

Cerebral venous sinus thrombosis after resolution of COVID-19 in a non-hospitalised patient

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A man in his late thirties awoke with a right-sided thunderclap headache which subsided over hours, following which he lost consciousness just after noting his right arm jerking. Two weeks previously, he had recovered from an illness consisting of fever, myalgia and cough. He had not sought medical attention or testing, although he had COVID-19 antibodies in his blood without having been vaccinated. On examination, he had a facial laceration and a lateral tongue-bite injury but no other abnormality.

Plain computer tomography showed a small region of increased density over the right temporal lobe, representing subarachnoid blood ([figure 1](#)). On the suspicion that this was venous in aetiology, magnetic resonance venography was performed ([figure 2](#)). This confirmed cerebral venous sinus thrombosis (CVST) extending from the superior sagittal sinus to the right internal jugular vein. He was successfully treated with low molecular weight heparin as a bridge to warfarin therapy, and remains seizure free on levetiracetam.

He has no personal or family history of thrombosis, and we have not yet identified a risk factor for CVST other than COVID-19. The association between COVID-19 and CVST is increasingly recognised,¹ with a broad range neurological manifestations and morbidity,^{2,3} and variable presence of typical risk factors.⁴ As it is unclear whether COVID-19 is an independent risk factor for CVST, it remains important to consider investigating for underlying causes of thrombosis.



Figure 1 Axial CT of the brain showing area of density overlying the right temporal lobe due to subarachnoid blood.

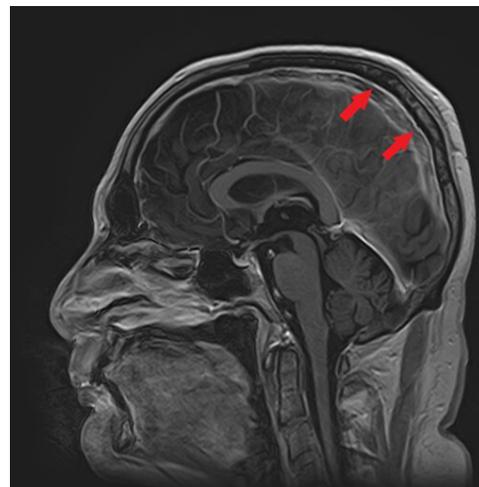


Figure 2 Sagittal T1-weighted postcontrast MRI showing heterogeneous signal intensity in the sagittal sinus due to mixing of contrast medium with thrombus.

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REFERENCES

- 1 Fraiman P, Godeiro Junior C, Moro E, *et al*. COVID-19 and cerebrovascular diseases: a systematic review and perspectives for stroke management. *Front Neurol* 2020;11:574694.
- 2 Dakay K, Cooper J, Bloomfield J, *et al*. Cerebral venous sinus thrombosis in COVID-19 infection: a case series and review of the literature. *J Stroke Cerebrovasc Dis* 2021;30:105434.
- 3 Bolaji P, Kukoyi B, Ahmad N, *et al*. Extensive cerebral venous sinus thrombosis: a potential complication in a patient with COVID-19 disease. *BMJ Case Rep* 2020;13:e236820.
- 4 Ostovan VR, Foroughi R, Rostami M, *et al*. Cerebral venous sinus thrombosis associated with COVID-19: a case series and literature review. *J Neurol* 2021;22:1–12.



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