Pericallosal artery aneurysm surgery

- Pericallosal artery aneurysms: an evidence-based analysis of clinical presentations, therapeutic approaches, and outcome
- Comparison between ruptured anterior choroidal artery aneurysms and ruptured intracranial aneurysms in other locations in relation to aneurysm dimensions at rupture
- Single-Stage Microsurgical Clipping of Multiple Intracranial Aneurysms in a Patient with Cerebral Atherosclerosis: A Case Report and Review of Surgical Management
- A Rare Case of Enlarged Dissecting Aneurysm Occurring One Year After Conservative Management of Azygos Anterior Cerebral Artery Dissection
- The Modified Trapping Technique for Pericallosal Artery Fusiform Aneurysm
- A Unique and Effective Bypass Technique to Treat Partially Thrombosed Giant Distal Anterior Cerebral Artery Aneurysms in Extremely Narrow Surgical Corridors
- Cavernous Sinus Syndrome in a Polio-Afflicted Patient With Multiple Aneurysms
- Clipping of Anterior Circulation Aneurysms: Operative Instructions and Safety Rules for Young Cerebrovascular Surgeons

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For an interhemispheric approach to distal anterior cerebral artery aneurysms, the patient may be positioned with the head either horizontal or vertical with respect to the floor.

Videos

A 47-year-old female presented with the sudden-onset worst headache of her life followed by dizziness, syncope, transient weakness, and numbness over the left lower extremity. She was neurologically intact, and imaging revealed a right pericallosal artery aneurysm. The patient consented to the procedure. The 2-dimensional Video 1 demonstrates the interhemispheric approach for clipping a pericallosal artery aneurysm. These aneurysms are approached in the distal-to-proximal direction along with the distal anterior cerebral artery. Meticulous dissection avoids rupture without proximal control. We highlight the key surgical steps and microsurgical techniques in approaching these aneurysms. The patient tolerated the operation well with an uneventful postoperative course [1)]

Bonasia and Robert presented the surgical technique to achieve proximal vessel control in pericallosal artery aneurysm clipping using a combined pterional and interhemispheric approach through frontomedial craniotomy. This surgical technique is illustrated by an intraoperative video.

Proximal control for pericallosal artery aneurysm clipping can be challenging. In selected cases, a single craniotomy allows performing two approaches and obtaining a safer proximal control for surgical clipping [2)].

Agarwal and Barrow from the Department of Neurosurgery, Emory University Hospital, Atlanta, Georgia, preferentially place the patient in the supine position with the shoulder elevated and the head turned parallel to the floor with the side of the approach down and the vertex tilted 45° up. In this way, gravity is utilized to allow the right frontal lobe to fall away from the falx, eliminating the need for retraction. To demonstrate the importance of individualizing the choice of position to each patient, they present 2 illustrative cases of DACA aneurysms in which different positioning was selected. One patient presented with a 7-mm bilobed pericallosal artery aneurysm; the aneurysm was approached with the head horizontal with respect to the floor.

The second patient had a 3-mm DACA aneurysm and a right frontal proliferative angiopathy and developmental venous anomaly with evidence of prior hemorrhage. Due to the vascular anomaly, they positioned the head in a vertical position for surgery to clip the aneurysm, which was thought to be the source of hemorrhage. The videos illustrate the approach to DACA aneurysms, which typically exposes the aneurysm before complete exposure of the proximal parent artery is obtained. In one case, the use of both frameless guidance and intraoperative angiography was useful in identifying a small previously ruptured aneurysm [3].

1)
Nagaraj A, Majmundar N, Jumah F, Raju B, Nanda A. Interhemispheric Approach for Clipping of a Pericallosal Artery Aneurysm: 2-Dimensional Operative Video. World Neurosurg. 2022 May;161:90. doi: 10.1016/j.wneu.2022.01.093. Epub 2022 Feb 1. PMID: 35114408.
2)
Bonasia S, Robert T. Retractorless combined pterional and interhemispheric approach to achieve proximal control in pericallosal artery aneurysm: how I do it. Acta Neurochir (Wien). 2021 Oct;163(10):2733-2738. doi: 10.1007/s00701-021-04782-7. Epub 2021 Mar 9. PMID: 33687560.
3)
Agarwal V, Barrow DL. Microsurgical Treatment of Distal Anterior Cerebral Artery Aneurysms: 3-Dimensional Operative Video. Oper Neurosurg (Hagerstown). 2018 May 18. doi: 10.1093/ons/opy136. [Epub ahead of print] PubMed PMID: 29788241.