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Poster Presentation

Invasive Recording and Nursing Care

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Abstract

Intracranial surgery is performed for tumors, trauma, congenital abnormalities, vascular diseases (aneurysms and vascular malformations) trigeminal neuralgia, and other disorders of the brain that are amenable to surgical treatment. Using the latest technology, state of the art image guided surgery is used in many cases to accurately locate lesions within the brain. In patients with refractory epilepsy, whose EEG-monitoring reveals focal epilepsy, after doing Brain MRI, SPECT, PET and neuropsychological assessment, the lesion, ictal onset zone and its function will be determined in one specific area and based on these findings lesion will be resected by surgery. If the specific ictal onset zone is not identifiable with Intracranial Recording, EEG-monitoring will be applied to determine the specific ictal onset zone during ictal phase (mostly in temporal lobes) before the surgery.

Indications are described as:

Confirmation of an anatomo-electro-clinical hypothesis, Attempt to record nodes in the epileptic network, takes into account the near propagation of ictal onset, and Implantation of electrodes also takes into account surgical resective margins of the given hypothesis.

Possible Markers of epileptogenicity are:

Still investigational: high frequency oscillations, single pulse stimulation induced late responses and microelectrode recording of micro seizures.

Intracranial recording has specific pattern, significant limitations, costs and risks. Implanted electrodes necessarily record from a small volume of cortex. Restrict the number of implanted electrodes to as few as possible without compromising the ability to detect the zone of seizure onset with sufficient precision to use in the determination of the epileptogenic area for subsequent surgery.

Keywords: Surgery, pattern, Cortex, EEG.

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