



Video Abstract

Combined transpetrosal-transtentorial approach with occipital artery – anterior inferior cerebellar artery bypass and aneurysm clipping for a lower basilar artery aneurysm involving anterior inferior cerebellar artery: Two-dimensional operative video

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ABSTRACT

Background: Aneurysms of the lower basilar artery (BA) are rare, accounting for <1% of all intracranial aneurysms. This location has been described as “No man’s land” since it poses a potential challenge for microsurgery. Recently, endovascular treatment has become an alternative option; however, there are some disadvantages regarding the obliteration rate, patency of the parent, and perforating arteries.

Case Description: We present the case of a 69-year-old female with an incidentally found lower BA aneurysm. The imaging examinations revealed a wide-neck aneurysm size of 8.5 mm arising just distal to the vertebrobasilar junction, with involvement of the left anterior inferior cerebellar artery (AICA). After a discussion with the patient, she opted to undergo the surgical treatment. We described the detailed steps of our surgical techniques in performing a combined transpetrosal-transtentorial approach. First, the occipital artery (OA) was harvested. Then, the posterior transpetrosal (retrolabyrinthine) and a far-lateral suboccipital approach were conducted with tentorial sectioning to expose the aneurysm. After AICA was confirmed to arise from the aneurysm sac, the OA-AICA bypass was established to ensure AICA patency, followed by complete aneurysm clipping. The approach provided both the presigmoid and retrosigmoid corridors for bypass and clipping procedures, respectively. The patient tolerated the procedure well. Postoperative imaging examinations showed complete aneurysm obliteration and bypass patency without complications. She was discharged without neurological deficits (modified Rankin Scale 0).

Conclusion: The combined transpetrosal approach is safe and effective for revascularization and clipping procedure for a lower BA aneurysm.

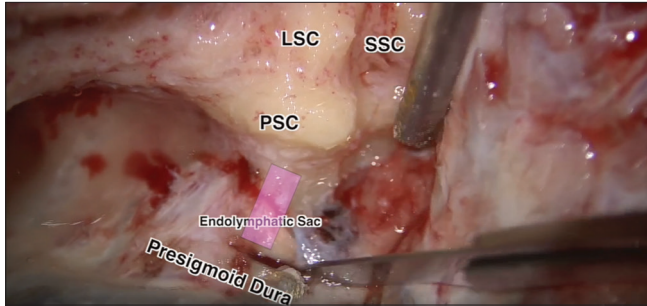
Keywords: Aneurysm, Anterior inferior cerebellar artery, Basilar artery, Occipital artery, Revascularization, Transpetrosal

[Video 1]-Available on:

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Video 1: Combined transpetrosal-transtentorial approach with occipital artery – anterior inferior cerebellar artery bypass and aneurysm clipping for a lower basilar artery aneurysm involving anterior inferior cerebellar artery.

Annotations^[1-8]

00:10 Clinical presentation and neuroimaging
01:10 Rationale of the procedure
02:09 Alternative options
02:41 Risks and benefits of the procedure
02:53 Positioning and key surgical steps
03:05 Operation and OA harvesting
03:40 Suboccipital muscles layer-by-layer dissection
04:46 Translabyrinthine approach
06:38 OA-AICA bypass
07:46 Transcondylar approach
08:31 Aneurysm clipping
09:21 Disease background
09:47 Outcome

Acknowledgement

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Ethical approval

The Institutional Review Board approval is not required.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

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Nil.

Conflicts of interest

There are no conflicts of interest.

Use of artificial intelligence (AI)-assisted technology for manuscript preparation

The authors confirm that there was no use of artificial intelligence (AI)-assisted technology for assisting in the writing or editing of the manuscript and no images were manipulated using AI.

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