

Anatomic, functional and postprocessing MRI techniques in the evaluation of epileptic patients

D. A. Herrera^{1,2}, S. A. Vargas^{1,2}, J. E. Duque^{1,2}, and A. B. Dublin³

¹Universidad de Antioquia, Medellin, Antioquia, Colombia, ²CediMed, Colombia, ³University of California Davis Medical Center, United States

Title

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Purpose

To review the utility of MR imaging in the evaluation of epileptic patients by using conventional and advanced techniques

Outline of Content

Recent advances in research of human epilepsies have resulted in improvements in the localization of both the epileptogenic tissue and functionally important areas. In this Educational E-Poster, we review the imaging findings covering a wide neuropathology spectrum of patients with epileptogenic disorders including hippocampal sclerosis, malformative glioneuronal lesions, tumors, vascular lesions, inflammatory and infectious diseases as well as ulegiric/gliotic and nonspecific lesions. We discuss the utility of conventional anatomic techniques and fMRI in surgical planning. We also present some examples of post-processing based modalities (such as Voxel Based Morphometry and curvilinear reformatting) which are useful in the multimodal evaluation of epileptic patients.

Summary

Recent developments in structural neuroimaging as well as advanced functional and postprocessing based techniques have led to a more precise diagnosis of the pathologic substrate of epilepsy, which is essential for accurate classification, determination of prognosis, and presurgical evaluation in intractable cases.