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CASE IMAGE

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Marchiafava-Bignami disease: Prompt diagnosis made by magnetic resonance brain imaging

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Key Clinical Message

Marchiafava-Bignami disease, a rare condition often associated with alcoholism, shows myelin degeneration with tissue necrosis specifically in the corpus callosum. Urgent application of magnetic resonance imaging could lead to prompt diagnosis.

Abstract

A 66-year-old male with habitual alcohol drink complained acute deterioration of left-side muscle weakness as initial presentation. On the arrival, the patient was confused, with stable vital sign and unremarkable pyramidal sign. Although several potential diagnoses could be considered, brain computed tomography did not provide diagnostic information, and subsequently-performed magnetic resonance imaging revealed hyperintense lesions on T2-flair images in corpus callosum, suggesting MBD as clinical diagnosis. Prompt diagnosis enabled us to introduce thiamine administration with subsequent favorable neurological outcome.

KEYWORDS

alcohol consumption, diagnosis, magnetic resonance imaging, Marchiafava-Bignami disease

1 | CASE

A 66-year-old male with habitual alcohol drink complained of acute deterioration of left-side muscle weakness as initial presentation. On the arrival, the patient was confused, with stable vital sign (blood pressure 141/96 mmHg, pulse rate 99/min, body temperature 37.2°C) and unremarkable pyramidal sign. Body mass index was 19.5 kg/m^2 and decreased skin turgor suggested moderate dehydration. Although several potential diagnoses could be considered, brain computed tomography did not show any diagnostic information, other than ambiguous low-density area along with corpus callosum. We subsequently performed magnetic resonance imaging on the same day and found hyperintense lesions of both corpus callosum on T2-flair images and splenium on diffusion-weighted images (Figure 1), suggesting Marchiafava-Bignami disease as clinical diagnosis.[1,2] After acquisition of these images, the patient was treated initially with intravenous infusion including vitamin B1, and switched to its oral supplementation along with alcohol cessation. In response to the treatment, consciousness disturbance had been much improved within 12 h after the thiamine supplementation, and no neurological deficit remains after 10 days hospital stay.

Although absence of hemorrhagic lesion could be confirmed by computed tomography, initial presentation of this case suggested several potential diagnoses including vascular, infectious, skeletal-muscle, and metabolic causes.

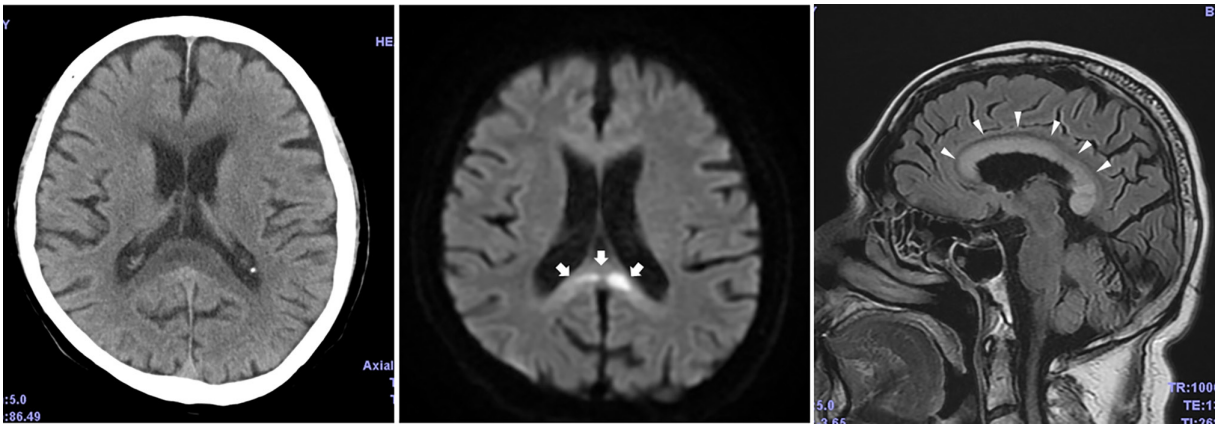

FIGURE 1 The patient showed ambiguous findings on initial CT images (the left panel); however, hyperintense lesion in in the splenium on diffusion-weighted magnetic resonance images (arrows in the middle panel) and that in the corpus callosum (arrowheads in the right panel) on fluid-attenuated inversion recovery (FLAIR)-weighted images.

Urgently-applied MRI uncovered corpus callosum lesion, which is known as specific for Marchiafava-Bignami disease, and enabled us to prompt introduction of vitamin B1 supplementation to avoid serious neurological defect.

AUTHOR CONTRIBUTIONS

Satori Akita: Conceptualization; data curation; formal analysis; resources; writing – original draft. **Takeshi Takakuwa:** Supervision. **Kouji Kajinami:** Supervision; writing – review and editing.

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None.

CONFLICT OF INTEREST STATEMENT

The authors have no pertinent conflicts of interest to report for this manuscript.

DATA AVAILABILITY STATEMENT

Data sharing not applicable to this article as no datasets were generated or analyzed during the current study.

ETHICS STATEMENT

None.

CONSENT

Written informed consent was obtained from the patient to publish this report in accordance with the journal's patient consent policy.

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