Immediate effects of mirror therapy on spatial neglect

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Objectives.– A few studies have suggested an effect of mirror therapy on hemiparesis after stroke (CVA) [1]. Recent work has also suggested a long-term effect on spatial neglect [2]. Our objective was to evaluate the immediate effect of a single session of mirror therapy on manifestations of spatial neglect.

Patients and methods.– We included eight subjects (30-75 years) with spatial neglect (according to Negligence Evaluation Battery) secondary to a unilateral stroke of the right hemisphere. Mirror therapy sessions lasted for 30 minutes and used the classic mirror therapy device [1] with a cache on the right upper limb. Control therapy used the same device and reproduced the visual anchor to the drawing from memory of the supermarket plan. For each patient, two parameters were measured: a lateralization index (LI) of the objects taking, and the drawing from memory of the supermarket plan. For each patient, experimental procedure included two pre-tests, ten PA sessions during 2 weeks, and four post-tests immediately, 3, 7 and 30 days after PA.

The results show a significant after-effect directed toward the left side associated to significant improvement of neglect and significant modification of LI for objects in the virtual reality task after PA. Moreover, a significant improvement of the drawing from memory of virtual supermarket plan is observed, suggesting an enhancement of the visuo-graphic, topographic and semantic aspects of spatial representation after PA.

Further reading

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Study of pop-out effect in neglect patients

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Background.– Hemineglect is a syndrome characterized by disturbances of space exploration to the left hemifield with behavior of deviation to the right. Due to the diversity of its manifestations and brain lesion responsible for symptoms, pathophysiology, diagnostic and therapeutic still remain problematic. We have implemented on a computer interface the bells cancellation test (Gauthier 1999).

Objective.– Establish the effects of striking targets (global or predominantly on the left) with color and/or movement on visual exploration according to each condition. Immediate efficiency seems to be present but only partially. This result supports the hypothesis of an effect of mirror therapy on spatial neglect [2]. The effect appears to be independent of the attentional component. The induced effect may result from right hemisphere activation in relation to the visual illusion of upper left limb movement.

References

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