



# Anterior Inferior Cerebellar Artery vascular loop in Internal Auditory Canal - Clinical presentation, operative technique and surgical outcomes

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## Introduction

Anterior inferior cerebellar artery (AICA) vascular loops extending into internal auditory canal (IAC) are rare source of audio-vestibular symptoms and hemifacial spasms. There has been a controversy surrounding the clinical significance of AICA vascular loops into IAC. Here, we present our experience in 4 patients who presented with symptoms of cranial nerve 7 and 8 compression from AICA vascular loops.

## Methods

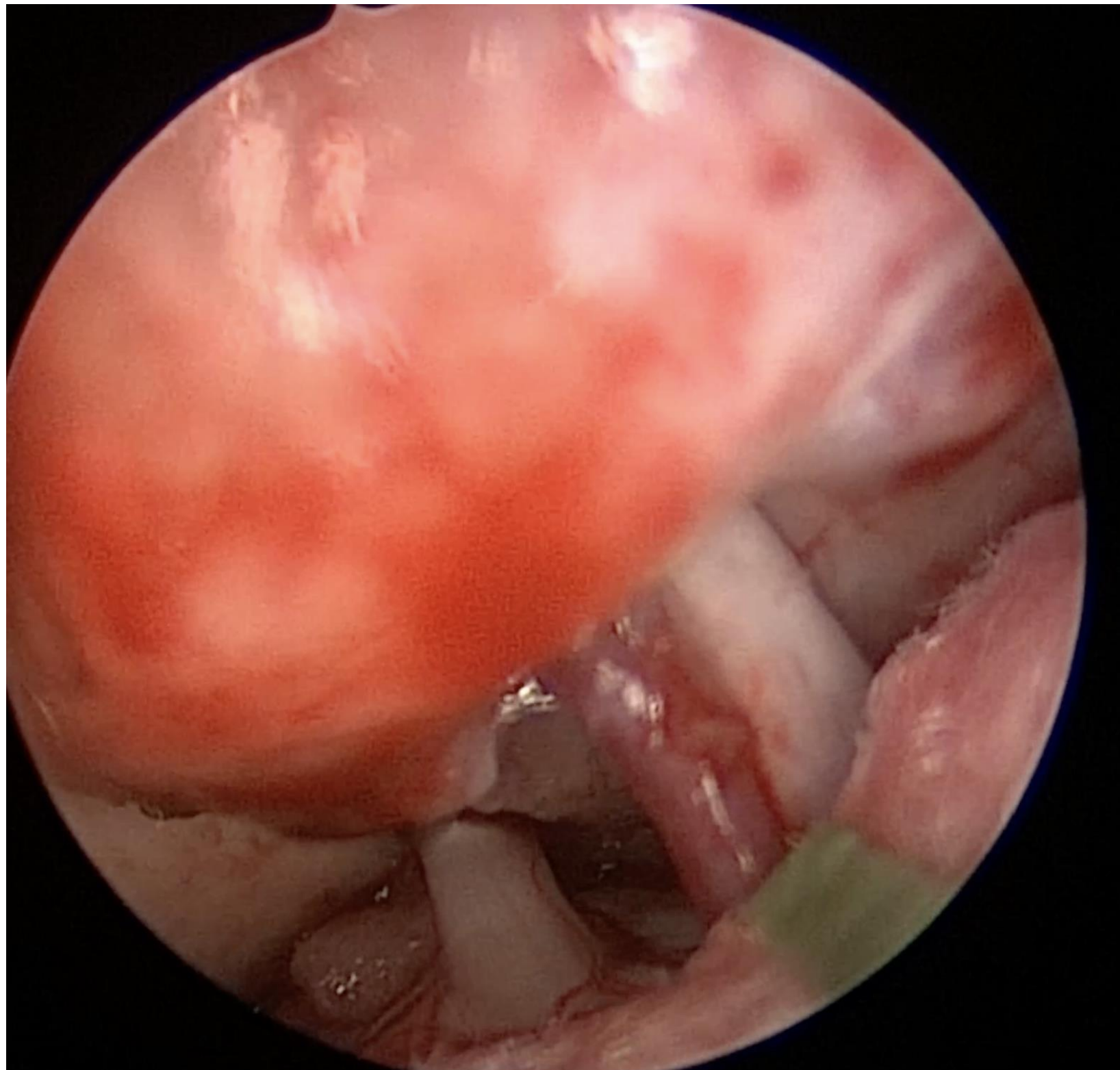
A retrospective analysis of cases performed in last 6 months since starting first post-fellowship faculty position were reviewed and patients were identified with AICA vascular loops extending into IAC. Clinical presentations and surgical outcomes were reviewed. AICA vascular loops were graded based on previously established grades: 1) grade 1 – lying only in cerebellopontine angle but not entering IAC, 2) grade II – entering IAC but less than 50%, 3) grade III – extending more than 50% into the IAC.

## Results

4 patients were identified with AICA vascular loops extending into IAC. 75% were female, aged ranging from 28 – 77yrs. 75% had grade II loops. Most common symptoms were tinnitus and vertigo which were present in all patients, followed by hemifacial spasm (HFS) in 75% and hearing loss in 25%. All patients had failed medical management and referred by our neurology colleagues. All patients underwent endoscopic assisted retrosigmoid craniotomy for microvascular decompression. AICA loops were identified ventral to the 7/8 complex. Arachnoid dissection was performed. Loops were gently retracted out of IAC and secured with Teflon pledges. The loops are tethered through the labyrinthine artery originating at the tip of the loop. The loops tend to recoil back into the IAC and should carefully be monitored with Valsalva maneuvers to ensure they remain in place. All patient noted complete resolution of tinnitus and vertigo, HFS resolved in 1 (33%) and improved in (67%). Most common complication was transient hearing loss (50%). Hearing loss happened in a delayed fashion in 3-4 weeks and started noting improvement over 2 months.

Sex	Age	Grade	Tinnitus	Hearing loss	Vertigo	Hemifacial spasm (HFS)	Outcomes	Complications
F	54	III	Yes	No	Yes	Yes	Complete resolution	None
M	77	II	Yes	Yes	Yes	Yes	HFS improved, resolution of tinnitus and vertigo	Transient hearing worsening
F	64	II	Yes	No	Yes	No	Complete resolution	Transient hearing loss
F	28	II	Yes	No	Yes	Yes	Improvement in HFS, resolution of tinnitus and vertigo	None

## Results



## Conclusions

AICA loops extending into IAC are rare causes of audio-vestibular symptoms and HFS. These patients should be carefully evaluated in conjunction with neurology and radiographic findings closely reviewed. Neurophysiological monitoring should be used in all cases. Vascular loops should be carefully handled, making sure not avulse labyrinthine artery originating from the vascular loop. These patients respond very favorably to surgical management.

## Contact

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