

Giant serpentine aneurysm

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DESCRIPTION

A 34-year-old man with a history of seizures presented after a generalised seizure. An MRI of the brain and MR angiogram of the brain (figure 1) were performed, demonstrating a partially thrombosed, giant intracranial aneurysm involving the left anterior cerebral artery (ACA).

The patient underwent a diagnostic cerebral angiogram (DCA) revealing a 4 cm serpentine aneurysm of the left ACA (figure 2). A balloon-test occlusion (BTO) was subsequently performed within the left ACA, proximal to the aneurysm; no changes manifested to the patient's clinical

examination. He subsequently underwent a craniotomy with trapping of the giant aneurysm and aneurysmorrhaphy. Intraoperative angiography confirmed obliteration of the aneurysm. Following discharge, he no longer experienced seizures.

Giant serpentine aneurysms (GSAs) are extremely rare, and defined as ≥ 25 mm in size. First described by Segal in 1977, they are characterised by the presence of significant intraluminal thrombus and a snake-like channel between the inflow and outflow of the aneurysm.¹ GSAs are most commonly associated with the middle cerebral artery,² with the literature documenting very few involving the ACA.³

A number of modalities for treatment of GSAs exist: open surgical approaches include proximal and/or distal clipping (sometimes requiring an intracranial bypass), aneurysm resection/reconstruction, or carotid ligation, while endovascular techniques range from parent artery sacrifice to direct embolisation of the GSA with coils or liquid embolic agents. A key aspect in the evaluation of a patient with such pathology involves performing a DCA and BTO to determine whether the parent artery can be sacrificed.

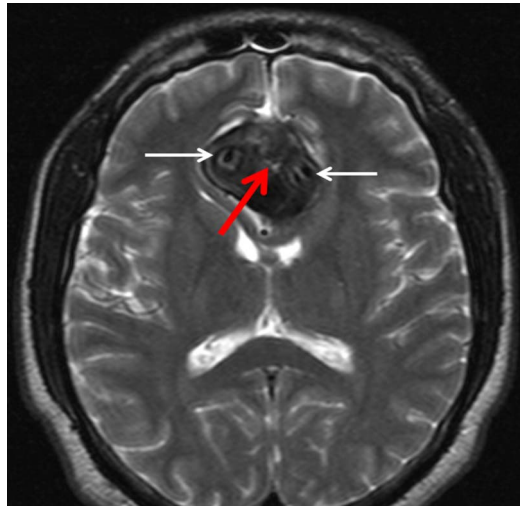


Figure 1 T2 axial MRI of the brain demonstrates a centrally located, large hypointense lesion, consistent with the giant, partially thrombosed A2 segment aneurysm. The bilateral arrows indicate flow voids, representing the channel within the aneurysm itself where blood flow is still present, while the larger red arrow indicates the significant amount of thrombus within the aneurysm.

Learning points

- ▶ Giant serpentine aneurysms are extremely rare.
- ▶ Giant serpentine aneurysms are characterised by the presence of significant intraluminal thrombus and a snake-like channel between the inflow and outflow of the aneurysm.
- ▶ A key aspect in the evaluation of a patient with such pathology involves performing a diagnostic cerebral angiogram and balloon-test occlusion to determine whether the parent artery can be sacrificed.

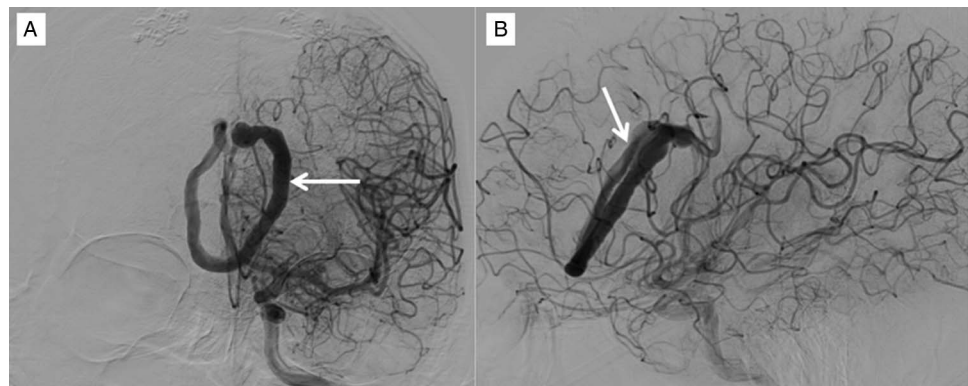


Figure 2 Diagnostic cerebral angiography with anteroposterior (A) and lateral (B) views demonstrating the serpentine channel (white arrows) within the giant left anterior cerebral artery aneurysm. Note that the majority of the aneurysm is thrombosed and only the serpentine channel fills with contrast on the angiogram.



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