

Anterior inferior cerebellar artery aneurysm

Aneurysms of the [anterior inferior cerebellar artery](#) (AICA) are relatively rare among [intracranial aneurysms](#).

They can occur in 1 of 3 regions of the AICA:

- 1) craniocaudal (high or low riding)
- 2) mediolateral-premeatal (proximal)
- 3) meatal-postmeatal (distal).

Clinical

SAH is the most common presentation. The relationship between the aneurysms and the meatus is an important factor for neurological dysfunction ¹⁾.

Diagnosis

3D-CTA and MRA may be considered as diagnostic adjuncts ²⁾.

Treatment

[Anterior inferior cerebellar artery aneurysm treatment](#).

Videos

Far-lateral transcondylar approach for microsurgical trapping of an anterior inferior cerebellar artery aneurysm

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<html><iframe width="560" height="315" src="https://www.youtube.com/embed/JiM3CXVwXnk"
frameborder="0" allowfullscreen></iframe></html>
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Case series

Six cases of anterior inferior cerebellar artery (AICA) aneurysms treated at one center are presented. The six cases of AICA aneurysms were surgically treated. The clinical features, surgical process, complications, and follow-up are demonstrated. Six patients with six AICA aneurysms were presented including one AVM accompanied aneurysm and one giant aneurysm. Five aneurysms had ruptured,

one was unruptured. Five patients presented with subarachnoid hemorrhage (SAH) including two with intraventricular hemorrhaging and one with an intraparenchymal hematoma. One aneurysm was proximal, two were distal, and three were meatal. All cases were treated surgically. Retrosigmoid and far-lateral craniectomy were included. Navigation was accomplished through intraoperative ultrasound and fluorescent angiography. Resection of the aneurysm after clipping was significant. The most common postoperative deficit involved the cranial nerves in four patients. Follow-up was available for all patients for a mean of 68 months. SAH is the most common presentation. The relationship between the aneurysms and the meatus is an important factor for neurological dysfunction. 3D-CTA and MRA may be considered as diagnostic adjuncts. Several special surgical techniques used in our cases are worth noting. Endovascular therapy for AICA aneurysms is in the process of development and should be reserved for special cases ³⁾.

Between 1997 and 2009, EVT was attempted for 9 AICA aneurysms. Six patients presented with SAH, and 3 aneurysms were found incidentally. The location of the aneurysms was the proximal AICA in 7 and the distal AICA in 2. Five aneurysms originated from an AICA-PICA variant. Clinical outcomes and procedural complications were evaluated, and angiography was performed 6, 12, and 24 months after embolization to confirm recanalization of the coiled aneurysm.

EVT was technically successful in 7 patients (78%). Surgical trapping was performed in 1 patient after failure of EVT, and another aneurysm occluded spontaneously, along with the parent artery during EVT. In 7 patients, the AICAs had good patency on postoperative angiography. Stent-assisted coiling was performed in 3 patients. Follow-up angiographies were performed in 7 patients and showed no evidence of recanalization or progressive occlusion with further thrombosis except in 1 patient. There was no evidence of aneurysm rupture during the follow-up period, and 8 patients were able to perform all usual activities (mRS score, 0-1).

EVT may provide a feasible and safe option as an alternative, though a microsurgical option is initially considered for the management of AICA aneurysms. Further follow-up and more experience are also necessary ⁴⁾.

Case reports

A 77-year-old woman presented with an extremely rare exclusively intra-meatal [anterior inferior cerebellar artery aneurysm](#) manifesting as subarachnoid hemorrhage. The aneurysm was located at a non-branching site of its meatal loop, deeply inside the internal auditory canal. The ipsilateral posterior inferior cerebellar artery was hypoplastic and the affected AICA supplied a wide vascular territory in the right cerebellum. The patient underwent microsurgical trapping of the distal AICA aneurysm in the acute stage. Collateral back flow to the parent artery was poor, so right occipital artery (OA)-AICA anastomosis was performed prior to aneurysm trapping. The postoperative course was uneventful, and magnetic resonance imaging after surgery did not demonstrate any ischemic change. Postoperative angiography showed complete disappearance of the AICA aneurysm and the apparently patent OA-AICA bypass. She did not suffer neurological deficit except for right incomplete hearing disturbance, and postoperative Single-photon emission computed tomography demonstrated absence of hemodynamic compromise in the cerebellum. OA-AICA anastomosis with aneurysm trapping could be the optimal surgical management of the AICA aneurysm located exclusively inside the internal auditory canal, especially if the parent artery supplies a wide vascular territory ⁵⁾.

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Sato S, Adachi H, Imamura H, Sakai N, Tani S, Narumi O, Sakai C, Arimura K, Morimoto T, Shibata T, Agawa Y, Shimizu K, Kikuchi H. [A Case of Stent-Assisted Coil Embolization for Ruptured Anterior Inferior Cerebellar Aneurysm after Iatrogenic Vertebral Arteriovenous Fistula]. No Shinkei Geka. 2017 Nov;45(11):997-1002. doi: 10.11477/mf.1436203635. Japanese. PubMed PMID: 29172206 ⁶⁾.

References

1) , 2) , 3)

Li X, Zhang D, Zhao J. Anterior inferior cerebellar artery aneurysms: six cases and a review of the literature. Neurosurg Rev. 2012 Jan;35(1):111-9; discussion 119. doi: 10.1007/s10143-011-0338-1. Epub 2011 Jul 12. Review. PubMed PMID: 21748288.

4)

Suh SH, Kim DJ, Kim DI, Kim BM, Chung TS, Hong CK, Jung JY. Management of anterior inferior cerebellar artery aneurysms: endovascular treatment and clinical outcome. AJNR Am J Neuroradiol. 2011 Jan;32(1):159-64. doi: 10.3174/ajnr.A2360. Epub 2010 Nov 4. PubMed PMID: 21051509.

5)

Fujimura M, Inoue T, Shimizu H, Tominaga T. Occipital artery-anterior inferior cerebellar artery bypass with microsurgical trapping for exclusively intra-meatal anterior inferior cerebellar artery aneurysm manifesting as subarachnoid hemorrhage. Case report. Neurol Med Chir (Tokyo). 2012;52(6):435-8. doi: 10.2176/nmc.52.435. PMID: 22729077.

6)

Sato S, Adachi H, Imamura H, Sakai N, Tani S, Narumi O, Sakai C, Arimura K, Morimoto T, Shibata T, Agawa Y, Shimizu K, Kikuchi H. [A Case of Stent-Assisted Coil Embolization for Ruptured Anterior Inferior Cerebellar Aneurysm after Iatrogenic Vertebral Arteriovenous Fistula]. No Shinkei Geka. 2017 Nov;45(11):997-1002. doi: 10.11477/mf.1436203635. Japanese. PubMed PMID: 29172206.

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