

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

Guest Editors: Mary H. Kosmidis, Athanasia Liozidou, Lambros Messinis, Alexandra Thanellou, Ioannis Zalonis

Lecture

Specialization in neurosurgical-neuropsychology

Giorgos Stranjalis & Evangelia Liouta

*Dept of Neurosurgery, University of Athens, Evangelismos Hospital, Hellenic Neurosurgical Research Center
"Professor P. Kokkalis"*

Abstract

Neurosurgery is the surgical specialty concerned with the treatment of Nervous System and Spine diseases. These disorders are often difficult to diagnose and treat. This surgical treatment should not result in any additional damage, side effects and disability. In addition to neurosurgery these diseases are managed by a multidisciplinary team. The Department of Neurosurgery of the University of Athens, at Evangelismos Hospital, has a long history in the treatment of tumors, trauma, vascular disease, hydrocephalus, chronic pain, drug-resistant neurological syndromes, and spinal disorders. Since 2012 Neuropsychology is the part of a multidisciplinary team in: (1) preoperative evaluation and surgical planning, (2) awake surgery in selected patients, and (3) postoperative follow up.

(1) Preoperative neuropsychological assessment includes the following: a) clinical assessment of cognitive functions, b) evaluation of dominant hemisphere, c) participation in functional neuroimaging, and d) transfer of neuroimaging data to neuronavigation system. This process aims in protecting the eloquent brain areas during the operation, as well as to predict postoperative neurological status.

(2) During awake surgery the role of the Neuropsychologist is to objectively evaluate neurocognitive as well as motor/sensory functions with the appropriate testing and monitor for deficits that may result from electric cortical/subcortical stimulation. This procedure guides the neurosurgeon to excise the pathological lesion and leave intact the healthy neurological tissue.

(3) After surgical treatment patients are re-examined. Pre- and postoperative neurocognitive statuses are compared and combined with the neuroimaging data. The results are stored in a database for clinical as well as educational and research purposes.