

Case Lessons

Midbrain Cavernoma in a patient with familial cavernomatosis

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Peduncular CMs

Peduncular midbrain CMs are located in the cerebral peduncles on the anterolateral surfaces of the midbrain. Lesions occur from the lateral edge of the oculomotor nerve medially to the lateral mesencephalic sulcus laterally and from the optic tracts superiorly to the ponto-mesencephalic sulcus inferiorly. Peduncular BSCMs are deep to the distal P1 and P2A (crural) segments of the PCA. Critical motor fibers in the corticospinal tracts occupy the middle third of the peduncle, with fronto-pontine tracts medially and temporo-parieto-occipito-pontine fibers laterally. The substantia nigra lies deep to these tracts, with its reticular and compact parts and pallidonigral, nigrostriatal, and corticonigral fibers between them. Peduncular lesions are lateral to oculomotor nerve fibers and the red nuclei.

Case presentation

The patient diagnosed in 2021 with familial multiple CM, after a history of one month with frontal headaches, as well as 2 episodes of generalized Epi after which he performed a Brain MRI where it was identified: Multiple familial cavernoma (father operated twice with CM)

In 2021, surgery was performed with GTR removal of a right trigonal CM.

Under clinical and radiological follow-up every year.

On 30/08/2024, he started having problems with blurred vision, loss of balance, headache, which deteriorated with left side progressive weakness, right palpebral ptosis and decreased consciences.

Brain MRI revealed: Cavernoma with hemorrhage in the right thalamus and mesencephalon with perifocal edema and mass effect.

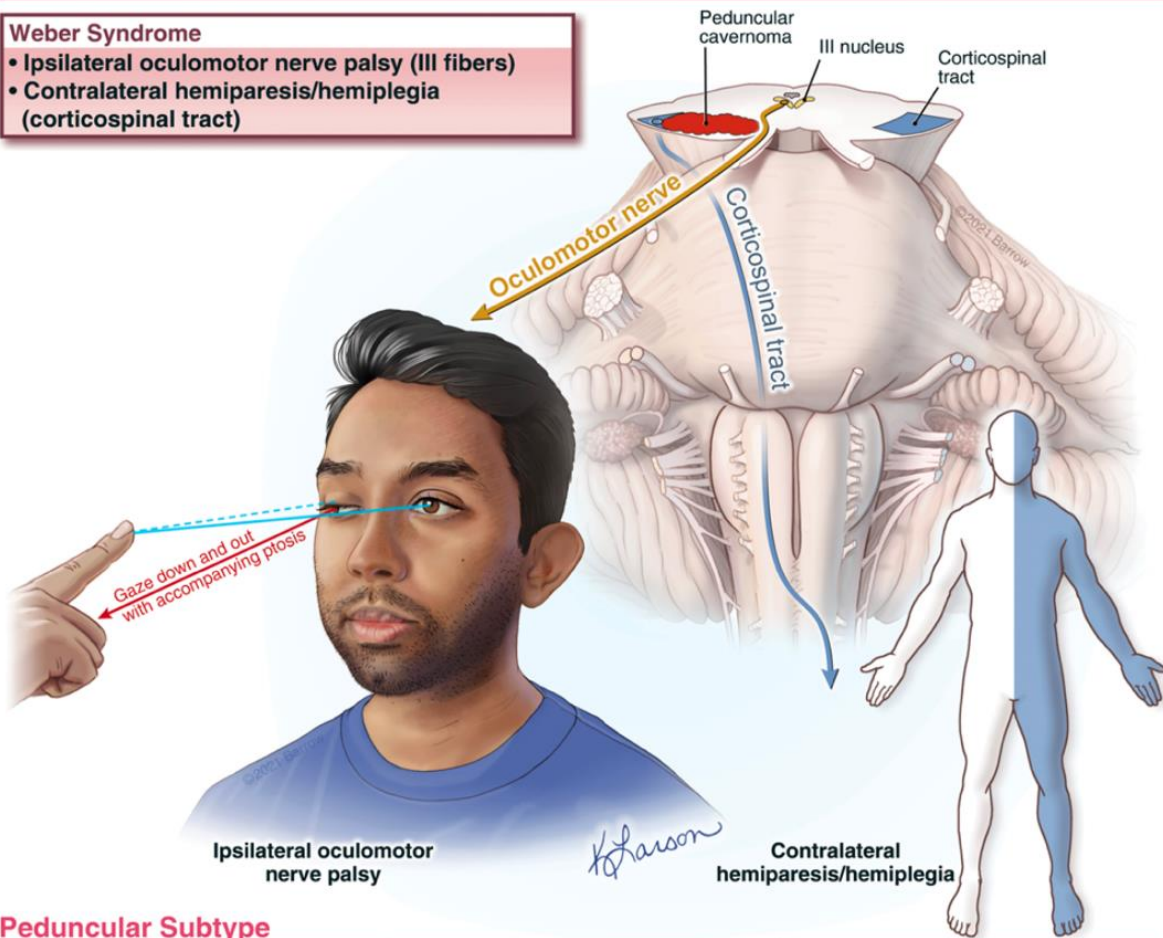
On Neurological examination he was, Alert. Oriented in time and space. Right palpebral ptosis Limitation of abduction OS. Right central facial palsy. Dysarthria. Uvula deviated to the left. Tongue slightly deviated to the left. GAG reflex slightly decreased. Left hemihypoesthesia and Hemiparesis 2/5 upper limb, 3-4/5 lower limb. Left Babinski +. Left side dysmetria. NIHSS=12; GCS=15; CCI=4; PSC=60

In seven subtypes of cavernomas after Lawton, the taxonomy in our case is peduncular.

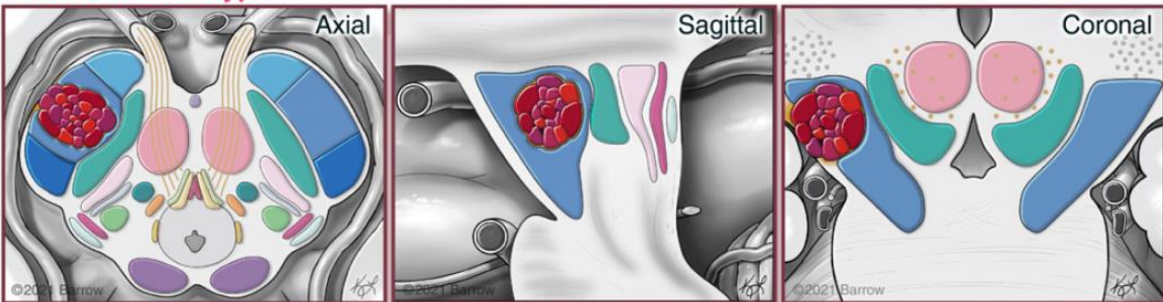
Peduncular Midbrain Cavernoma

Weber Syndrome

- Ipsilateral oculomotor nerve palsy (III fibers)
- Contralateral hemiparesis/hemiplegia (corticospinal tract)



Peduncular Subtype

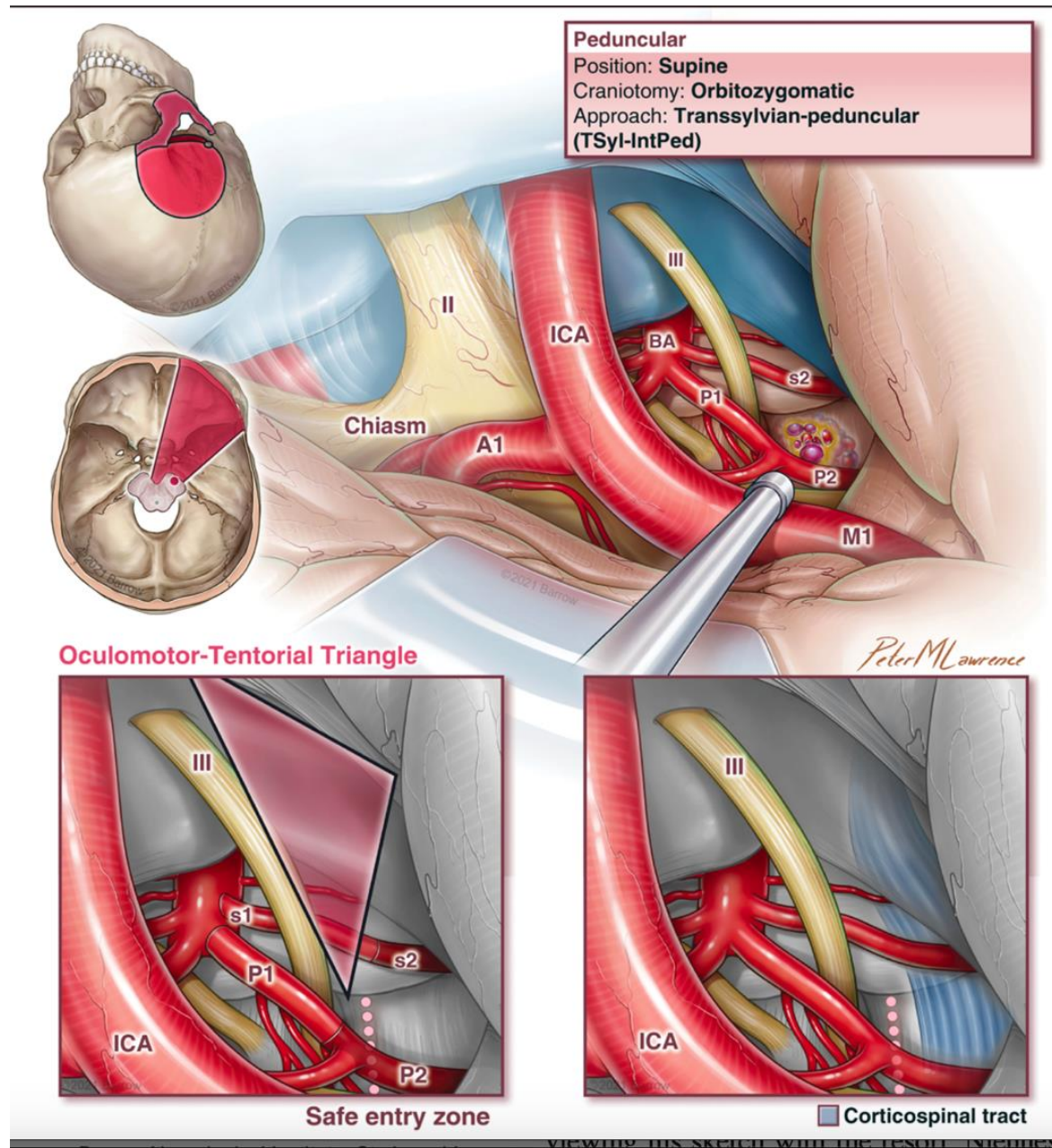


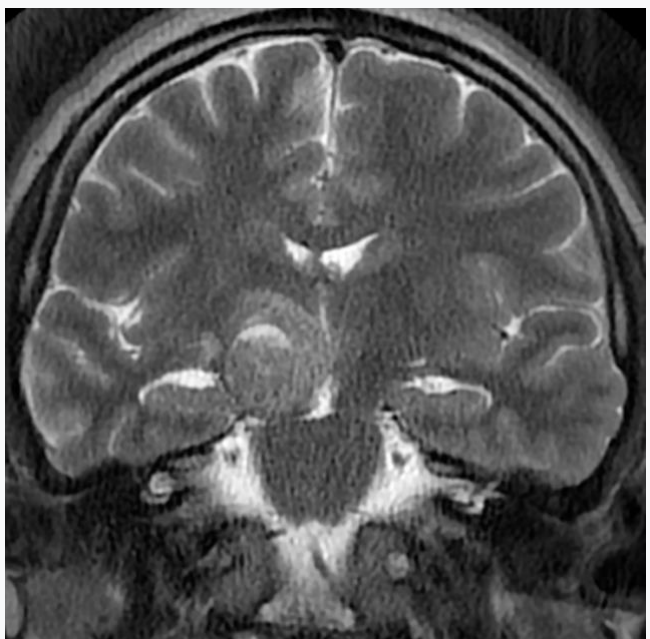
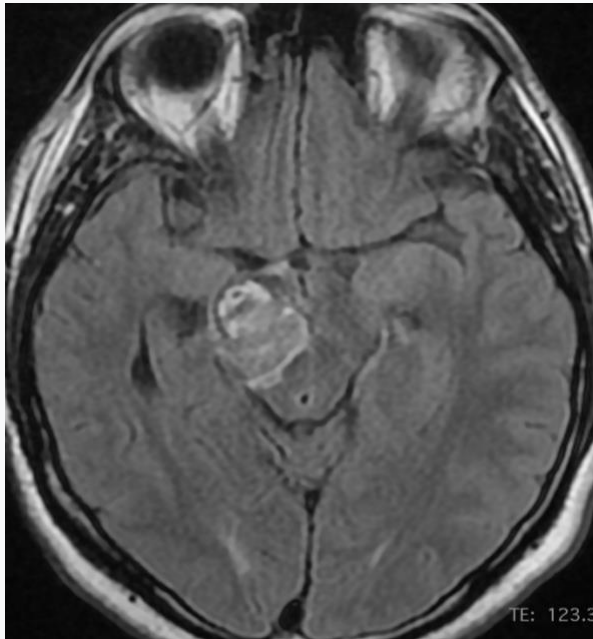
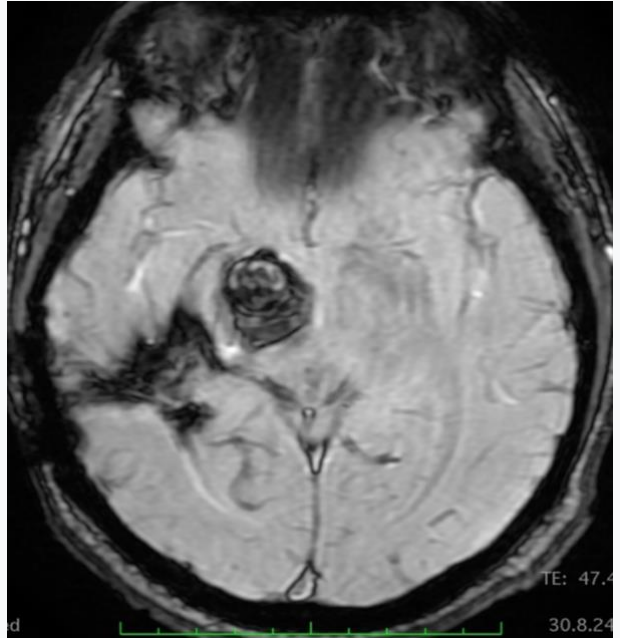
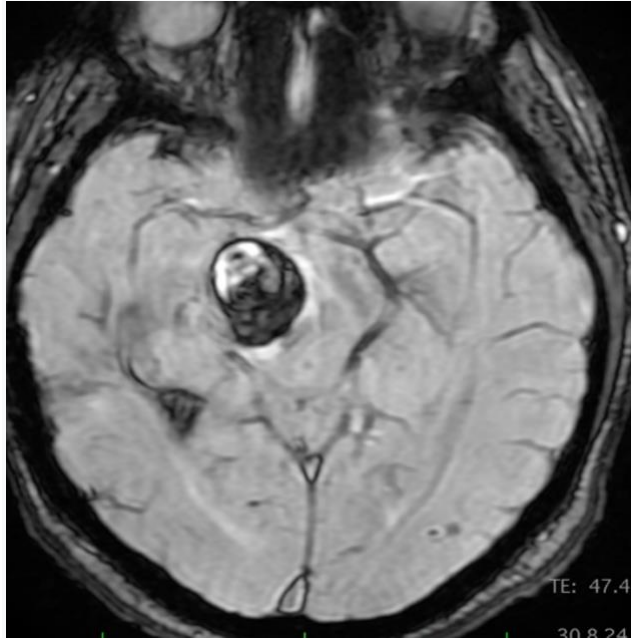
■ Corticospinal tract ■ Substantia nigra ■ Red nucleus ■ Medial lemniscus

Surgical procedure: the patient was operated through a right pterional trans-sylvian, unectomy approach, the lesion was exposed in the lateral surface of the midbrain, and GTR was realized. (intraoperative video on request from Dr Grada)

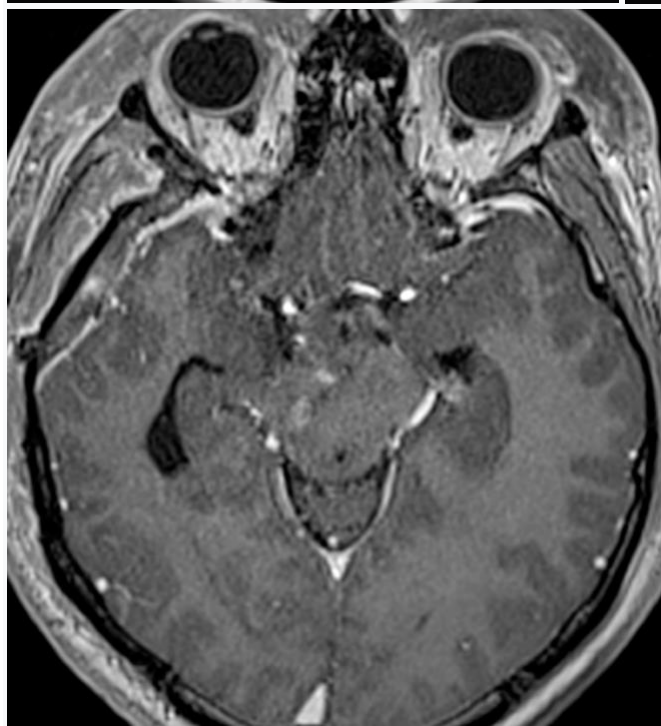
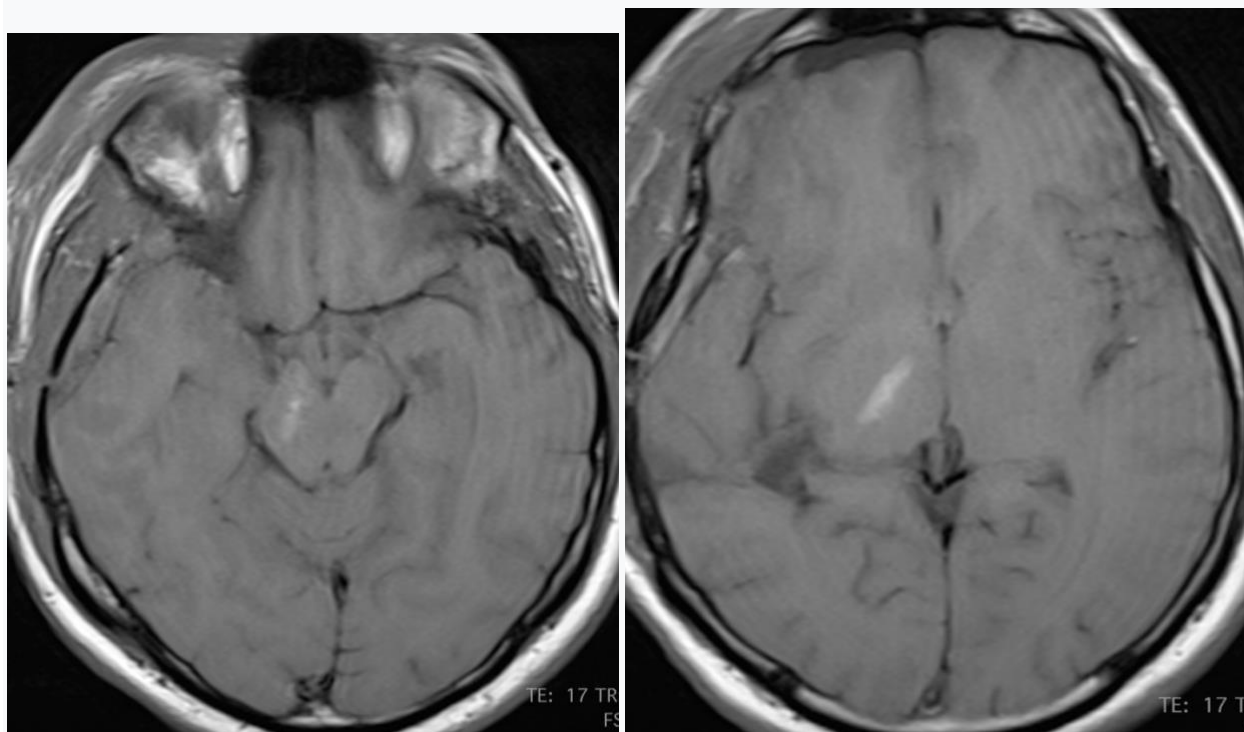
Post-operative, the patient's neurological condition improved considerably. He left the hospital on day 4 walking without support.

Surgical approach of the peduncular cavernomas according to Lawton.





Pre-operative MRI



Immediate post-operative MRI

