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Periodic lateralized epileptiform discharges – case report

Periodic lateralized epileptiform discharges (PLEDs) are defined as repetitive periodic, focal, or hemispheric epileptiform discharges presenting as spikes, spike and waves, polyspikes, sharp waves that occur every 1 to 2 seconds. PLEDs were observed in patients with different etiologies of brain injury but stroke is their main etiology. Other lesions of brain damage including brain tumors, multiple sclerosis, meningoencephalitis, hematomas, craniocerebral trauma, Creutzfeld-Jacob disease have been also observed. About half of patients with different stroke lesions and PLEDs develop seizures, mainly partial motor seizures (2). Raroque et al. (5) revealed that patients with PLEDs show consistent localization of lesions in gray matter. It was also observed that PLEDs abnormalities in electroencephalography (EEG) are present on the side of brain lesions and that structural lesions play a major role in PLEDs etiology. Metabolic abnormalities might be an additional etiological factor for PLEDs.

CASE REPORT

An eighty-one-year-old patient with arterial hypertension and atrial fibrillation was admitted to the Department of Neurology because disturbances of consciousness, vomiting and convulsions occurred. Medical history data indicated an ischemic stroke of the right hemisphere two years ago with neurological deficit presenting as mild hemiparesis on the left side. After admission to the hospital the neurological examination showed severe hemiparesis with Babinski sign on the left side. Computed tomography (CT) which was done immediately after the neurological signs onset showed lesion after ischemic stroke of the right hemisphere in temporo-parietal region. EEG revealed paroxysmal alterations PLEDs presenting as repetitive periodic hemispheric epileptiform discharges; sharp waves alpha and slow waves delta–theta concerning the right hemisphere. Basal activity between hemispheres was different. EEG showed irregular activity of theta–alpha waves 7–10 Hz to 30–40 μ V with a series of fast beta activity in the left hemisphere and irregular, low activity theta–alpha waves 7–10–12 Hz to 20–40 μ V with a series of fast beta activity in the right hemisphere.

During the hospitalization period the clinical state of the patient has improved; disturbances of consciousness were retired but severe hemiparesis on the left side was still present. Biochemical blood examination showed metabolic disturbances presenting as an increase in urea and creatinine concentration and changes in electrolytes level (increased potassium and sodium level). On the 5th day of the patient hospitalization status epilepticus of motor focal seizures on the left side occurred. Fever occurred and loss of consciousness was observed again. In spite of treatment of status epilepticus and metabolic disturbances the patient died.



Fig. 1. PLEDs in EEG

DISCUSSION

Data from the literature showed that patients with ischemic stroke and PLEDs are old aged and have vascular risk factors, parieto-occipital localization of ischemic stroke and association with transient ischemic attacks. PLEDs are often associated with depression or loss of consciousness and partial motor epileptic seizures (3). The connection between PLEDs and epileptic seizures is still unclear. There was observed a great risk of poststroke epilepsy in patients, which have diffuse retardation of basal activity or PLEDs in EEG after ischemic stroke and at least one epileptic seizure. According to Baykan et al. (1) PLEDs are correlated with recent seizures, and EEG alterations may be a result of an increase in neuronal excitability caused by different etiology of brain injury. Jaitly et al. (4) evaluated cortical function after clinical status epilepticus (SE) using EEG monitoring and observed that PLEDs were highly correlated with mortality of patients after SE.

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SUMMARY

Periodic lateralized epileptiform discharges (PLEDs) are rare electroencephalographic (EEG) abnormalities observed in patients with different etiologies of brain injury. There was presented a patient with ischemic stroke and concomitant status epilepticus of focal motor seizures in whom the EEG showed PLEDs.

Periodyczne jednostronne wyładowania padaczkopodobne – opis przypadku

Periodyczne jednostronne wyładowania padaczkopodobne (PLEDs) są rzadką nieprawidłowością elektroencefalograficzną, obserwowaną u pacjentów z uszkodzeniem mózgu o różnej etiologii. Przedstawiono pacjentkę z udarem niedokrwiennym mózgu i współistniejącym stanem padaczkowym ogniskowych napadów ruchowych, u której badanie EEG wykazało obecność PLEDs.