



The Comparison of Epileptic Focus Localization on the Basis of EEG Mapping of Interictal and Ictal Discharges in Frontal Lobe Epilepsy

Piotr Walerjan, Joanna Jędrzejczak

Neurology and Epileptology Department, CMKP,
Czerniakowska 231, Warsaw, Poland
medisoft@plusnet.pl

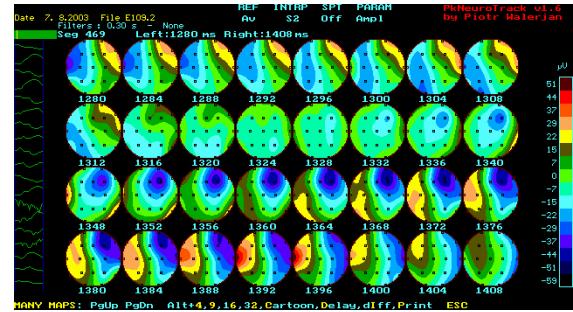
Introduction. Reliable, electrophysiological diagnostics of epileptic seizures is based on the analysis of EEG discharges that start the seizure. However, as it is difficult to record epileptic seizure it is hard to perform the diagnostics. It is desirable to evaluate the diagnostic value of interictal discharges that are very commonly seen during routine EEG examinations.

Purpose. To compare the electrophysiological localization of ictal and interictal epileptic discharges to localize the epileptic focus in frontal lobe epilepsy cases.

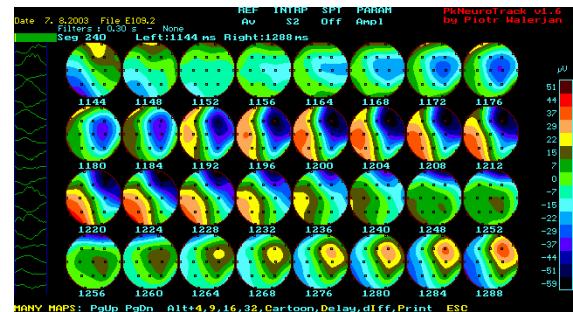
Material and method. We investigated data of 99 patients of Neurology and Epileptology Department, CMKP with drug resistant epilepsy. The routine EEG was performed for each patient. We recorded video-EEG during at least 24 hours, until at least one seizure was recorded. If there was no seizure registered, the patient was excluded from the current study. The 50 successful recordings were classified as frontal lobe seizures, 25 of them were digitized and included in the current study. First ictal discharges and interictal discharges were analyzed by our own EEG mapping software PkNeuroTrack, using mapping of amplitude in the time domain. The localization and propagation of discharges were compared and their conformity was evaluated.

Results. Good conformity of localization of interictal and ictal discharges was found in 5 (20%) cases, in additional 17 (68%) cases the propagation of the discharges was nearly the same. In 1 (4%) only the lateralization of the lobe of discharge was confirmed, and in 2 (8%) cases the localization and propagation was completely different.

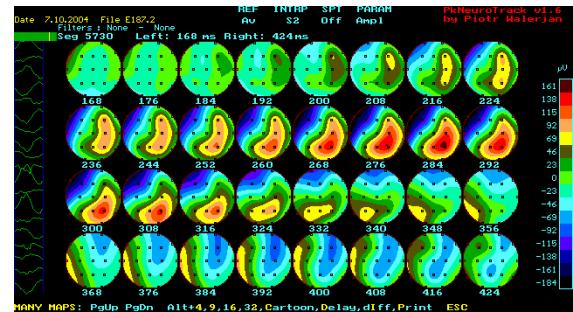
Conclusions. The mapping of interictal discharges may be a valuable, additional tool used to confirm epileptic focus localization in frontal lobe epileptic cases. However, it must be analyzed with great care as the only one electrophysiological localization tool as it may give misleading results.



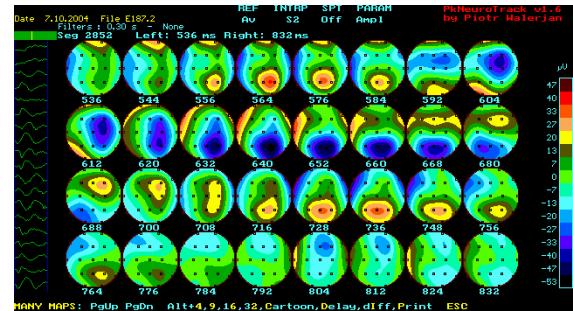
Patient #1: Ictal discharge



Patient #1: Interictal discharge



Patient #2: Ictal discharge



Patient #2: Interictal discharge