Anterior inferior cerebellar artery branches



Typically, the anterior inferior cerebellar artery arises from the junction at the middle and the lower thirds of the basilar artery, courses along the pons and the middle cerebellar peduncle, to which it gives a few important perforating branches.

The branches of the AICA that supply the inferior upper part of the olive arise 3~18 mm distal to the origin of AICA, whose occlusion could lead to a lateral pontine syndrome.

Near the facial-vestibulocochlear complex, the AICA bifurcates into two major branches, called the rostrolateral and caudomedial branch. The rostrolateral branch courses toward the internal auditory canal close to the seventh and the eighth cranial nerve complex and gives off the labyrinthine artery also called the internal auditory artery (IAA). The caudomedial branch courses medially close to the pons, to which it sends a few perforators, and terminates in cerebellar branches. The AICA also sends a few branches to the choroid plexus protruding from the foramen of Luschka.

The hemispheric branches from the AICA frequently have anastomoses with the superior cerebellar artery and posterior inferior cerebellar artery.

Anterior inferior cerebellar artery commonly bifurcates into the superior and inferior trunk at the pontomedullary junction near where the facial and vestibulocochlear nerves exit the brain stem.

The anterior inferior cerebellar artery (AICA) has variable branches producing vascular loops that can compress the facial cranial nerve (CN) VII and vestibulocochlear (CN VIII) nerves. AICA compression of the facial-vestibulocochlear nerve complex can lead to various clinical presentations, including hemifacial spasm (HFS), tinnitus, and hemiataxia. The formation of arterial loops inside or outside of the internal auditory meatus (IAM) can cause abutment or compression of CN VII and CN VIII. Twenty-five (50 sides) fresh adult cadavers underwent dissection of the cerebellopontine angle in the supine position. In regard to relationships between the AICA and the nerves of the facial/vestibulocochlear

complex, 33 arteries (66%) traveled in a plane between the facial/nervus intermedius nerves and the cochlear and vestibular nerves. Five arteries (10%) traveled below the CN VII/VIII complex, six (12%) traveled posterior to the nerve complex, four (8%) formed a semi-circle around the upper half of the nerve complex, and two (4%) traveled between and partially separated the nervus intermedius and facial nerve proper. Our study found that the majority of AICA will travel in a plane between the facial/nervus intermedius nerves and the cochlear and vestibular nerves. Although the relationship between the AICA and porus acusticus and AICA and the nerves of the CN VII/VIII complex are variable, based on our findings, some themes exist. Surgeons should consider these with approaches to the cerebellopontine angle¹⁾.

1)

Alonso F, Kassem MW, Iwanaga J, Oskouian RJ, Loukas M, Demerdash A, Tubbs RS. Anterior Inferior Cerebellar Arteries Juxtaposed with the Internal Acoustic Meatus and Their Relationship to the Cranial Nerve VII/VIII Complex. Cureus. 2017 Aug 16;9(8):e1570. doi: 10.7759/cureus.1570. PubMed PMID: 29057182; PubMed Central PMCID: PMC5642811.

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