

Bilateral thalamic infarction caused by artery of Percheron obstruction

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DESCRIPTION

A man in his 90s with atrial fibrillation presented with a 4-day history of increasing drowsiness associated with decreased oral intake. On arrival, his Glasgow Coma Scale score was 7 (E1V2M4). On examination, there was no eye tracking, reflexes were diminished globally and patient was unable to cooperate with motor examination. At that point of time, differential diagnoses include bilateral thalamus lesion, basilar syndrome, deep cerebral venous thrombosis, metabolic and toxic processes, infection as well as neoplasm. Initial CT of the brain showed interval development of acute non-haemorrhagic infarcts in the medial aspect of the right occipital lobe, adjoining aspects of both thalami and possible

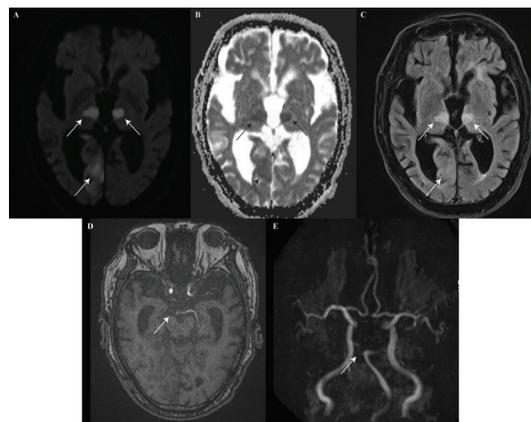
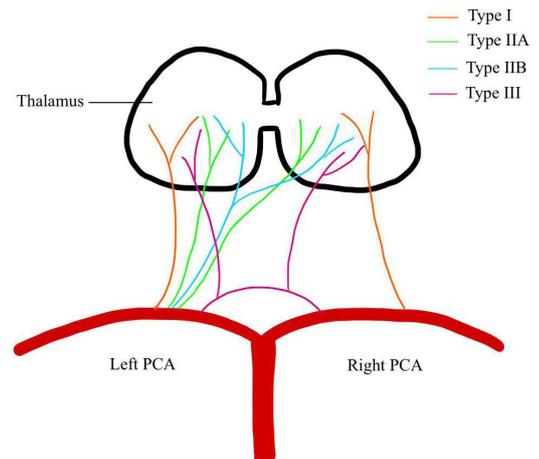


Figure 1 Symmetrical areas of restricted diffusion (A) with corresponding apparent diffusion coefficient (ADC) (B) and fluid attenuated inversion recovery (FLAIR) (C) changes noted compatible with acute infarcts in the territory of artery of Percheron. Time of flight (D) shows absent flow signal in proximal right P1 segment. Magnetic resonance angiography (MRA) (E) shows subtotal occlusion of the right posterior cerebral artery.

Learning points

- ▶ Artery of Percheron (AOP) infarct should be considered in a patient presenting with altered consciousness and changing neurology once other causes, including seizures, drug toxicity, infection and multiple sclerosis, have been excluded.
- ▶ Diffusion-weighted MRI is the best modality for diagnosing acute AOP infarcts, and a high index of suspicion is required.
- ▶ Early thrombolysis in patients with no contraindications offers the best prognosis.

Artery of Percheron



- A - Type I, normal anatomy
- B - Type II A, both paramedian arteries originate from the left P1 segment
- C - Type II B, the AOP originates unilaterally from the P1 segment and then bifurcates, supplying bilateral paramedian thalamus and rostral midbrain
- D - Type III, an arterial cascade connects the left and right P1 segments and gives rise to the paramedian arteries

Figure 2 Classification of the artery of Percheron by Marco Lizwan.

right cerebral peduncle (posterior circulation artery (PCA) territory). MRI of the brain (figure 1) revealed acute non-haemorrhagic infarct in the right PCA and artery of Percheron (AOP) territories with involvement of posteromedial right temporo-occipital lobes, para-median thalami and anteromedial cerebral peduncles. The AOP is a rare variant of arterial supply to the thalamus that arises from segment one of the PCAs. Four major variants were previously described¹ (figure 2), and our patient likely has a type II variant. Infarct of AOP can affect bilateral structures with varying clinical presentations.² Diagnosis of AOP infarct is often missed due to the unusual presentation, and it may not be visualised on primary imaging.

Contributors ML wrote the manuscript and SKS supervised the writing of the manuscript. All authors read and approved the final manuscript.

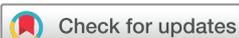
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Case reports provide a valuable learning resource for the scientific community and can indicate areas of interest for future research.



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They should not be used in isolation to guide treatment choices or public health policy.

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