



CASE IMAGE

Cerebral venous thrombosis in a young man

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A 20-year-old man with ulcerative colitis was transferred to our emergency department with a 3-day history of altered mental status. The patient's initial Glasgow Coma Scale was E3V1M6 and Babinski sign was positive bilaterally. His vital signs were stable and he had no apparent neurological deficit, including neck stiffness. Magnetic resonance imaging (MRI) showed the more precise high-intensity area in fluid attenuated inversion recovery (FLAIR) than in diffusion weighted image (DWI) of the bilateral thalamic lesions (Figure 1A, arrows; Figure 1B, arrowheads). Computed tomography venography revealed occlusion of the straight sinus (Figure 1C, arrowheads). He was diagnosed with cerebral venous thrombosis. Anticoagulant therapy with unfractionated heparin was initiated and the patient's consciousness gradually improved. He was discharged with mild amnesia. Cerebral venous thrombosis occurs among patients with prothrombotic risk factors.^{1,2} In this case, untreated ulcerative colitis was the risk factor. Venous thrombosis is less common than ischemic stroke for emergency physicians. The pathophysiology caused by cerebral venous thrombosis is not ischemia but congestion. Therefore, FLAIR is a higher intensity than DWI on MRI, which is contrary to the high intensity of DWI compared to FLAIR in acute ischemic stroke.³ In addition, the arterial perfusion area and the venous dominant zone are different. The bilateral thalamic lesion is rare in ischemic stroke, but common in straight sinus thrombosis. Emergency physicians should consider cerebral venous thrombosis when MRI reveals reverse DWI-FLAIR mismatch in bilateral thalamic lesions.

ETHICS STATEMENT

Approval of the research protocol: N/A.

Informed consent: The requirement for the patient consent was waived due to the anonymous nature of the information.

Registry and registration no. of the study/trial: N/A.

Animal studies: N/A.

CONFLICT OF INTEREST STATEMENT

None.

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REFERENCES

1. Spadaro A, Scott KR, Koyfman A, Long B. Cerebral venous thrombosis: diagnosis and management in the emergency department setting. *Am J Emerg Med.* 2021;47:24–9.
2. Ropper AH, Klein JP. Cerebral venous thrombosis. *N Engl J Med.* 2021;385:59–64.
3. Canedo-Antelo M, Baleato-Gonzalez S, Mosqueira AJ, Casas-Martinez J, Oleaga L, Vilanova JC, et al. Radiologic clues to cerebral venous thrombosis. *Radiographics.* 2019;39:1611–28.

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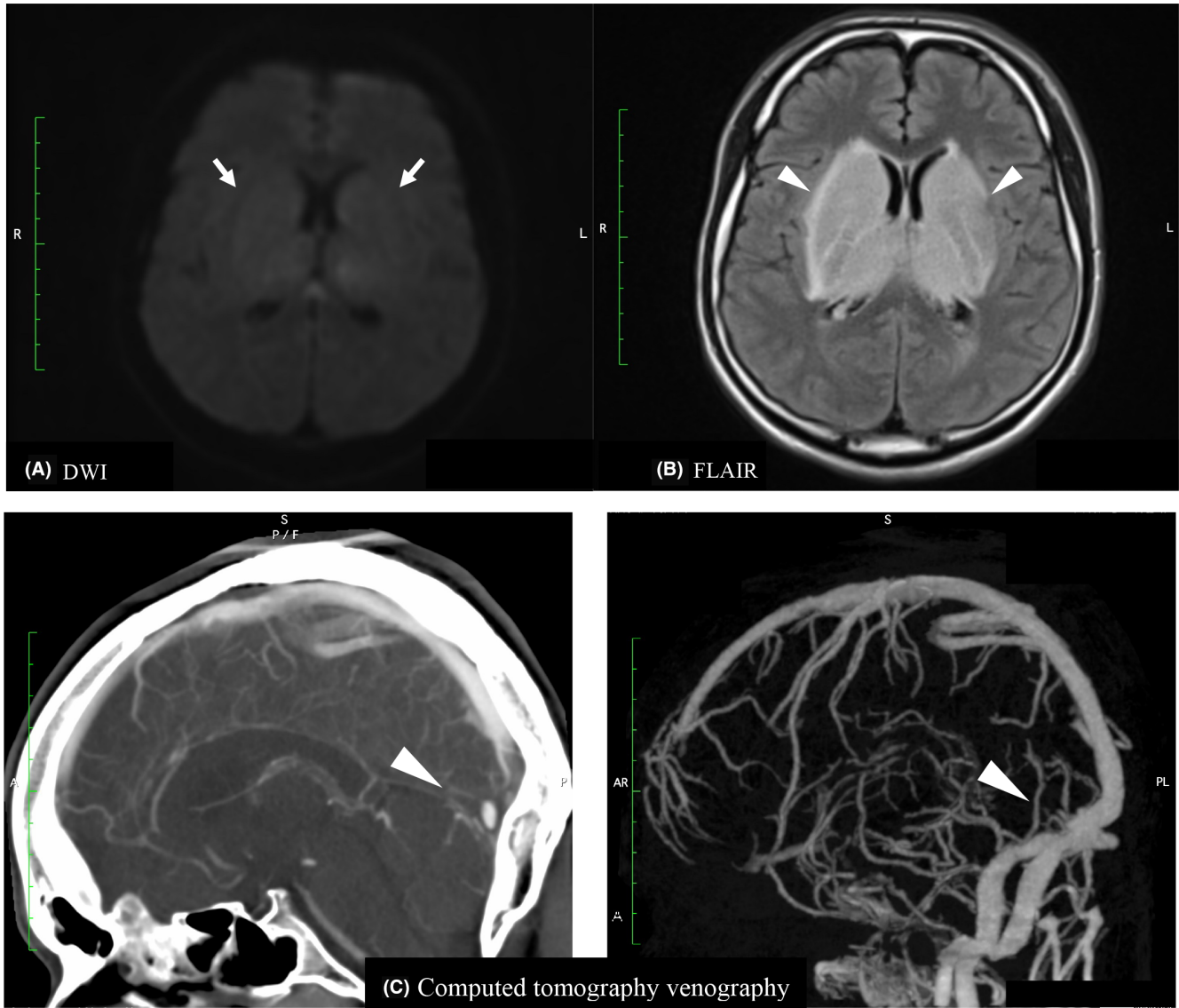


FIGURE 1 (A, B) Magnetic resonance imaging of a 20-year-old man with cerebral venous thrombosis. Reverse diffusion weighted image (DWI)–fluid attenuated inversion recovery (FLAIR) mismatch is identified, which shows the more precise high-intensity area in FLAIR (B, arrowheads) than in DWI (A, arrows), of the bilateral thalamic lesions. (C) Computed tomography venography showed the absence of contrast effect as the result of occlusion of the straight sinus (arrowheads).