

Cerebral cavernous malformations: epidemiological, clinical and diagnostic imaging aspects

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ABSTRACT

Introduction: Cerebral cavernous malformations (CCMs) are one of the most common vascular malformations of the central nervous system. Symptoms of CCMs are not typical; the disease can be asymptomatic or be manifested by a wide range of neurological symptoms.

Purpose: To evaluate chosen epidemiologic and clinical issues as well as advanced imaging diagnostics of CCMs in computed tomography and magnetic resonance imaging.

Materials and methods: The study was based on retrospective analysis of CT and MRI examinations from the 5 years period. The analysis covered 61 persons, 29 males, and 32 females. The CCMs were diagnosed based on MRI examination in 43 patients and CT in 13 patients.

Results: The rate of CCMs occurrence in own material was 0.2%. Single lesions were present in 90.2%, while multiple in 9.8% of cases. Supratentorial CCMs were observed in 77% of

cases whereas subtentorial in 23%. Mean size of CCMs in the supra- and subtentorial area equaled 10.6±6.3 and 15.1±5.8 mm, respectively ($p < 0.05$). Clinical symptoms occurred in 65.8% of patients, most frequently in patients with CCMs above 5 mm or with subtentorial lesions. All CCMs were hyperdense in CT images, with calcifications in 13.1%. In MRI, malformations showed diverse intensity of the central part with peripheral low-intensity rim of hemosiderine deposits in T2-weighted images.

Conclusions: The clinical symptoms occur in most cases of CCMs. These patients require periodic follow-up MRI examinations, specifically those with haemorrhagic incidents or epileptic seizures, with large size or subtentorial CCMs.

Keywords: CNS vascular malformations; cerebral cavernous malformation; computed tomography; magnetic resonance imaging

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