

Particularities of cerebral arteriovenous malformations manifesting with epileptic syndrome.

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Cerebral arteriovenous malformations (AVM) may be asymptomatic for a long time. Clinically affected individuals most often present with epileptic seizures (40%-70%) which impact their domestic, social, and professional lives. Objectives — To investigate features of AVM, which manifesting with epileptic seizures, to identify the factors affecting their relief. Methods — Conducted a comprehensive analysis 204 patients with AVM treated in the Dnipropetrovsk regional hospital from 2014 to 2018. AVM manifested with seizures in 136 patients (66,7%). Results — 45% malformations were right sided and 65% were left sided. There were no significant associations of AVM site with the occurrence and types of seizures. AVM had supratentorial location in 77,4% cases. Supratentorial AVM significantly more often ($P = 0.0001$) presented with new-onset seizures: only 4,9% of patients with infratentorial malformations as compared to 61,8% patients with supratentorial AVM had seizures. Also the incidence of seizure presentation was significantly higher in cortical than noncortical AVM (44,1% vs. 17,6%, $P = 0.0001$). The location of AVM in different regions of the brain caused a significant variety types of epileptic seizures. Among the cortical locations, occipital lobe lesions had the lowest rate of seizure presentation (11,1%, $P = 0.001$), temporal lobe lesions - the highest (40,0%, $P = 0.001$). There was a higher proportion of generalized seizures for AVM localized in frontal lobe and for infratentorial AVM compared with all other sites ($P = 0.001$). Temporal lobe lesions were significantly less likely to be associated with generalized seizures compared with those in the other sites ($P = 0.01$). Two patients with infratentorial lesions had absences, one - mioclonic seizures. Previous hemorrhage ($P = 0.0001$) and cortical location of AVM ($P = 0.0001$) were independent predictors of drug treatment failure. Conclusions - The risk of epileptic seizures manifestation, type of seizures and treatment results depend on characteristics of AVM and their location in the brain.