

**Neurovascular Application of Time Resolved MR Angiography
with Parallel Imaging: Initial Experience****김범수¹⁾, 정소령¹⁾, 황문정²⁾, 안국진¹⁾, 김지영¹⁾, 변재영¹⁾, 이재문¹⁾**가톨릭대학교 의과대학 방사선과학교실¹⁾, GE Healthcare Technologies²⁾**목적 :**

Having trade-off between the spatial resolution and frame rates, time-resolved contrast-enhanced MR angiography (CE MRA) provides dynamic temporal information without significant degradation of spatial resolution. Parallel imaging permits shorter imaging time with minimal reduction of image quality. The purpose of this study is to evaluate elliptical centric time resolved imaging on contrast kinetics (ECTRICKS) CE MRA with parallel imaging (array spatial sensitivity encoding technique (ASSET)) in a series of patients with neurovascular abnormalities.

대상 및 방법 :

Patients with suspected/known neurovascular disease or intracranial tumor were imaged using a 1.5 T whole body MR scanner (Signa Twinspeed, GE medical system, Milwaukee, Wis). A 3D multiphase ECTRICKS pulse sequence was combined with parallel imaging (ASSET). Gadolinium-based contrast material (Magnevist or Gadovist, was administered as a single to double dose in an antecubital vein.

결과 :

We have successfully imaged brain AVM, aneurysm, intracranial tumors including meningiomas, hemangioblastoma and metastasis with intratumoral shunt, venous reflux of internal jugular vein during intravenous contrast injection on antecubital vein, and status post trapping of cavernous internal carotid artery. We achieved high resolution time-resolved CE MRA at the frame rates of 2 to 3 seconds, with targeted slab applied in axial, coronal or sagittal plane according to the location and type of the lesion.

결론 :

It is feasible to combine time-resolved CE MRA (ECTRICKS) and parallel imaging (ASSET) for high-resolution and high-frame rate MRA, and useful in the evaluation of neurovascular disease and intracranial tumor. Our initial experience regarding the trade-off between the spatial and temporal resolution, usage of Gd-based contrast media, application of targeted slab and imaging plane according to the location and type of the lesion, and artifact will be presented.