研究業績　英文表記

和文	
表題	運動イメージ課題中のイメージ鮮明度および脳活動を向上させるためのビデオ映像提示方法の検討
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英文	
Title	A method for using video presentation to increase the vividness and activity of cortical regions during motor imagery tasks
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Abstract	In recent years, mental practice (MP) using laterally inverted video of a subject's non-paralyzed upper limb to improve the vividness of presented motor imagery (MI) has been shown to be effective for improving the function of a paralyzed upper limb. However, no studies have yet assessed the activity of cortical regions engaged during MI task performance using inverse video presentations and neurophysiological indicators. This study sought to investigate changes in MI vividness and hemodynamic changes in the cerebral cortex during MI performance under the following three conditions in near-infrared spectroscopy: MI-only without inverse video presentation (MI-only), MI with action observation (AO) of an inverse video presentation of another person's hand (AO + MI (other hand)), and MI with AO of an inverse video presentation of a participant's own hand (AO + MI (own hand)). Participants included 66 healthy right-handed adults (41 men and 25 women; mean age: 26.3 ± 4.3 years). There were 23 patients in the MI-only group (mean age: 26.4 ± 4.1 years), 20 in the AO + MI (other hand) group (mean age: 25.9 ± 5.0 years), and 23 in the AO + MI (own hand) group (mean age: 26.9 ± 4.1 years). The MI task involved transferring 1 cm × 1 cm blocks from one plate to another, once per second, using chopsticks held in the non-dominant hand. Based on a visual analog scale (VAS), MI vividness was significantly higher in the AO + MI (own hand) group than in the MI-only group and the AO + MI (other hand) group. A main effect of condition was revealed in terms of MI vividness, as well as regions of interest (ROIs) in certain brain areas associated with motor processing. The data suggest that inverse video presentation of a person's own hand enhances the MI vividness and increases the activity of motor-related cortical areas during MI. This study was approved by the Institutional Ethics Committee of Nagasaki University Graduate School of Biomedical and Health Sciences (approval No. 18121303) on January 18, 2019.
keyword	action observation, cortical activity, inverse video presentation, mental practice, motor imagery, motor palsy, paralysis, recovery, rehabilitation; stroke

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