

Juxtacortical haemorrhage in cerebral venous sinus thrombosis: 'The Cashew Nut Sign'

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DESCRIPTION

A 22-year-old woman presented to the emergency room with headache and confusion. The symptoms had woken her in the morning and progressively worsened through the day. She also experienced difficulty in texting messages on her phone. Her medical record revealed a head concussion 2 years earlier. She was using oral contraceptives on prescription.

Neurological examination demonstrated left lower facial paralysis with aphasia, dyscalculia, dyslexia and fingeragnosia, clinically Gerstmann syndrome. Further examination showed no abnormalities. A non-contrast head CT was performed and showed a left parietotemporal venous infarction and a small juxtacortical haemorrhage (figure 1). An additional MR angiography showed occlusion of the left transverse sinus and a T2-weighted MRI showed a venous infarction with a juxtacortical haemorrhage (figure 2). The patient was treated with low-molecular-weight heparin and recovered completely after 6 weeks.

Cerebral haemorrhage is seen in approximately 40% of patients with venous sinus thrombosis (cerebral venous thrombosis, CVT).^{1 2} Recent



Figure 1 A non-contrast head CT showing a left parietotemporal venous infarction with a concave juxtacortical haemorrhage.



Figure 2 A T2-weighted MRI showing a left parietotemporal venous infarction with a juxtacortical haemorrhage just beneath the sulcus.

literature shows that non-traumatic juxtacortical haemorrhage is associated with CVT. In a prospective cohort study of 114 patients with venous sinus thrombosis of whom 53 patients had cerebral haemorrhages and 14 (26%) had juxtacortical haemorrhages.³ A specificity of 0.98 (95% CI 0.95 to 1.0) was found. Unfortunately, the sensitivity (0.26 (95% CI 0.16 to 0.41) is quite low.

These haemorrhages are located in the juxtacortical white matter. When the haemorrhage is located near the bottom of a sulcus it will result in a concave shape, resembling a cashew nut. This so-called Cashew Nut Sign is a new radiological sign with relative high specificity for cerebral venous thrombosis.

Learning points

- ▶ Small non-traumatic juxtacortical haemorrhages are associated with cerebral venous thrombosis.
- ▶ The concave haemorrhage is caused by the shape of the sulcus and its location in the juxtacortical white matter.



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