



2025

KARNATAKA RADIOLOGY EDUCATION PROGRAM

CEREBRAL Arterial ANATOMY OF THE BRAIN- 4

Posterior circulation [vertebrobasilar]

- o posterior cerebral artery (PCA)
- o posterior choroidal arteries
- o basilar artery
- o superior cerebellar artery (SCA)
- o anterior inferior cerebellar artery (AICA)
- o posterior inferior cerebellar artery (PICA)

Posterior cerebral artery- PCA

The posterior cerebral arteries are the terminal branches of the basilar artery and supply the occipital lobes and posteromedial temporal lobes.

origin: terminal branches of the basilar artery

course: from basilar towards occiput

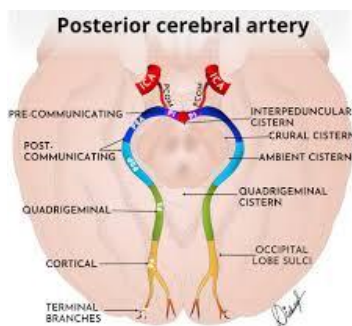
main branches:

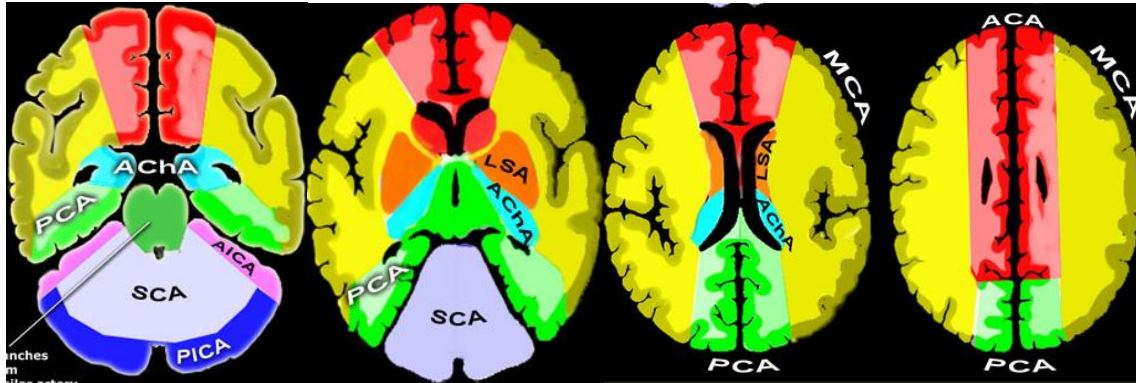
posterior communicating artery (not really a branch, see embryology below)

medial and lateral posterior choroidal arteries

calcarine artery

supply: occipital lobes and posteromedial temporal lobes





The posterior cerebral artery is divided into four (or sometimes five) segments 8,11. It is worth noting that the definition of the distal segments (P3 and P4) differs between Terminologia Anatomica and routine clinical neuroradiological/neurosurgical articles. This article will only cover the latter.

P1: pre-communicating segment originates at the termination of the basilar artery terminates to the posterior communicating artery (PCOM), within the interpeduncular cistern origin of the artery of Percheron variant (supplying the bilateral medial thalami)

P2: post-communicating segment from the PCOM around the midbrain

P2A (anterior): sub-segment courses through the crural cistern

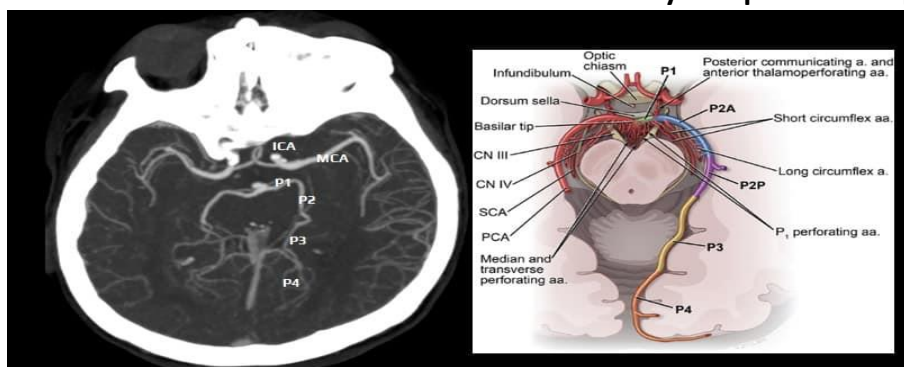
P2P (posterior or ambient): sub-segment courses through the ambient cistern

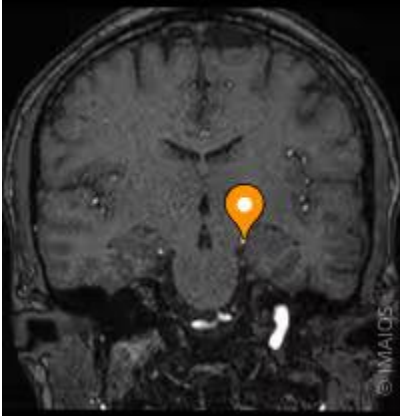
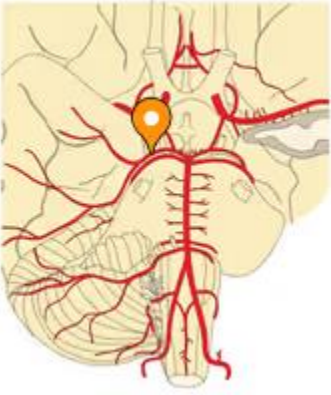
terminates at the origin of the lateral occipital artery/lateral temporal trunk, as it enters the quadrigeminal cistern

P3: quadrigeminal segment courses posteromedially through the quadrigeminal cistern terminates as it enters the sulci of the occipital lobe

P4: cortical segment within the sulci of the occipital lobe e.g. calcarine artery, within the calcarine fissure

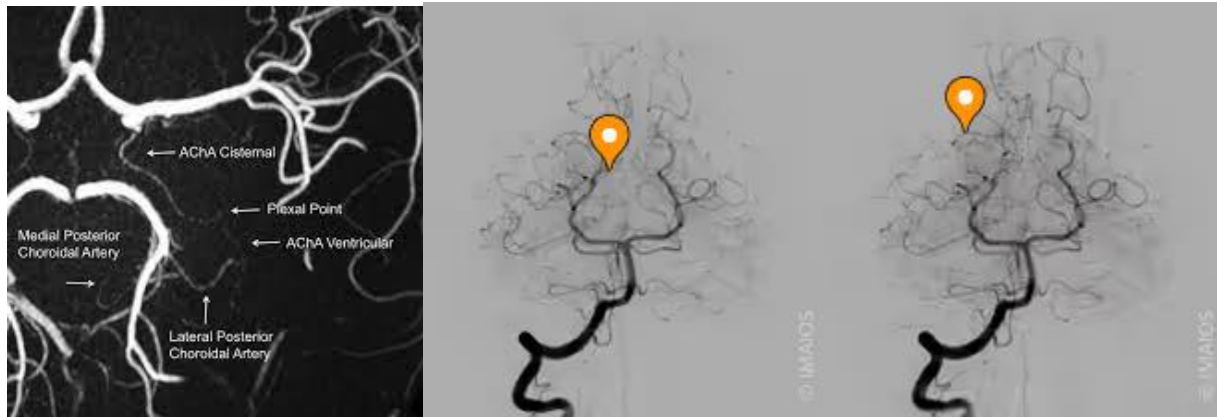
P5: terminal branches terminal branches of the calcarine artery and parieto-occipital artery.





Posterior choroidal artery

Posterior choroidal arteries (PChOAs) represent the ventricular branches of the posterior cerebral artery (PCA) which are directed to the lateral and third ventricles to supply their choroid plexus and walls.



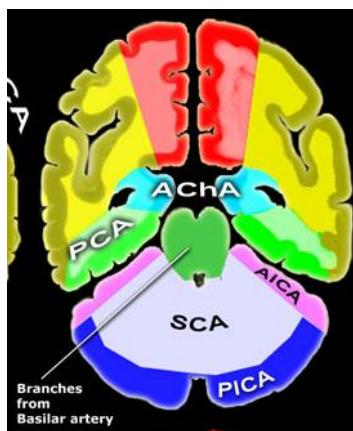
Basilar Artery

Both side vertebral arteries joins and forms basilar artery , Terminated as Posterior cerebral arteries (PCA)

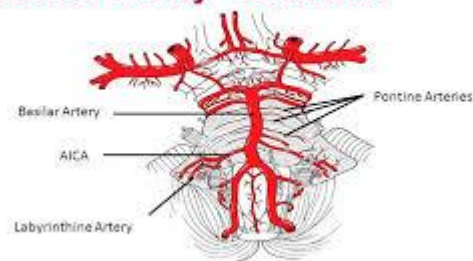
It ascends superiorly in the basilar sulcus ventral to the pons and divides at the ponto-mesencephalic junction into the paired posterior cerebral arteries close to the pituitary stalk.

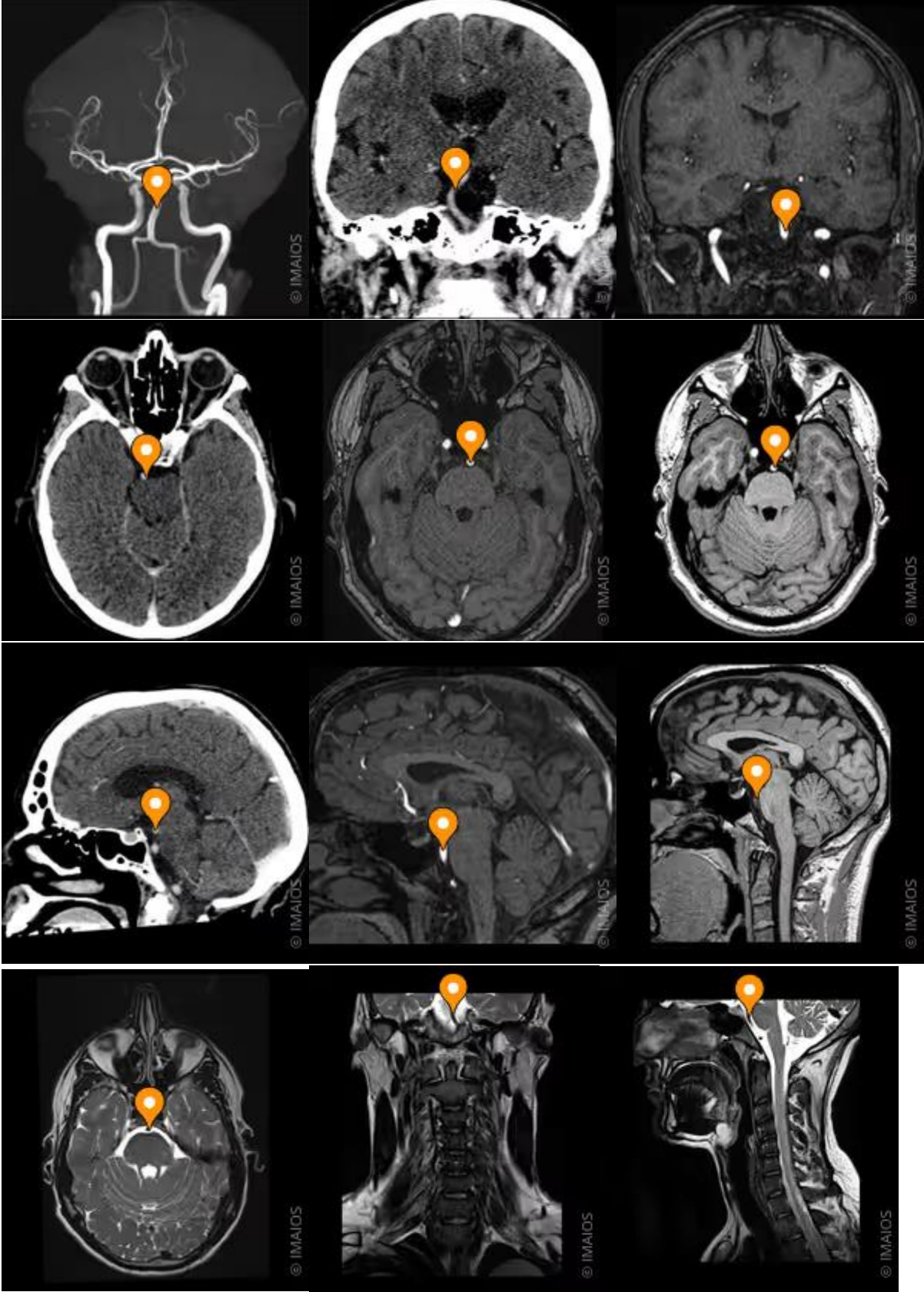
Branches :

1. Anterior inferior cerebellar arteries
2. Pontine br's
3. Labrynthine arteries
4. Superior cerebellar arteries
5. Posterior cerebral arteries



Basilar Artery - Branches

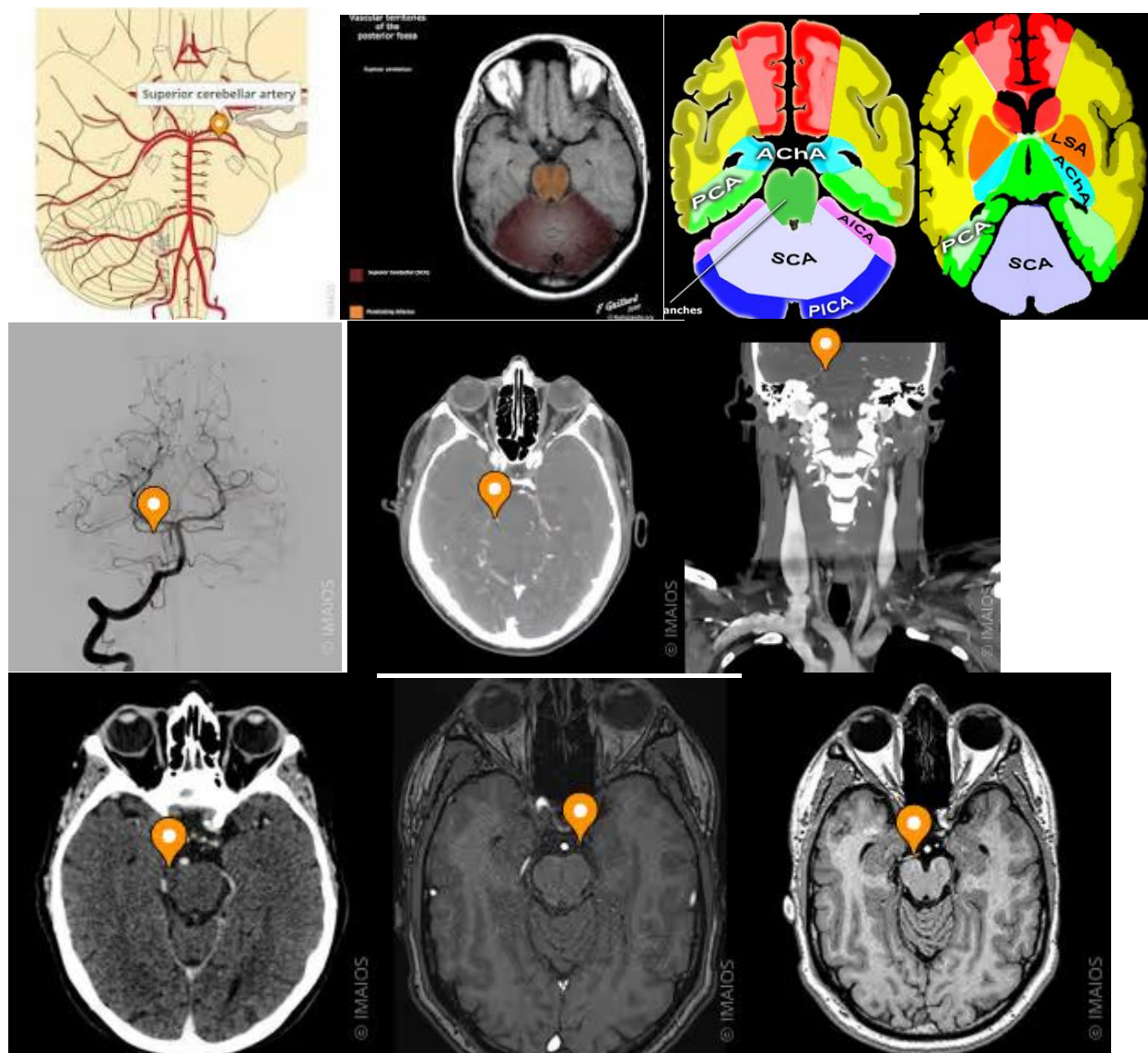


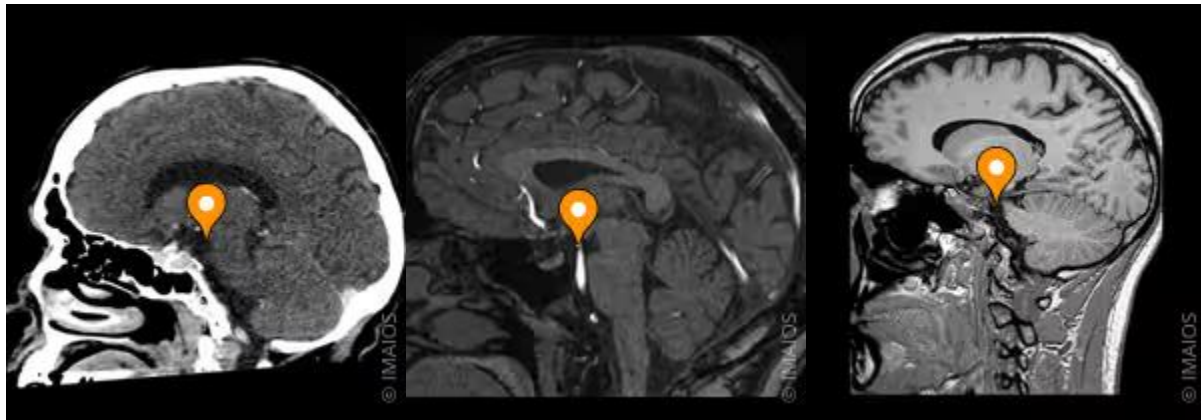
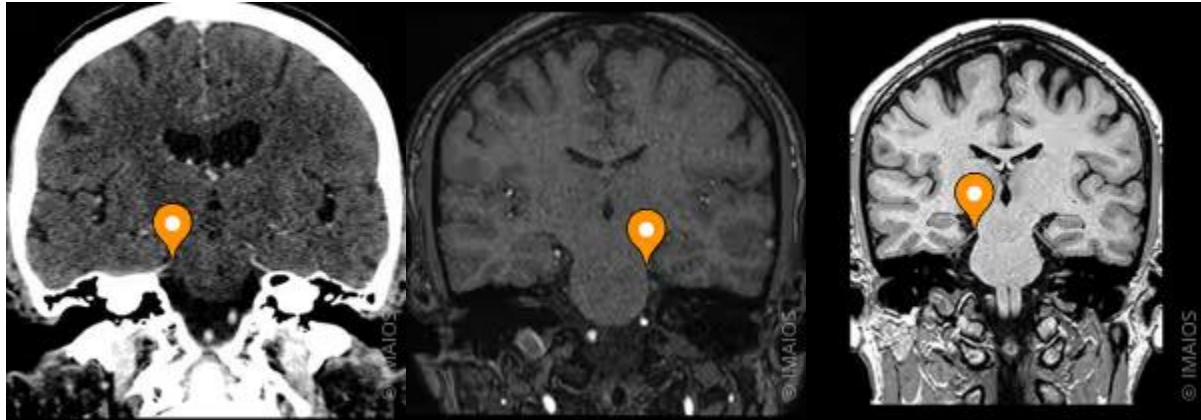


Superior cerebellar artery (SCA)

The superior cerebellar artery (SCA) arises from the distal basilar artery, just below the posterior cerebral artery (PCA) and typically supplies:

- whole superior surface of the cerebellar hemispheres down to the great horizontal fissure
- superior vermis
- dentate nucleus
- most of the cerebellar white matter
- parts of the midbrain
- superior cerebellar peduncle
- middle cerebellar peduncle



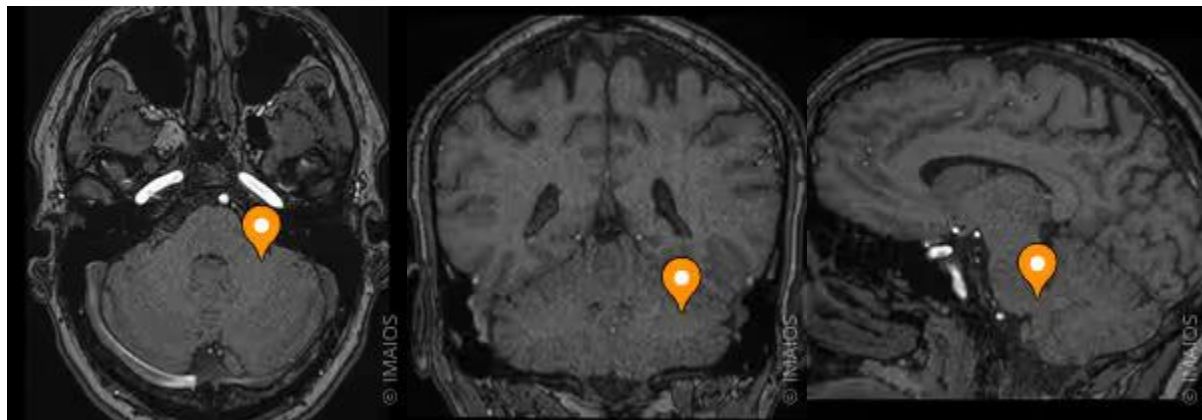
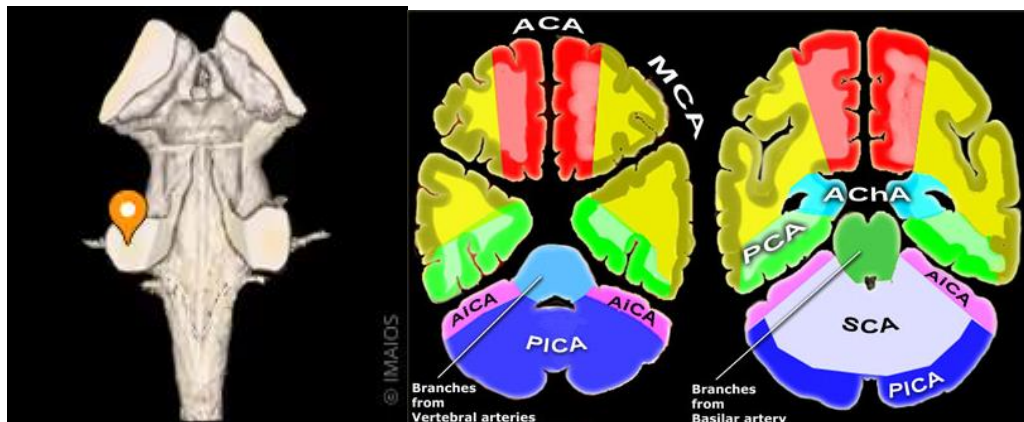


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Ref : <https://www.imaios.com/en> , <https://radiologyassistant.nl/> ,
<https://radiopaedia.org/articles/posterior-inferior-cerebellar-artery>

Anterior inferior cerebellar artery - AICA

The anterior inferior cerebellar artery (AICA) arises from the midportion of the basilar artery bilaterally and supplies the anterior inferior portion of the cerebellum (Schuenke et al., 2010). Both the PICAs and AICAs supply distinct regions of the medulla and pons.



Posterior inferior cerebellar artery (PICA)

The posterior inferior cerebellar artery (PICA) is the largest branch of the vertebral artery. It is one of the three main arteries that supply blood to the cerebellum, a part of the brain.

The PICA is a paired artery that originates from the vertebral artery V4 segment.

