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Marchiafava-Bignami disease as a cause of visual hallucinations

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Alcohol is one of the most used addictive substances worldwide and its dependence constitutes one of the most important causes of morbidity and mortality, accounting for 5.9% of all deaths.¹ Alcohol has two types of effects on the brain: direct, by acting on neurotransmitters and electrolytes; and indirect, such as through encephalopathy or coagulopathies. Some conditions, such as Marchiafava-Bignami disease (MBD), are associated with chronic alcoholism, but it is still not clear whether directly or indirectly.²

A 52-year-old woman was admitted to our institution with a 10-day history of visual hallucinations – complaining of dead people and cameras inside her house – and cognitive impairment. There were no focal neurological signs nor associated delirium. An extensive clinical interview revealed a sustained pattern of excessive daily alcohol consumption – predominantly red wine – for more than 5 years, arising after her daughter's marriage. Computed tomography (CT) of the head showed a hypoattenuating lesion affecting the genu and splenium of the corpus callosum. Further investigation by magnetic resonance imaging revealed a T2-hyperintense lesion with restricted diffusion involving the entire corpus callosum, without swelling or enhancement, suggestive of MBD (Figure 1). The patient was treated with B-complex vitamins (thiamine, 300 mg three times a day for 14 days, and folic acid, 5 mg/day). Low-dose quetiapine was also administered, later replaced by olanzapine 5 mg/day, and contributed to slight improvement. The patient continued to experience episodes of visual hallucinations after

discharge, although less frequently. Oral thiamine therapy (300 mg/day) was maintained after discharge.

MBD is a rare condition associated with chronic alcoholism, with only a few reports in non-alcoholic individuals. It most commonly affects middle-aged men with a history of chronic alcohol abuse or malnourishment. MBD is characterized by progressive demyelination and thinning of the corpus callosum, affecting mainly the genu and the splenium, that can even progress to focal necrosis.³

In acute MBD, patients may present with seizures or coma, whereas patients with chronic MBD usually exhibit cognitive deficits, hallucinations, or depression lasting for several months. MBD can also coexist with Wernicke's encephalopathy, Korsakoff's syndrome, osmotic demyelination syndrome, and Morel's laminar necrosis, which are also associated with chronic alcoholism.²

Imaging is crucial to the diagnosis. CT may reveal focal or diffuse hypoattenuating lesions involving the genu and the splenium as well as in the periventricular area. Magnetic resonance studies usually depict non-edematous T2-hyperintense lesions, sometimes with focal areas of necrosis. In the acute phase, there can be peripheral enhancement on postcontrast studies, and lesions exhibit restricted diffusion.³

Heinrich et al.⁴ proposed an imaging-based classification in which the type A corresponds to diffuse callosal involvement, whereas type B, which carries a better prognosis, includes only partial lesions.

Acute stroke, extrapontine myelinolysis, lymphoma, and psychiatric disorders should be considered in the differential diagnosis.

No specific, proven therapy is available for MBD. Treatment is mainly symptomatic, with the administration of B-complex vitamins and folate. The role of antipsychotic drugs is not established. In the patient reported herein, their use contributed to slight symptomatic improvement. Alcohol avoidance is mandatory.⁵

Prognosis is variable, ranging from a very unusual complete recovery to death.⁵ Despite meeting criteria for type-A disease, with a worse prognosis, our patient experienced a slight recovery, with some episodes of visual hallucinations persisting.

This rare case, made even more unusual by its occurrence in a female patient, highlights the importance of a thorough clinical evaluation and imaging studies in the detection of such an infrequent cause of psychiatric symptoms.

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Disclosure

The authors report no conflicts of interest.

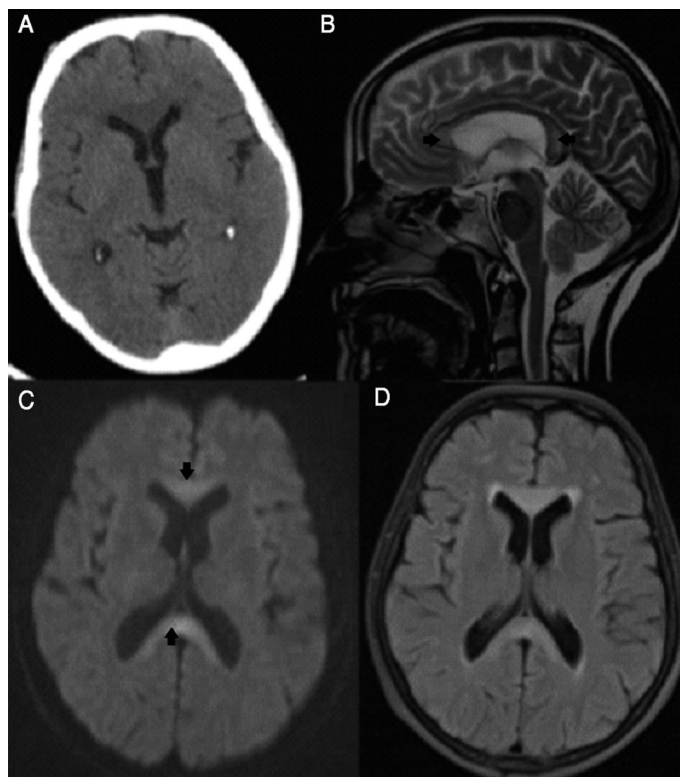


Figure 1 A) Axial computed tomographic image (soft-tissue algorithm) showing a hypoattenuating lesion involving the genu of the corpus callosum. B-D) Brain magnetic resonance images: B) sagittal, T2-TSE; C) axial, diffusion-weighted imaging (DWI); D) axial, T2-FLAIR. Hyperintense lesions involving the entire corpus callosum were seen on T2-TSE and T2-FLAIR sequences. The same lesions were also hyperintense on DWI, with a low apparent diffusion coefficient reflecting restricted diffusion.

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Spirituality or religiosity: is there any difference?

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We read with interest the letter published by Dr. Abayomi¹ concerning our article entitled “Religious beliefs and alcohol control policies: a Brazilian nationwide study.”² We agree that cultural values, personality, and stressful

life events can have an important influence on alcohol use. In our study, the population was predominantly composed by Catholics (67.3%), followed by Evangelical Protestants (23.3%). These religious affiliations usually have stronger opinions regarding public policy than do other religious traditions, including advocating for more restrictive alcohol policies.² There are distinct differences in alcohol use between religious traditions, as we reported in a recent article.³ For instance, Afro-Brazilian religions (i.e., Umbanda) utilize alcohol in their rituals, whereas some Brazilian Protestant Evangelicals forbid its use entirely, whether for religious or non-religious purposes.

With regard to the concepts of spirituality and religiosity and their measurement, we agree that these are distinct constructs, sometimes difficult to distinguish. According to Koenig et al.,⁴ spirituality is “the personal quest for understanding answers to ultimate questions about life, about meaning and about relationship to the sacred or transcendent, which may (or may not) lead to or arise from the development of religious rituals and the formation of community.” Several authors have examined relationships between spirituality, religiosity, and mental health, with varying results. For example, King et al.⁵ investigated associations between a spiritual or religious understanding of life and psychiatric symptoms in 7,403 people in England. They found religious people were similar to those who were neither religious nor spiritual