

DOI 10.26386/obrela.v1i0.29

Special Issue on Neuropsychology, from the Founding Conference of the Hellenic Neuropsychological Society, 9-10 April, 2016, Athens, Greece.

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Lecture

Preoperative cognitive rehabilitation of a patient with refractory left medial temporal lobe epilepsy to determine the candidacy for surgery

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Abstract

Objective: The purpose of this study was to explore the effectiveness of a neurorehabilitation intervention to determine the suitability for surgery in a patient suffering from left medial temporal lobe epilepsy (MTLE) and hippocampal sclerosis (HS). The rehabilitation program was aimed at amplifying cognitive resources and improving memory functioning, particularly in the non-dominant healthy hemisphere. **Method:** Inspired by the functional reserve model and the right hemisphere's verbal processing potential, a preoperative neurorehabilitation program was considered, targeting global cognitive and metacognitive enhancement with an emphasis on memory function of the right temporal lobe, in particular the functional upgrade of the healthy right hippocampus and related structures to assist memory after surgery. **Results:** After the six-month rehabilitation program, the patient once again underwent IAT. This time his right hemisphere memory functioning yielded a borderline score, allowing us to consider surgery. Immediately after surgery, the patient was seizure free and did not show any clinically significant memory impairment. At six months postsurgery he had, to a large extent, preserved memory rehabilitation gains. **Conclusions:** Preoperative rehabilitation interventions aiming at enhancing cognition in general and memory of the healthy hemisphere in particular, may contribute to a positive memory outcome after left selective amygdalohippocampectomy.