

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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Anatomic location of precentral knob in precentral gyrus as measured by the brain navigator system

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Objectives

The precentral knob of the precentral gyrus, the original site for hand somatotopy in the corticospinal tract, is an important target for neuromodulation. However, little is known in terms of the detailed anatomical location of the precentral knob that can be easily used clinically.

Methods

We determined of the locations of target and surface points in twenty normal subjects using a brain navigator system. The target point was defined as the precentral knob and the surface point as the area of the scalp in the vertical direction from the target point. The horizontal and vertical distances from the Cz through the point maker were then measured by placing a marked 1cm grid on each subject's head.

Results

In the horizontal direction, the average distance to the location of the precentral knob was 30.75mm in the right hemisphere, 31.25mm in the left hemisphere, and 31.00mm in both hemispheres. In the vertical direction, the distance to the location of the precentral knob was -12.75mm in the right hemisphere, -14.50mm in the left hemisphere, and -13.62mm in both hemispheres.

Conclusions

We determined the detailed anatomical location of the precentral knob in normal subjects using a brain navigator system. Our data and methodology can easily be used clinically for neuromodulation.

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Table 1. Distance to the surface point from the precentral knob

	Right hemisphere	Left hemisphere	Total
Horizontal (mm)			
Precentral knob	30.75 (± 5.44)	31.25 (± 5.59)	31.00 (± 5.45)
<i>p</i> - value	0.37	0.77	0.38
Vertical (mm)			
Precentral knob	-12.75 (± 6.58)	-14.50 (± 4.83)	-13.62 (± 5.77)
<i>p</i> - value	0.00	0.00	0.00

Indicate means (\pm standard deviations).

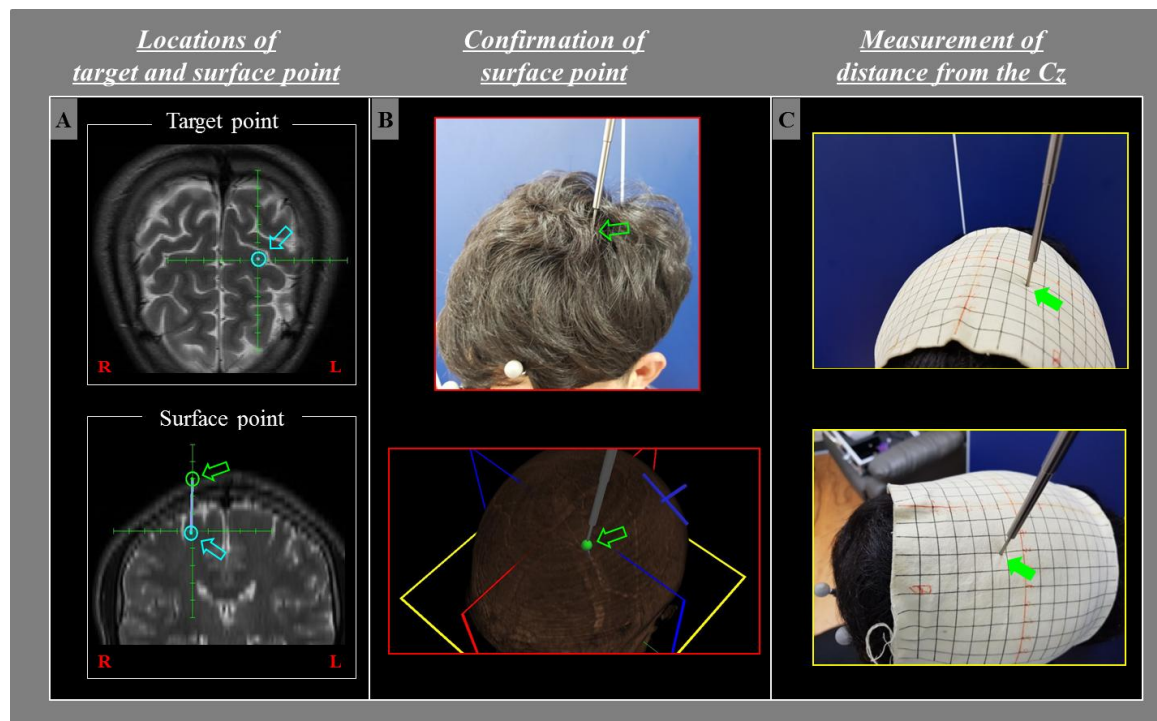


Figure1. (A) Determination of location of target point (the precentral knob – omega-shaped area in the precentral knob in front of the precentral sulcus; blue arrow) and surface point (the area of the scalp in the vertical direction from the target point; green arrow). (B) Confirmation of the surface point on the scalp and in the brain navigator system by the point maker. (C) Measurement of the horizontal and vertical distances from the Cz to the surface point (green arrow) using the brain navigator point maker by placing a 1cm grid on the subject's head.