

Endovascular Management of Pericallosal Artery Aneurysms: A Case Report

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Abstract

This report describes a classic case of pericallosal artery aneurysm and their Angiographic findings and endovascular management.

Keywords

Pericallosal Artery, Aneurysm, Coiling, Endovascular Management

1. Introduction

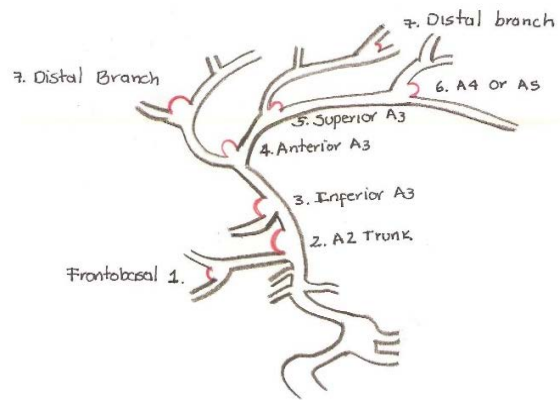
Aneurysms of the distal anterior cerebral artery (DACA), also known as pericallosal aneurysms, are rare and account for about 4% of all intracranial aneurysms [1]-[3]. These have special anatomic features such as subarachnoid hemorrhage especially in the interhemispheric fissure or parenchymal hematomas at the base of the frontal lobes occasionally. The aneurysms of the distal anterior cerebral artery (DACA) are divided into 3 subgroups according to their exact location in relation to the DACA segments and the corpus callosum (**Figure 1(a)** and **Figure 1(b)**) [4] [5].

2. Case Report

A 50-year-old female was admitted to the emergency room per episode of sudden headache overall 1 hour of evolution associated with momentary loss of consciousness, vomiting, seizures and neck stiffness. At the time of admission to our institution a CT Scan was realized in which inter-hemispheric subarachnoid hemorrhage was documented (**Figure 2**). Digital Subtraction Angiography (DSA) showed aneurysm of the left pericallosal artery dome 7 mm, sac 4 mm and neck 3 mm (**Figure 3**). The case was evaluated and the endovascular coil occlusion was decided. Under general anesthesia, right transfemoral approach was realized; Envoy 6F guide catheter was

A2A
1. Frontobasal
2. A2 Trunk
A3A
3. Inferior A3
4. Anterior A3
5. Superior A3
A4A5
6. A4 or A5 Segment
7. Distal Branch

(a)



(b)

Figure 1. (a) DACA Segments; (b) Segments A2 to A5 of the anterior cerebral artery and its relationship with aneurysms.

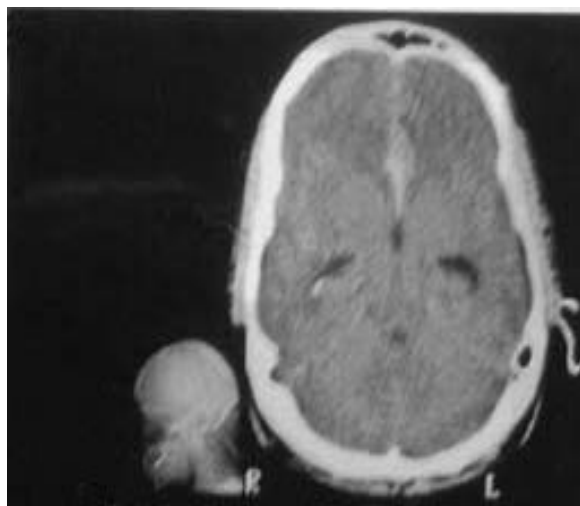


Figure 2. CT Scan of the brain: Subarachnoid hemorrhage predominantly in the Interhemispheric fissure.



Figure 3. Digital subtraction angiography (DSA) in Antero-posterior view and oblique view of Left internal carotid artery. Oblique view with zoom showed aneurysm of the left pericallosal artery.



Figure 4. Microcatheter placement in the dome of the aneurysm using the Road mapping and achieving complete step coils embolization of the aneurysm.

navigated to the left petrous segment of the internal carotid artery. After that, Echelon Micro Catheter 10 (eV3; Neurovascular, Irvine, CA, USA) on a micro guide Silver Speed (Boston Scientific, Fremont, CA, USA) was advanced to the aneurysm in the left pericallosal artery. A Coil Axium one 10 mm × 30 cm (eV3; Neurovascular) was placed in the aneurysm, too. Finally, post-procedure angiography showed complete occlusion of the aneurysm with adequate permeability and distal arterial tree flow (**Figure 4**).

3. Discussion

With a high morbidity and mortality compared with aneurysms in other locations, aneurysms of the distal anterior cerebral artery (DACA) are reported technically complex by surgical procedure, like pterional or interhemispheric approach [6] [7]. In contrast, the endovascular approach is less morbid and ideal at the fork of the marginal pericallosal and callosal artery. Nevertheless, the more distal aneurysm was, more unstable microcatheter and micro wire will, since this way is associated with the tortuous route.

4. Conclusion

We believe that the endovascular technique is a useful option in the treatment of this type of patients. For example, in this case, we only spent 3 hours from the onset of symptoms of the female patient until the end of endovascular treatment with a favorable post-operative evolution, without complications.

Disclosure

The author declares that he has no conflict of interest.

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