

뇌신경재활

게시일시 및 장소 : 10 월 18 일(금) 13:15-18:00 Room G(3F)

질의응답 일시 및 장소 : 10 월 18 일(금) 15:45-16:30 Room G(3F)

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The reliability of DTT for the corticospinal tract according to number of region of interest

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Purpose

We investigated the reliability of diffusion tensor tractography (DTT) for the corticospinal tract (CST), which is one of most actively researched neural tracts on this topic according to the number of regions of interest (ROIs) in terms of the repeatability and reproducibility.

Materials and Methods

A total of 31 right-handed healthy subjects were recruited for this study. We defined three ROIs along the descending pathway of the CST (the first ROI: the pure CST area in the upper pons, the second ROI: the pure CST area in the lower pons, and the third ROI: the posterior limb of the internal capsule) and employed three kinds ROIs (the single ROI: the first ROI, the dual ROIs: the first and second ROIs, and the triple ROIs: the first, second and third ROIs). DTT parameters (fractional anisotropy [FA] and voxel number [VN]) of the CST were measured in both hemispheres.

Results

Regarding the single ROI method for the reconstruction CST, the results of intra-class correlation coefficient (ICC) showed excellent intra-rater reliability (ICC, FA: 0.915 and VN: 0.811) and inter-raters reliability (ICC, FA: 0.934 and VN: 0.758). The dual ROI method also revealed excellent intra-rater reliability (ICC, FA: 0.942 and VN: 0.910), and inter-raters reliability (ICC, FA: 0.921 and VN: 0.853) with highest values among three methods. In the triple ROI method for the reconstruction CST, results of ICC showed excellent in intra-rater reliability (ICC, FA: 0.922 and VN: 0.877), and inter-raters reliability (ICC, FA: 0.916 and VN: 0.844).

Conclusion

We found excellent reliability of DTT for the CST in all three kinds of ROI methods and best reliability of the dual ROI methods.

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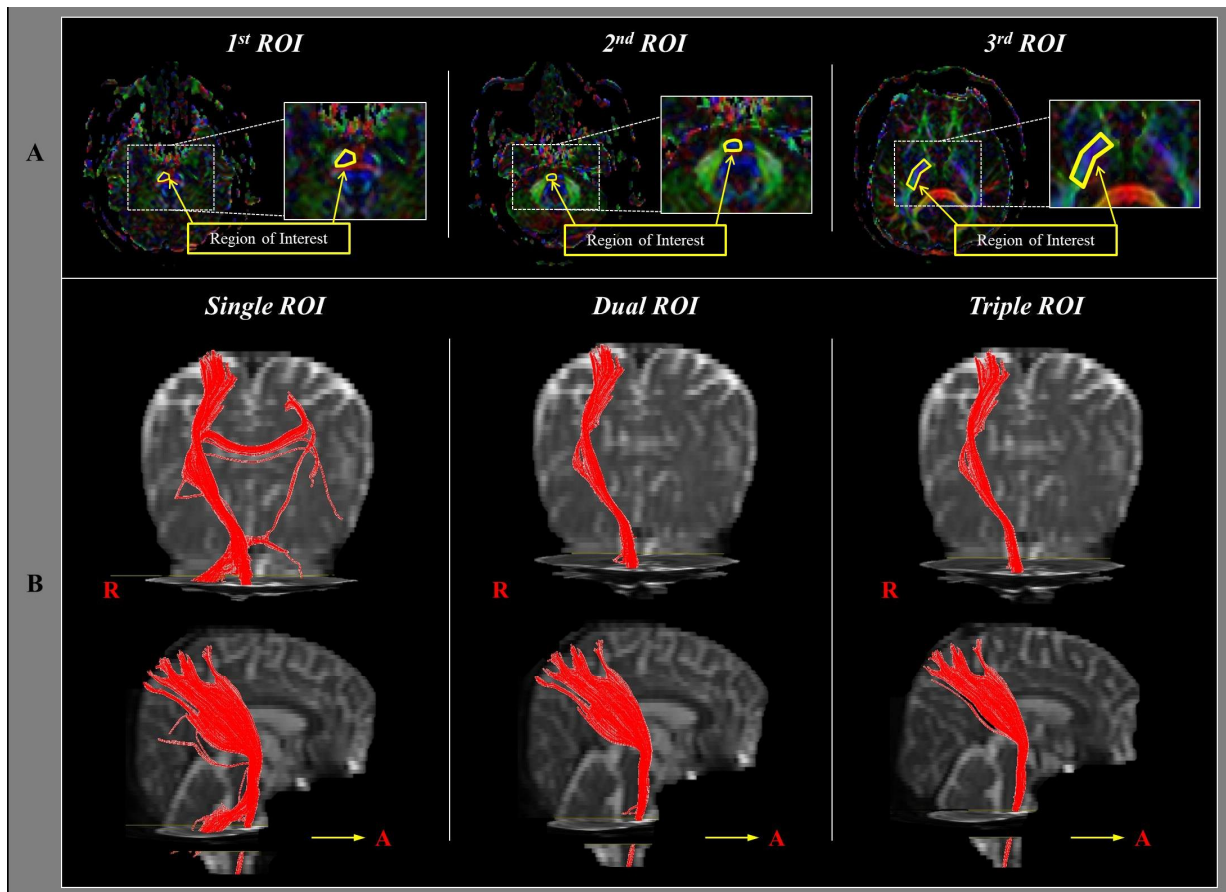


Figure1.