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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Ataxia due to injury of the cortico-ponto-cerebellar tract in patients with mild TBI

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Introduction

The cortico-ponto-cerebellar tract (CPCT) is involved in coordination of movement, therefore, injury of the CPCT can be accompanied by ataxia. In this study, using diffusion tensor tractography (DTT), we investigated injury of the CPCT in patients with mild traumatic brain injury (TBI).

Methods

We recruited 45 consecutive chronic patients with ataxia after TBI following mild TBI and 20 normal control subjects. The score of assessment and rating of ataxia (SARA) was used to evaluation of ataxia. The patients were classified according to two groups based on the score of SARA; patient group A – abnormal SARA scores and patient group B – normal SARA scores. The fractional anisotropy (FA) value and fiber number (FN) of the CPCT was measured.

Results

Significant differences were observed in the FA and FN values of the CPCT between the patient group A and control group, and between the patient group A and B ($p < 0.05$). In addition, a significant difference was observed in the only FA value of the CPCT between the patient group B and control group ($p < 0.05$). However, a significant difference was not observed in the FN value of the CPCT between the patient group B and control group ($p > 0.05$).

Conclusion

By using DTT, injury of the CPCT was demonstrated in patients who showed ataxia following mild TBI. Our results of this study suggest that DTT for the CPCT would be useful for evaluation of patients with ataxia after mTBI because mTBI usually dose not show abnormality on the conventional brain MRI.

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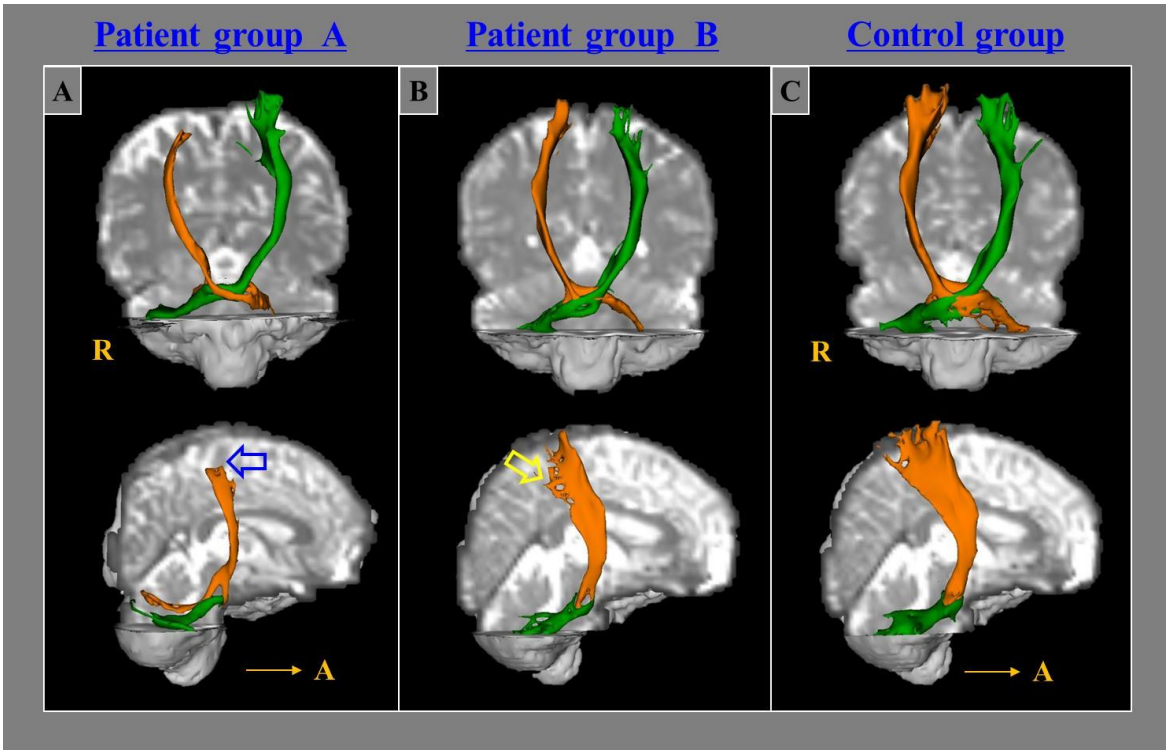

Diffusion tensor tractography for the cortico-ponto-cerebellar tract (CPCT). (A) a representative subject (49-year-old female) of patient group A who showed ataxia (injury of the CPCT; blue arrow), (B) a representative patient (45-year-old female) of patient group B who did not show ataxia (injury of the CPCT; yellow arrow). (C) a representative subject (44-year-old female) of the control group.