Combined EEG and video monitoring may clarify the clinical seizure pattern reported by history; it may confirm or invalidate its localizing significance. It may also reveal unsuspected multiple clinical seizure patterns which may or may not correspond to multiple areas of seizure onset. The localizing evidence derived from interictal EEG abnormality provides valuable additional diagnostic information, identifying a likely area of seizure onset. Automatic spike recognition may improve the quality of the information provided by interictal activity by providing otherwise unavailable quantitative information. The main application of EEG monitoring is for detecting the region of seizure onset. This is important for the identification of seizure type, the differentiation between epileptic and non-epileptic seizures and the preoperative localization of seizure onset. Reliable localization in patients with partial seizures depends upon demonstration of a precise focal or regional onset of the ictal EEG changes occurring prior to or simultaneously with clinical seizure manifestations. Use of intracranial electrodes is indicated when monitoring with extracranial electrodes has not provided unequivocal localization of seizure onset. Automatic seizure recognition and phase analysis may again increase the yield of monitoring in localizing epileptogenic foci [1].

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Quesney LF, Gloor P. Localization of epileptic foci. Electroencephalogr Clin Neurophysiol Suppl. 1985;37:165-200. PubMed PMID: 3924559.