DUAL POSTERIOR CEREBRAL ARTERY (PCA): ARE TWO ARTERIES BETTER THAN ONE? A CLINICAL CASE OF A VERY RARE BUT NOT NEGLIGIBLE ANATOMIC VARIANT IN STROKE.

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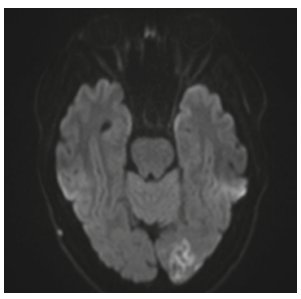
BACKGROUND

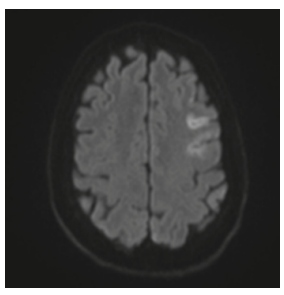
Knowledge of vascular anatomy and its variant is crucial to understand stroke cause and to better set a secondary prevention. Neurologist should know these aspects because they can coordinate the clinical and epidemiology condition of patient with radiological features, better than the radiologist alone.

CASE PRESENTATION

A 55 year-old man with right hemianopsia came to E.R. with right hemianopsia CT-angiography showed a parcellar lesion in the left calcarine cortex and a possible dissection of left intracranial ICA.

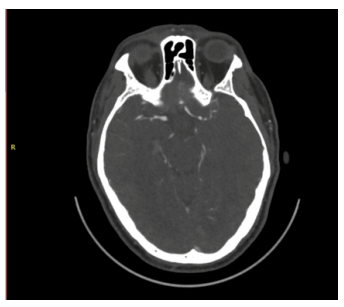
BRAIN MRI





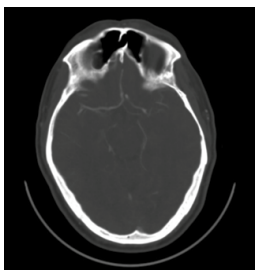
Axial DWI sb1000 showing simultaneous ischaemic lesions in both lPCA and lMCA territory, consistent with lICA dissection.

ANGIO-CT



It is visible both the origin of a fetal PCA and a basilar PCA in the left hemisphere.

ANGIO-CT



t is visible a complete differentiate pathway of left fPCA and left basilar PCA, the first one is directed to occipital mesial cortex, where the stroke is localized.

DISCUSSION

Left-PCA clearly raised from basilar artery. Additionally, an artery originating from left-ICA moving towards PCA was present; with Transcranial Doppler, it showed flow-away pattern, and no
functional stenosis, (excluding a PCoA). An in-depth detailed CT-angiography reconstruction of CT-
angiography revealed two distinct PCAs:, one fetal-type arising from the left ICA and another
emerging from basilar artery, with no reunification, but dividing vascularisation territory of PCA. Fetal- PCA supplied mesial and calcarine cortex territories, while regularly basilar-originating PCA perfused thalamus and other a more lateral areas. These findings suggested stroke was related to left-ICA dissection, as confirmed by brain-MRI showing additional also lesions in left-MCA territory. The embolic pattern distribution of stroke led us to set an anticoagulant treatment.

CONCLUSION

This very rare variant of complete PCA duplication of PCA is underrecognized but crucial for understanding stroke mechanism. This case underlines the irreplaceability of intracranial
multimodal imaging to for a patient-tailored approach to determine stroke etiopathogenesis.

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