

Diffusion Tensor MRI and Fiber Tractography
: Evaluation of Developmental CNS Anomaly: Preliminary Results

Seung-Koo Lee¹ • Dong Ik Kim¹

¹Department of Diagnostic Radiology, Yonsei University College of Medicine

목적 : To evaluate the white matter fiber configuration in various developmental CNS anomaly.

대상 및 방법 : Juber Syndrome, congenital schizencephaly, callosal agenesis and hemiplegic cerebral palsy patients were evaluated by diffusion tensor MRI. 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 $b=600s/mm^2$. 128 matrix/zero filled to 256, 23cm FOV, 3mm slice thickness were used for imaging parameters. Data were processed on a Window-2000 PC equipped with IDL and PRIDE (Philips Medical System).

결과 : Juber syndrome showed elongated and horizontal orientation of superior cerebellar peduncle. In agenesis of corpus callosum, antero-posterior configuration of longitudinal fiber was demonstrated in fronto-parietal lobe (Probst bundle). Schizencephaly and hemiplegic cerebral palsy patients showed asymmetric configuration of corticospinal tract corresponds to clinical symptoms.

결론 : Diffusion tensor MRI with fiber tractography is useful in the evaluation of white matter tract configuration in developmental CNS anomaly. Further clinical application is expected.