow: TR/TE/FA = 3.9/1.3/30, 384 matrix (interpolated to 512), SENSE factor of 4, half-scan (no), scan percentage of 60 %. These imaging parameters produced angiographic images with temporal resolution of 2 seconds, 10 dynamic series and total scan time of 32 seconds.

결론 : High-resolution, dynamic contrast-enhanced head MR angiography was feasible at 1.5 T MR system by applying SENSE and keyhole techniques. Clinical application, especially in patients with neurovascular diseases, may be necessary to prove the value of this new technique.