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Postoperative improvement of episodic memory in children and adolescents with temporo-sylvian cysts: A study using virtual reality and autobiographical events

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Episodic memory (EM), the ability to recall experienced events ('what') in their spatial ('where') and temporal ('when') context is important in learning new information and in daily life functioning. Temporo-sylvian cysts (TSC) are quite common lesions of the arachnoid and potentially affect EM due to their localization. Some studies have revealed post-operative improvement of cognitive functioning in pediatric TSC patients, yet the functioning of EM in these patients has not been systematically studied. Our aim was to assess EM with ecological (virtual reality (VR), controlled but close to daily life environment and autobiographical events) and standard tests before and after decompression of a TSC in children. In a group of 65 patients aged from 5 to 16 years, 18 have been re-assessed one year after surgery. Results revealed post-operative improvements regarding navigation time as well as recall of simple and detailed factual information on the VR EM test. The ability to recall an autobiographical event also improved, whereas no changes occurred on standard tests. This suggests that TSC decompression in children and adolescents has a beneficial influence on EM functioning in a more ecological context. Considering the importance of EM functioning in school and daily life it is therefore seems that ecological assessments of EM via VR and autobiographical memories could help guide decisions about the patients' treatment since they complete standard tests.

Biography

Maria Abram has completed her PhD at Paris Descartes University where she currently teaches Cognitive Psychology to undergraduate students. She is specialized in Neuropsychology. She also collaborates with Necker Children's Hospital (Department of Pediatric Neurosurgery) in Paris, assessing episodic memory in young patients with temporo-sylvian cysts and with focal brain lesions. She has published two articles in international scientific journals and is currently writing three more. She is currently in the search of Post-doctoral position in North America.

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