Teaching NeuroImages: Spontaneous asymptomatic occlusion of a cerebral arteriovenous malformation

Adam Strzelczyk, MD
Ulrich Sure, MD
Felix Rosenow, MD

Address correspondence and reprint requests to Dr. Adam Strzelczyk, Department of Neurology and Interdisciplinary Epilepsy Center, Philipps-University Marburg, Rudolf-Bultmann-Str. 8, 35039 Marburg, Germany
adam.strzelczyk@med.uni-marburg.de

A 34-year-old man with refractory epilepsy due to an arteriovenous malformation (AVM) of the right postcentral gyrus (figure, A) was evaluated for epilepsy surgery.[1] After study of the size, location, and depth of the lesion, we decided to defer resection, radiosurgery, and embolization because of concern that intervention would result in neurologic deficits. Invasive video-EEG monitoring (iVEM) was excluded because of the risk of hemorrhage.

Follow-up angiography 4 years later (figure, B) showed complete occlusion of the AVM. He denied transient neurologic symptoms or headaches in the intervening years. MRI revealed no signs of previous bleeding. Cortical resection following iVEM, which was now possible, resulted in worthwhile seizure reduction (Engel Class IIIa).[1] Intraoperatively (figure, C), the AVM was visualized with thrombosed nidus (arrow) and draining vein (interhemispheric sulcus top).

Spontaneous occlusions occur in less than 1.5% of cerebral AVMs. Causes postulated to explain such results include hemodynamic changes due to spontaneous hemorrhage, surgery, the presence of brain tumor, hypercoagulability, atherosclerosis, and thromboembolism from associated aneurysms.[2]

REFERENCES

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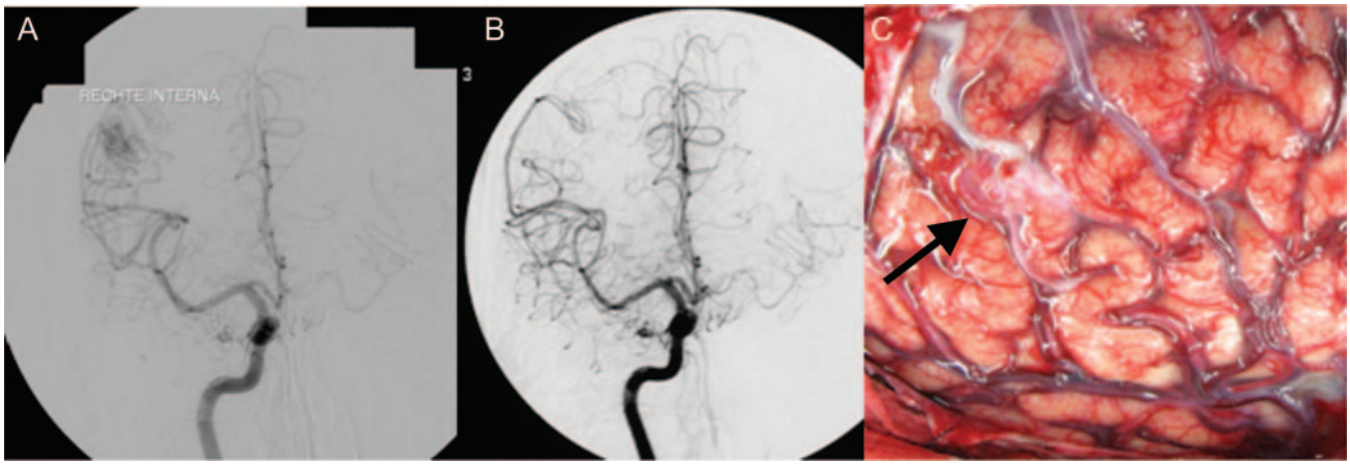
Figure Spontaneous asymptomatic occlusion of arteriovenous malformation (AVM) and intraoperative presentation



(A) Initial right carotid digital subtraction angiography in transverse projection shows an AVM of the middle cerebral artery while (B) current angiography shows a complete occlusion. (C) Intraoperative presentation of the occluded AVM with thrombosed nidus (arrow) and draining vein (interhemispheric sulcus top).

From the Department of Neurology and Interdisciplinary Epilepsy Center (A.S., F.R.), Philipps-University, Marburg; and Department of Neurosurgery (U.S.), University of Duisburg-Essen, Essen, Germany.

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