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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Changes in the CRT according to the recovery of impaired consciousness in ICH

Yu Sung Seo [1†], Sung Ho Jang [1†], Dong Gyu Kwak[1*†]

College of Medicine, Yeungnam University, Department of Rehabilitation Medicine[1]

Objectives

We investigated the changes in the corticoreticulospinal tract (CRT) in the affected hemisphere according to the recovery of impaired consciousness in patients following intracerebral hemorrhage (ICH).

Methods

We recruited 26 patients with impaired consciousness following ICH and classified them into two groups (group A: no recovery of consciousness, group B: recovery of consciousness). The Glasgow Coma Scale was scored for the clinical evaluation. The CRT in the affected hemisphere was estimated based on the diffusion tensor tractography (DTT) parameters (fractional anisotropy [FA] and tract volume [TV]).

Results

The values of FA and TV of the CRT in the affected hemisphere in group A were not significantly different between the first and second DTT ($p>0.05$). In group B, the FA value of the CRT in the affected hemisphere was not significantly different between the first and second DTT; however, the TV value of the CRT in the affected hemisphere on the second DTT was increased compared with that on the first DTT ($p<0.05$).

Conclusions

We found that the recovery of the affected CRT paralleled the recovery of impaired consciousness in patients with ICH. Our results suggest that facilitation of the CRT could be important for the recovery of impaired consciousness in patients with ICH.

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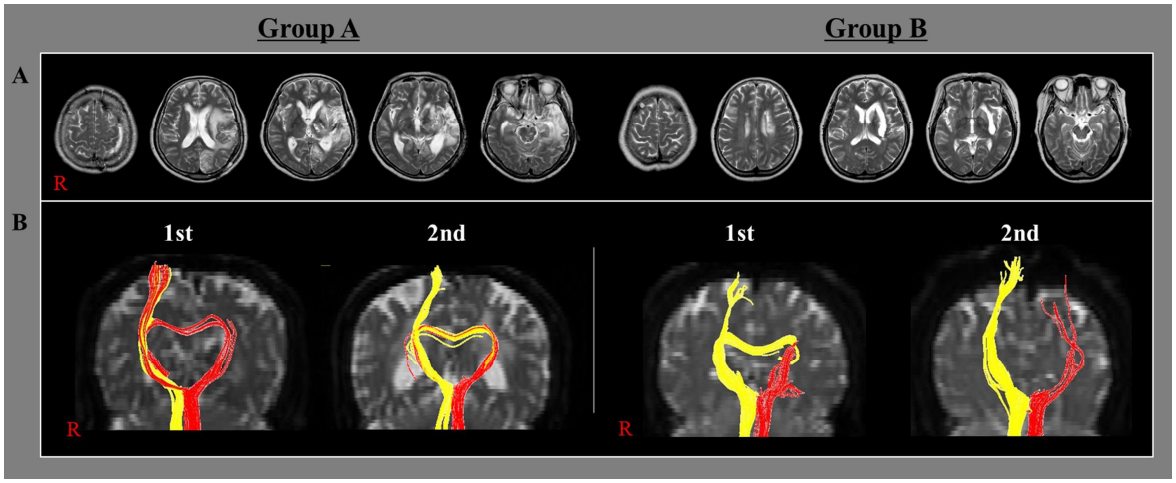

Figure1. T2-weighted brain magnetic resonance images and results of diffusion tensor tractography (DTT) for the corticoreticulospinal tract (CRT) in the affected hemispheres. Representative group A (54-year-old male) and B (51-year-old male). (A) T2-weighted brain magnetic resonance images of groups A and B. (B) Results of DTT for the CRT in groups A and B. The CRT in the affected hemisphere in group A showed no recovery; however, that of group B showed recovery between the first and second DTT.

Table 1. Demographic and clinical data of groups A and B

		Group A	Group B
Sex (male:female)		10:6	8:8
Mean age		54.80 ± 13.00	56.00 ± 15.09
GCS score	First DTI	9.75 ± 2.49	8.86 ± 2.80
	Second DTI	9.25 ± 3.02	12.56 ± 1.93
Mean duration to DTI (days)	First DTI	99.20 ± 59.26	40.20 ± 101.93
	Second DTI	292.36 ± 238.07	101.93 ± 67.27

Values represent mean (±standard deviation); GCS: Glasgow Coma Scale; DTI: diffusion tensor imaging.

Table 2. Comparison of diffusion tensor tractography parameters between groups A and B

		First	Second	*p*-value
FA	Group A	0.45	0.44	0.74
	Group B	0.47	0.47	0.28
TV	Group A	661.71	547.04	0.24
	Group B	713.34	1340.44	0.01*

FA: fractional anisotropy, TV: tract volume. Values indicate mean ± standard deviation