

The value of gamma probe in the detection of epileptogenic focus

O potencial do gamaprobe na detecção do foco epileptogênico

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Even though epilepsy is known since the antiquity and, despite the great developments in the diagnosis and clinical treatment of this disease, there are still cases of refractory epilepsy to conventional antiepileptic drugs. In such cases of refractory epilepsy when an epileptogenic focus has been defined, surgery may be indicated for focus resection, if it is not located in an eloquent area. Imaging methods are routinely utilized to detect lesions that may be the cause for refractory epilepsy. In such patients, the identification of an epileptogenic focus represents a decisive factor for the indication or not of a surgery for management of the seizure. The association of structural imaging methods, such as magnetic resonance imaging, with functional methods such as SPECT (ictal and interictal) and PET plays a significant role in the identification of such lesions, allowing that many cases previously diagnosed as cryptogenic epilepsy have the disease origin defined and surgery indicated^(1,2). Additionally, electroencephalography and video-encephalography data are essential to confirm the presence of abnormal electrical activity coinciding with the focal lesions identified at the imaging studies.

The utilization of nuclear medicine with a gamma probe (portable gamma ray detector) is known as radioguided surgery. Such procedure modality already has its use recognized in oncology, and has changed the approach to several types of malignant neoplasms (breast, melanoma, colorectal cancer), neuroendocrine neoplasms and parathyroid surgery. The gamma probe allows the real-time obtention of essential information for the surgeon regarding the disease location and its extent besides information about margin resection⁽³⁾.

In neurosurgery, the utilization of such a method is more recent^(4,5). As the radiotracer remains concentrated in the abnormal area for several hours (up to ten hours), it may be intravenously injected before the surgical procedure and, during the surgery, the gamma probe detects the abnormal activity. The study developed by Carneiro Filho et al.⁽⁶⁾ and published in the present issue of **Radiologia Brasileira** discusses the utilization of gamma probe as an aid to define the epileptogenic focus in two patients. In both cases, the gamma probe has appropriately demonstrated the epileptogenic focus as compared with electrocorticography, as well as it was useful in the management of the epileptogenic area in one of the patients. During such type of surgery for epilepsy, particularly extratemporal epilepsy, the use of electrocorticography is recognized to confirm the location of the region to be resected since, in some cases, the epileptogenic area may be larger than the structural abnormality. In spite of the preliminary nature of such study, with only two patients, the article highlights the possibility of the gamma probe providing data in agreement with those provided by electrocorticography, thus allowing greater reliability for the neurosurgeon in an ideal resection in such cases, with the consequential management of the epileptic seizures and significant improvement in the patient's quality of life.

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