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Clinical Image

CLINICAL IMAGE

Transverse-sigmoid sinus dural arteriovenous fistula diagnosed after convulsions

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TEXT

A 61-year-old healthy man drank 60 g of Japanese sake. One hour later, tonic convulsions occurred for 3 min, after which he lost consciousness. He was transported by ambulance, but he fully regained consciousness immediately after being examined. No obvious abnormalities were observed on non-contrast head computed tomography images, and the cause of the convulsions and impaired consciousness was considered to be heavy alcohol consumption. Fluid replacement was administered, and he was admitted to the hospital. On the next day, tonic convulsions in both arms and legs lasting several minutes and 20 min of impaired consciousness were observed. Magnetic resonance imaging (MRI) was performed, revealing a high intensity region in the left cerebellar dentate nucleus, the left cerebellar hemisphere, and the left parietal cortex (Fig. 1a). Additionally, magnetic resonance angiography (MRA) of the head revealed an abnormal blood vessel intersecting from the left middle meningeal artery and the left occipital artery to the left transverse-sigmoid sinus (Fig. 1b). Angiography led definitive diagnosis of a left transverse-sigmoid sinus dural arteriovenous fistula. The proximal and distal ends of the transverse-sigmoid sinus were occluded, and so transvenous

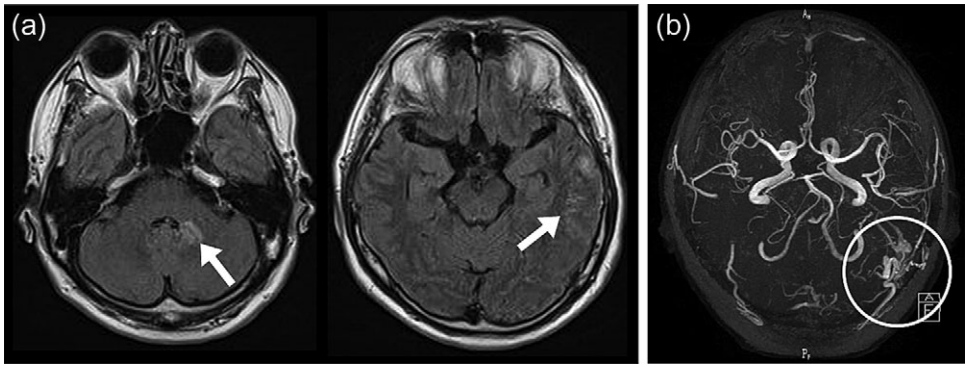

Figure 1: (**a**) Image obtained with fluid-attenuated inversion recovery magnetic resonance imaging of the head. A high intensity region was found in the left cerebellar dentate nucleus and the left parietal cortex (white arrows). (**b**) Head magnetic resonance angiography. An abnormal blood vessel was found intersecting from the left middle meningeal artery and the left occipital artery to the left transverse-sigmoid sinus (white circles). This was considered to be a left transverse-sigmoid sinus dural arteriovenous fistula.

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embolization was not possible. Instead, transarterial embolization was performed. Since then, convulsions have not recurred.

On radiologic evaluation of dural arteriovenous fistula, the transverse-sigmoid sinus (70.0%) was the most common site, followed by the hypoglossal canal (10.0%) and the middle cranial fossa (6.7%) [1]. Dural arteriovenous fistula occurs at a rate of 0.29 per 100 000 people, among whom only 1.5% reportedly have a convulsive seizure as the initial symptom, making it extremely rare [2]. Nevertheless, it is in the differential diagnosis for new-onset convulsions and impaired consciousness in adults. Head MRI and MRA are useful in its diagnosis.

ACKNOWLEDGEMENTS

None.

CONFLICT OF INTEREST STATEMENT

There are no conflicts of interest to declare.

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ETHICS APPROVAL

No approval is required.

CONSENT

Written informed consent was obtained from the patient for publication of this case report and any accompanying images.

GUARANTOR

Tsuneaki Kenzaka is the guarantor of this article.

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