Vasospasm Due to Arteriovenous Malformation-Associated Hemorrhage

Although it is well characterized in aneurysmal subarachnoid hemorrhage, vasospasm is exceedingly rare in ruptured intracranial arteriovenous malformation. Subsequently, this complication is poorly characterized with regard to delayed cerebral ischemia (DCI).

Cerebral vasospasm (CVS) after a Ruptured Intracranial Arteriovenous Malformation is rarely reported.

A total of 160 patients with ruptured Intracranial Arteriovenous Malformation were admitted to the Department of Neurosurgery University Hospital Frankfurt, from 2002 to 2018. The frequency of cerebral vasospasm after AVM hemorrhage and the impact of AVM-associated aneurysms were evaluated. They compared different bleeding patterns, such as intracerebral hemorrhage (ICH), subarachnoid hemorrhage (SAH) or a combination of both (ICH + SAH) and evaluated predictive variables for outcome in last follow-up.

A total of 62 (39%) patients had AAA, mostly located prenidal (75.8%). AVMs with ruptured aneurysms often resulted in ICH with SAH component (p < 0.001). Eighty-two patients (51%) presented a SAH component, and CVS occurred in 6 patients (7.3%), mostly due to a ruptured infratentorial AVM (p < 0.03). Infratentorial location and the amount of SAH component (p < 0.001) predicted the incidence of CVS significantly. Cerebral infarction was significantly associated with CVS (p < 0.02).

SAH component and infratentorial location of ruptured AVMs may harbor a higher risk for CVS. Follow-up with angiographic imaging should be considered in patients with infratentorial AVM hemorrhage and delayed neurologic deterioration to rule out CVS ¹⁾.

Dinc N, Won SY, Eibach M, Quick-Weller J, Konczalla J, Berkefeld J, Seifert V, Marquardt G. Cerebral Vasospasm Due to Arteriovenous Malformation-Associated Hemorrhage: Impact of Bleeding Source and Pattern. Cerebrovasc Dis. 2019 May 8:1-6. doi: 10.1159/000500596. [Epub ahead of print] PubMed PMID: 31067536.

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