

FACTA ANATOMICA



भारत 2023 INDIA

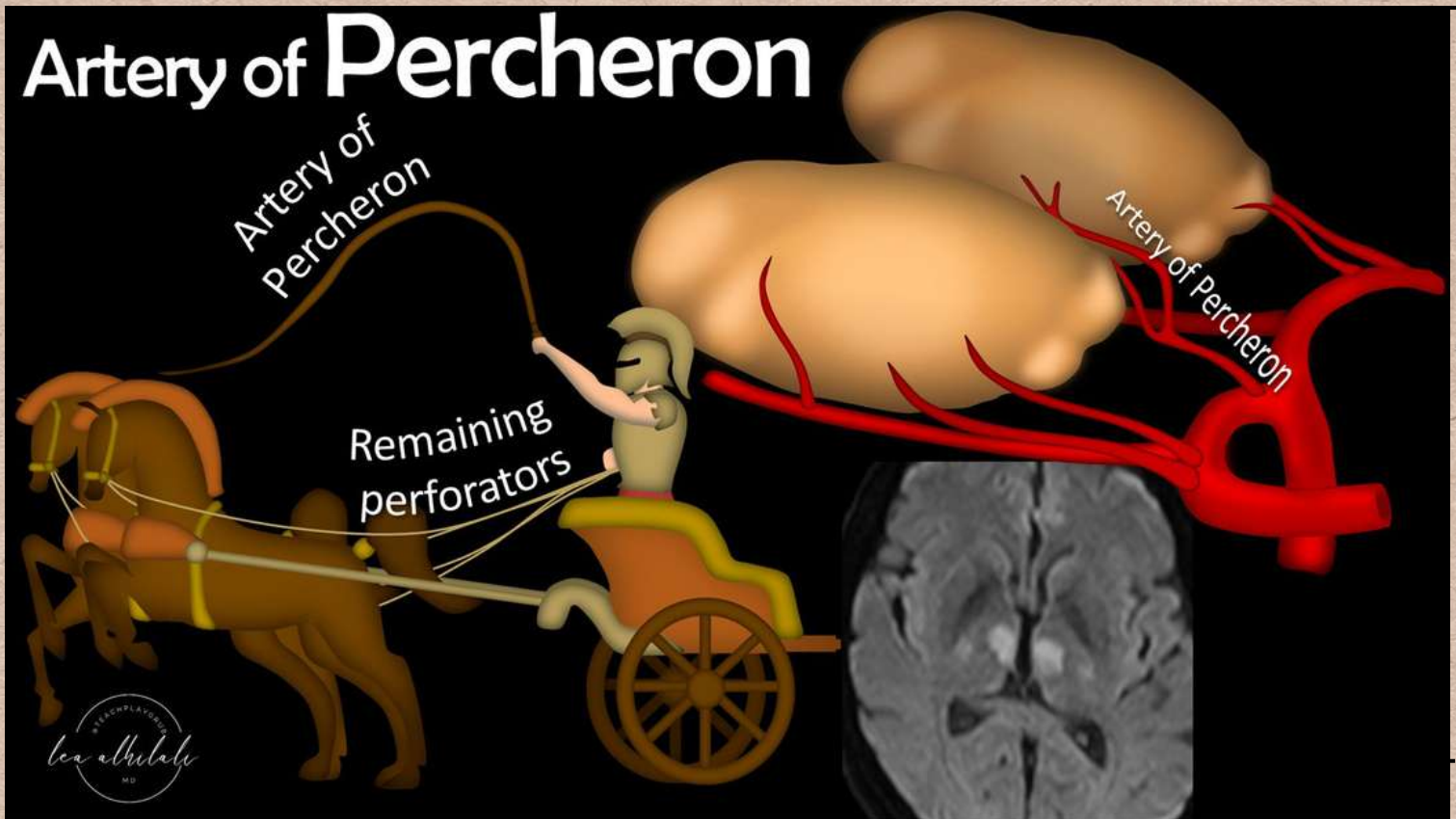
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ARTERY OF PERCHERON

A Rare but Important Variant of Brain Vascularisation



The artery of Percheron (AOP) is named after French neurologist Gerard Percheron who studied thalamic blood supply and described anatomical variants of arteries depending upon its origin. He identified AOP as a rare anatomical variation of the paramedian thalamic-mesencephalic arterial supply in which a single arterial trunk arises from the posterior cerebral artery (PCA) and distributes bilaterally to the both paramedian thalami and often to the rostral part of the midbrain.

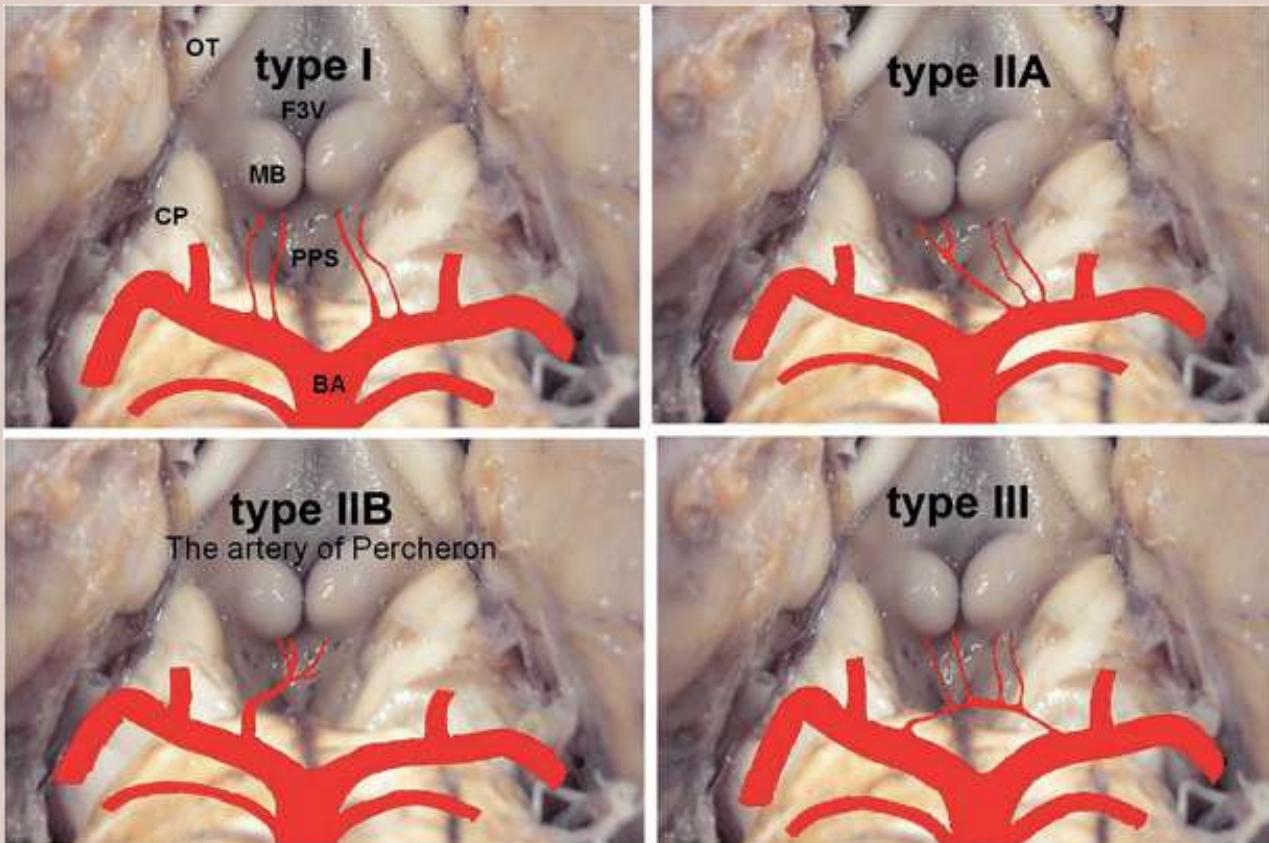


Fig I: Variants of thalamic arterial supply

TYPE	ANATOMICAL DESCRIPTION
I	Normal paramedian arteries(PMAs) Left and Right PMAs arise from their respective posterior cerebral artery(PCA)
IIA	Both PMAs arise from either Left or Right PCA
IIB	Artery of Percheron single arterial trunk arises from either Left or Right PCA supplies both thalami
III	Several small perforating branches arising from a single arterial arc that bridges the P1 segments of both PCA.

EPIDEMIOLOGY

- Prevalance of AOP(artery of Percheron): 11.7-33%
- AOP infarction represents 0.1%-2% of all ischemic strokes and 4-18% of all thalamic strokes

***exact prevalence is unknown because it is difficult to detect by conventional angiography

Prevalent patterns of artery of Percheron infarction are follows:-

- **Bilateral paramedian thalamic with midbrain infarction (43%)**
- **Bilateral paramedian thalamic alone without midbrain involvement (38%)**
- **Bilateral paramedian thalamic infarction with anterior thalamic and midbrain involvement (14%)**
- **Bilateral paramedian thalamic with anterior thalamus without midbrain (5%).**

CLINICAL PRESENTATION OF AOP INFARCT

Symptoms of an AOP stroke depends on the extent and location of the infarction

An ischemic stroke in the territory of an AOP usually presents with 3 main symptoms that are found in patients with bilateral paramedian thalamic strokes

- Vertical gaze palsy
- Memory impairment
- Coma

Bilateral paramedian thalamic strokes may also be associated with rostral midbrain lesions leading to "thalamopeduncular" syndrome, which is characterized

- Hemiplegia
- Cerebellar ataxia
- Movement disorders
- Oculomotor disturbances

Psychiatric symptoms could manifest as personality changes, loss of initiative, delusional jealousy, hypersexuality, disinhibition, emotional lability, or delirium

DIAGNOSIS

- Diffusion-weighted imaging (DWI) and FLAIR MRI sequences are the examinations of choice for early diagnosis of AOP infarction

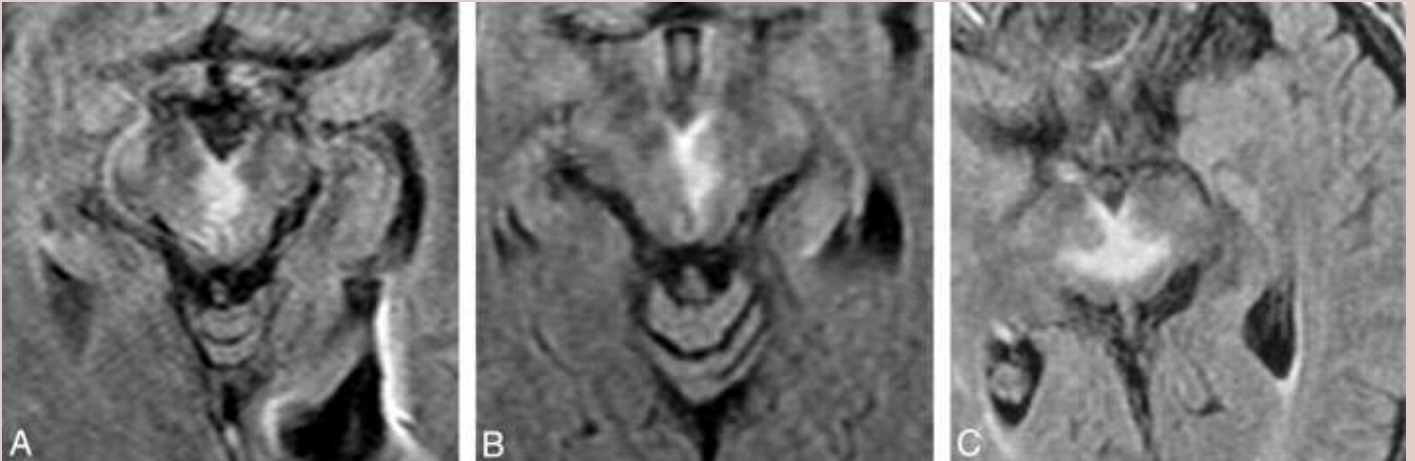


Fig:2 Axial FLAIR MR images through the midbrain A,B,C depicts a V-shaped hyperintense signal, intensity along the pial surface of the midbrain at the interpeduncular fossa (the V sign).



Fig:3 MRA of the brain showed single artery arising from P1 segment of the left PSA (white arrow)

REFERENCES

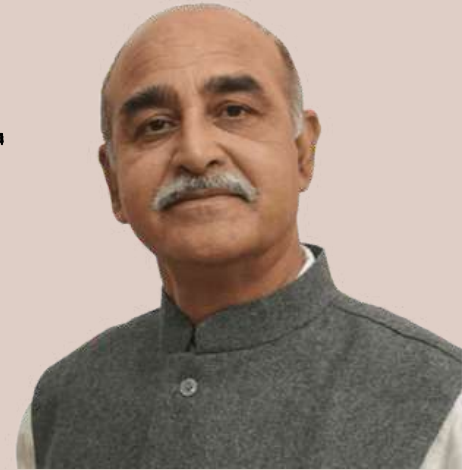
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IMPORTANT FACTS

- Infarction of AOP may cause diagnostic difficulties due to various clinical presentations and wide differentials, beside its small diameter and difficult visualization by diagnostic imaging.
- Early neuroimaging of AOP infarction and correct diagnosis is mandatory for early initiation of appropriate treatment and better patient outcomes.

MESSAGE FROM EXECUTIVE DIRECTOR
PROF.DR. (COL.) CDS KATOCH, AIIMS RAJKOT

I heartily congratulate the Department of Anatomy for bringing this informative newsletter on the anatomical explanation of Artery of Percheron. My best wishes to the entire team.



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