

**In vivo Visualization of Human White Matter Tract by Diffusion Tensor Imaging
Fiber Tractography (DTI-FT)****Seung-Koo Lee¹ • Dong Ik Kim¹**¹Department of Diagnostic Radiology, Yonsei University College of Medicine

목적 : To evaluate the white matter fiber connectivity of normal human using diffusion tensor MRI.

대상 및 방법 : Normal young healthy volunteers (2 women and 1 man) and 3 brain tumor patients participated in this study. All studies were performed using a 1.5T Philips Gyroscan Intera system. Diffusion weighted imaging was performed using single-shot echo planar imaging, with navigator echo phase correction and SENSE. Diffusion weighting was performed along six independent axes, using diffusion weighting of $b=800\text{s/mm}^2$. 128matrix, 23cm FOV, 2.5mm slice thickness were used for imaging parameters. Data were processed on a Window-2000 PC equipped with IDL and PRIDE (Philips Medical System). Corticospinal tract was traced from mid-pons level via posterior limb of internal capsule. Corpus callosum, cerebellar peduncles and frontal fibers were traced by fiber tractography.

결과 : Anatomical configuration of various white matter tracts were clearly demonstrated by fiber tractography. Corticospinal tract showed right and left interconnection at pontine level. Corpus callosum demonstrated strong anisotropy and fiber connectivity from genu and splenium, while little fibers were traced from body. Brain tumor patients showed embedding or displacement of corticospinal tract by the mass and relationship between fibers and tumor was clearly demonstrated.

결론 : Diffusion tensor MRI with fiber tractography visualize human white matter tract in vivo. Further clinical application is expected.