Sergio Kosac, J Neurol Disord 2018, Volume 6
DOI: 10.4172/2329-6895-C4-034

Neurophysiological monitoring during epilepsy surgeries

Sergio Kosac
University of Buenos Aires, Argentina

Epilepsy surgery originates in the early 20th century since the discovery of functional areas, by Broca, Hitzog, and many others. Jackson's findings who described the irritative cortical foci, and proposed their excision; until the experiences of W Penfield, who generated a more complete functional cortical map, up to that time, specifying motor and sensitive/sensorial areas allowed surgical techniques to advance significantly. Nowadays, surgeries for reduction or elimination of cortical irritative foci, are carried out in cases of cortical dysplasia, cortical tumors, vascular malformations, etc. Although more and more accurate and satisfactory surgical techniques were developed, in some cases it is imperative to preserve functional areas, whenever they are near or over the surgical area. To prevent or minimize damages to such functional areas, it is necessary to perform intraoperative neurophysiologic techniques. In cases of epilepsy surgeries, there are two ways: one is the electroencephalogram over the cortex, named electrocardiogram. The other one is the Neurophysiologic Intraoperative Monitoring (IOM). To perform this method, we can decide, depending on the type of pathology or its localion, which technique will be applied. One technique is to locate motor and sensory areas over the dura: it is possible through a technique that applies somatosensory evoked potentials, recorded with a strip of electrodes. Through this technique, we can map out cortex areas, allowing the surgeon to know, before opening the dura, where those functional areas are. Another technique is, once motor and sensory areas are located, to find some functions over and into the motor area more accurately. This is made with a stimulator given to the surgeon, connected to the neurophysiologist's equipment, through which, we can map out areas, i.e., hand area, leg area, etc., applying the stimulator over some points, and the neurophysiologist delivering stimuli to activate cortical motor neurons, and recording signals in the corresponding muscles. Those techniques will be showed, with case presentations, graphics and videos. The goal is to show to the audience some techniques that could improve life quality for those patients who undergo epilepsy surgeries with some risk of functional damage.

Biography

Sergio Kosac is a Neurophysiologist at Austral University Hospital, working intensively in the Intraoperative Monitoring field. He is Head of practical works in Neurology at University of Buenos Aires.

coolser_4@yahoo.com

Notes: