



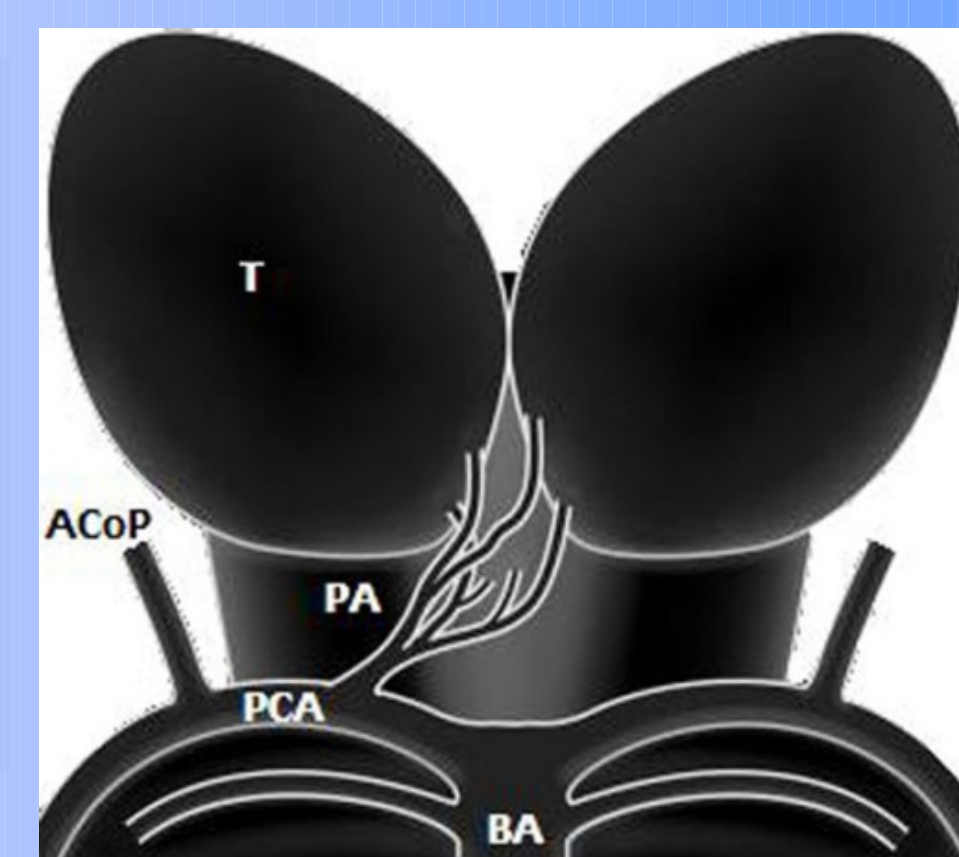
ARTERY OF PERCHERON INFARCTION: REPORT OF FIVE CASES

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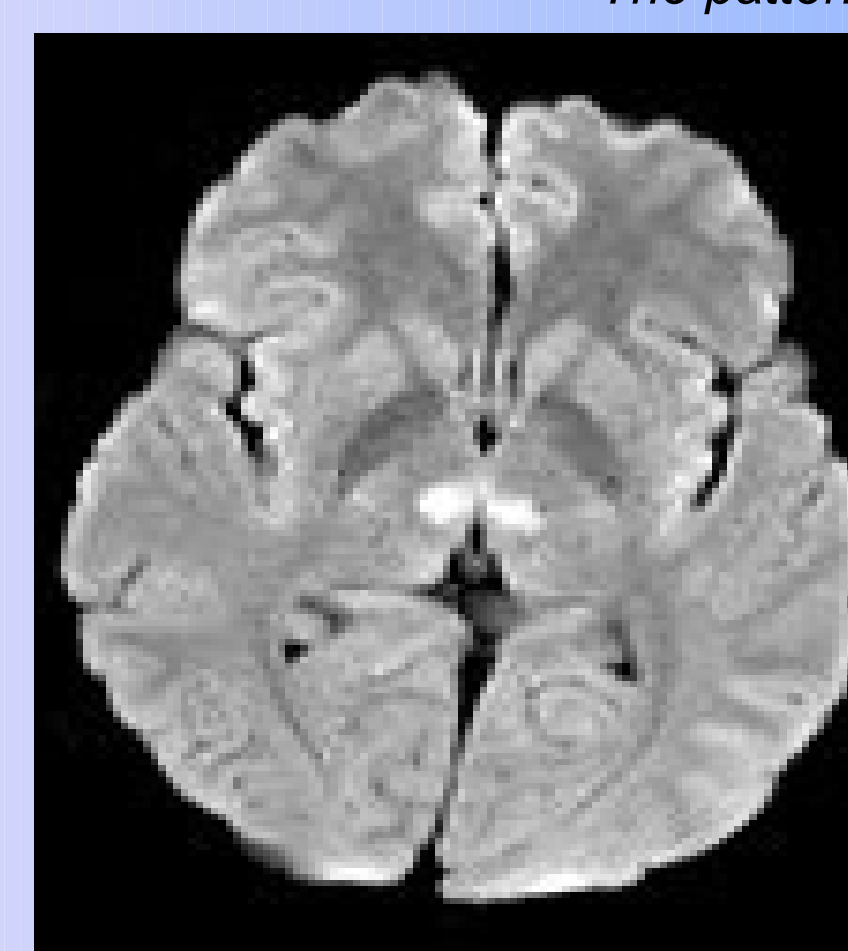
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BACKGROUND: The artery of Percheron is an uncommon anatomic variant of the posterior cerebral circulation characterized by a solitary arterial trunk that supplies blood to the paramedian thalami and the rostral midbrain bilaterally. Five cases of bilateral thalamic strokes due to occlusion of the artery of Percheron as a result of embolic diseases or small-vessel diseases are described in this study.



The pattern of the artery of Percheron

CASE REPORTS: Between 2012 and 2015, five male patients, age range 39-91, came to our attention showing varying levels of decreased consciousness or hypersomnolence. Other symptoms were vertical gaze palsy in two patients, and dysarthria, hemiparesis and hypoesthesia in two other patients. No chronic alcoholism or nutritional deficiency (suggesting thiamine deficiency) were reported in all patients. On admission, four patients underwent magnetic resonance (MR) imaging which revealed symmetric bilateral hyperintense paramedian thalamic lesions (particularly on diffusion weighted MR images); an additional mesencephalic infarction was found in one patient. The fifth patient, who was unable to perform MR examination, underwent a CT scan which revealed bithalamic hypodense lesions.

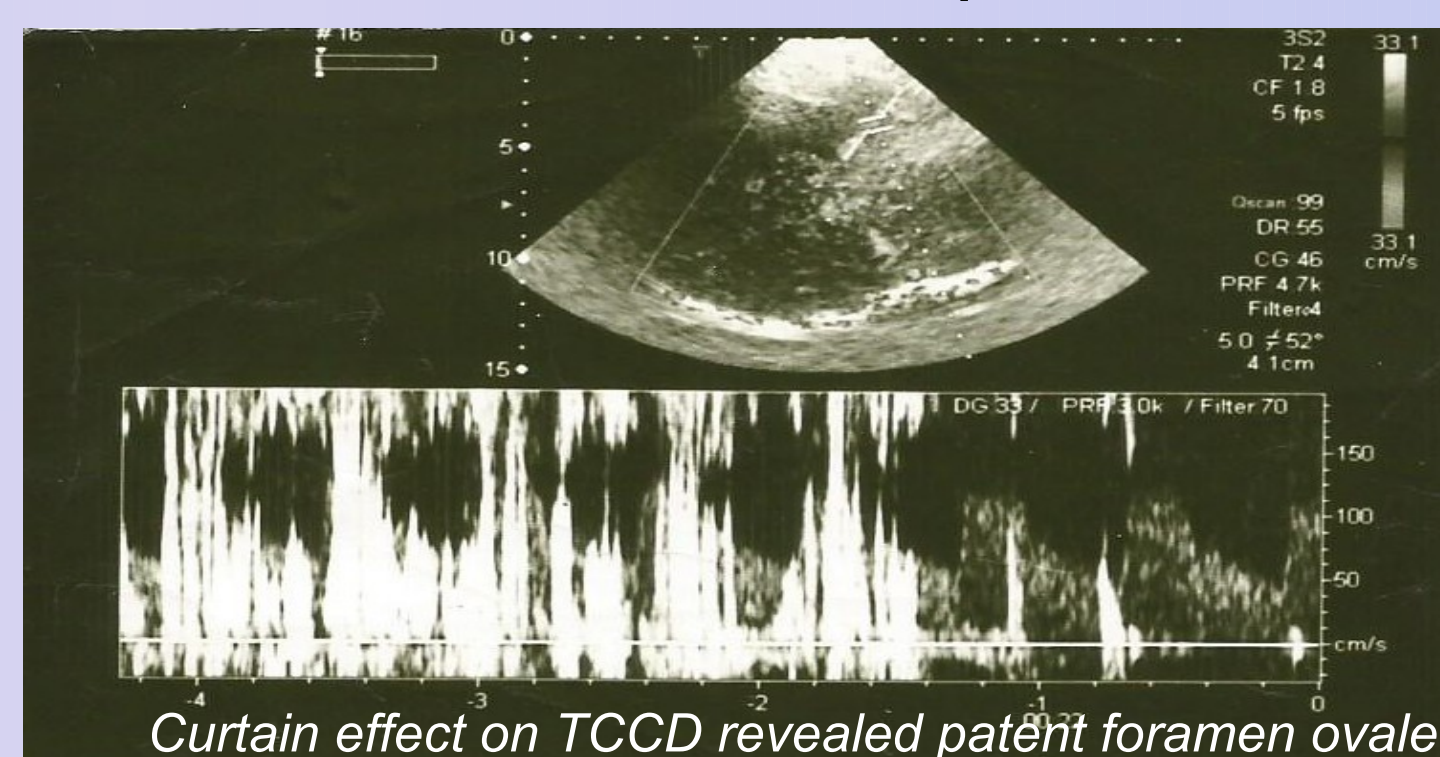


Bithalamic infarcts on FLAIR MRI



Bithalamic infarcts on CT scan

Cervical artery ultrasonography showed low grade carotid stenosis in two patients and hypoplastic vertebral artery in two other patients. MR angiography and transcranial Doppler ultrasonography did not reveal any vascular abnormality. Electroencephalogram was not significantly changed in all patients. Further cardiac evaluation, such as contrast transesophageal echocardiography, contrast transcranial Doppler and Holter electrocardiography revealed a patent foramen ovale (PFO) as the cause of embolism in 2 patients and atrial fibrillation in two other patients.



Curtain effect on TCCD revealed patent foramen ovale

In the remaining patient the presumed cause of Percheron artery occlusion was small vessel disease. One patient underwent PFO closure, two patients were treated with anticoagulant drugs and two with antiplatelet therapy.

CONCLUSIONS: Although not directly visible, the presence of artery of Percheron must be suspected when bilateral symmetric paramedian thalamic infarcts are revealed on imaging studies in the context of a patent basilar and posterior cerebral arteries. This study suggests that bilateral thalamic infarcts are not unusual and that their most frequent etiology is cardioembolism although further evaluations to define the cause is necessary. Probably some artery of Percheron infarctions are unrecognized because the clinical features can be confused with other neurological disorders such as metabolic and toxic processes, myelinolysis, Wilson's disease, Creutzfeldt Jakob disease, neoplasm or non convulsive epileptic status.

References:

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- 2) Arauz A, Patiño-Rodríguez HM, Vargas-González JC et al. Clinical spectrum of artery of Percheron infarct: clinical-radiological correlations. J Stroke Cerebrovasc Dis. 2014;23:1083-8.