Cerebellar hemorrhage from Cerebellar Arteriovenous Malformation

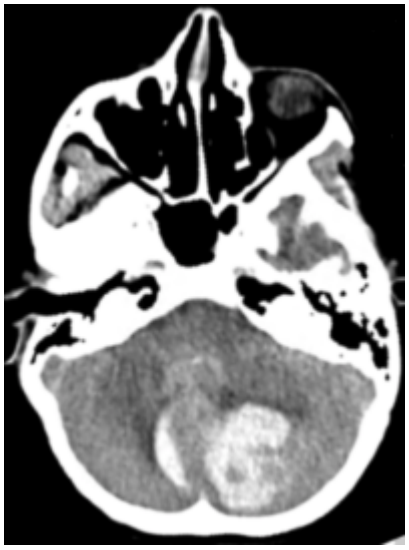
Patients with cerebellar arteriovenous malformations are significantly more likely to present with cerebellar hemorrhage than patients with cerebral arteriovenous malformation (three quarters vs. one half). Hemorrhagic presentation results in more neurological deficits both preoperatively and at late follow-up [1) 2) 3) 4)].

The explanation for increased bleeding from cerebellar AVMs is unclear [5) 6)].

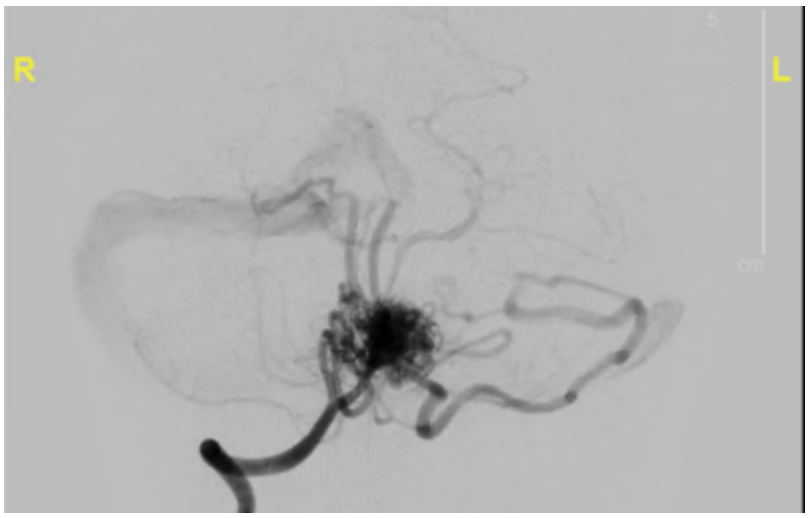
Younger age, single feeding artery, and exclusively deep venous drainage were independent risk factors for hemorrhagic presentation. Eloquent location, associated aneurysm, and presence of intraventricular hemorrhage may predict severe immediate post hemorrhage outcome [7)]

Case reports

11-year-old patient being previously asymptomatic at school, he began a sudden onset severe headache with subsequent Environmental Disconnection and falling to the ground with self-limited movements of one leg. Upon the arrival of the ambulance, they find the patient with a poor response (response to painful stimuli) and an altered level of consciousness. Presents later, several vomiting.



Cerebellar hemorrhage centered in the midline and slightly lateralized to the left of approximately 38x56x16 mm (diameters AP x T x CC). It presents an opening to the ventricular system identifying hematic content in the fourth ventricle, Cerebral aqueduct, third ventricle, lateral ventricles and cisterna magna. It causes displacement of the adjacent cerebellar parenchyma with the collapse of the cerebellar sulci. He presents with peripheral vasogenic edema without being able to clearly identify underlying space-occupying lesions. Mild dilatation of the temporal horns, suggesting early signs of acute hydrocephalus.



Compact nidus pial posterior fossa arteriovenous malformation at midline level, approximately 2.5 cm x 1.5 cm. Arterial supplies originate from both posterior inferior cerebellar artery and venous drainage through two collectors to the right and left transverse sinus.

Supine position with the head in a neutral position. Right precoronal frontal incision and trephine. Durotomy. Insertion of a Codman Bactiseal-type ventricular catheter up to approximately 5-6cm with low-pressure hematic CSF outflow. Tunneling and fixation of the drainage with silk suture, checking its permeability. Incision closure by planes (subcutaneous with absorbable and skin with absorbable monofilament)

Second stage: SUBOCCIPITAL CRANIECTOMY-POSTERIOR FOSAL DECOMPRESSION: Prone position on U-shaped padding with the head fixed with Mayfield. Linear medial incision from inion to spinosa C1. Subperiosteal dissection of the cervical musculature to expose the occipital scale and arch of C1. Suboccipital craniectomy with extension to the limit with the transverse sinus. Durotomy in “Y” with exposure of the cerebellar hemispheres, without objectifying active bleeding or hematoma outcropping to the cortex, except for a slight subarachnoid hemorrhage adjacent to the right cerebellar fissure. Enlargement of the bilateral star-shaped durotomy. Apposition of subdural and epidural spongostan, without closure of the dura mater. Closure of the incision by planes (fascia and subcutaneous with absorbable and skin with absorbable monofilament)

A case of infant fistula-type AVM that developed into a nidus-type AVM 15 years later. This is the first report to document morphologic changes of AVM over time in 1 case.

The present case suggests the possibility that AVM morphology may change with age and is important when considering the history of AVM [8)].

The first documented case of delayed hemorrhage associated with a cerebellar AVM 5 years after linear accelerator-based radiation in a man with 31 years despite apparent angiographic obliteration.

Intracranial hemorrhage after radiosurgery in digital subtraction angiography-confirmed obliterated AVMs is rare, with limited understanding of risk factors, appropriate preventative management, and mechanisms of occurrence. This case serves to demonstrate the need for greater awareness of this rare complication, as well as the need for appropriate surveillance and management strategies [9)].

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