

CASE REPORT

A case of Wernicke encephalopathy in a dementia caregiver: The need for nutritional evaluation in family caregivers

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Abstract

A 63-year-old woman had started caring for her mother with dementia 6 months previously. A loss of appetite had appeared 2 months prior to her visit. Neurologically, she experienced mild unsteadiness, but she was fully conscious and had no ocular symptoms. MRI examination of her head did not reveal any notable findings. From these symptoms, the possibility of thiamine deficiency was considered, and her unsteadiness disappeared within a few days after an intravenous injection of thiamine. The burden of caring for a dementia patient may affect the nutritional status of the family caregiver.

KEYWORDS

caregiver, dementia, thiamine deficiency, Wernicke encephalopathy

1 | INTRODUCTION

The provision of care is a constant stressor that causes both physical and mental stress in the family caregiver.¹ However, the nutritional status of the caregiver, particularly issues related to the intake of vitamins, has seldom been discussed.²

Thiamine, in its biologically active form thiamine pyrophosphate, is an essential coenzyme for oxidative metabolism.³ As the human body cannot synthesize thiamine internally, thiamine must be ingested from food. The limit of thiamine storage in the human body is only 18 days.⁴ Therefore, the body can become thiamine deficient through a loss of appetite lasting for a few weeks. A continuing thiamine deficiency can lead to the neuropsychiatric disorder Wernicke encephalopathy (WE).^{5,6} The classical symptoms of WE are altered mental status, ataxia, and ophthalmoplegia. This disorder is reversible if properly diagnosed and treated with parenteral thiamine

administration. If left untreated, however, it causes severe and irreversible brain damage (Korsakoff syndrome).⁵ Thiamine deficiency (TD) is recognized in various kinds of disease with associated loss of appetite including diabetes mellitus,⁷ cancer,^{8,9} and dementia.¹⁰ However, no cases have been observed in family members caring for patients with dementia.

Here, we report a case in which a family member caring for her mother with dementia developed WE during the course of care.

2 | CASE REPORT

A 63-year-old woman consulted our psychiatric outpatient clinic complaining of difficulty in providing care.

Six months prior to her visit she had started living at home with her mother because of her mother's diagnosis of vascular dementia.

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However, coping with the symptoms of dementia in her mother resulted in considerable fatigue. For this reason, she determined that it was difficult to continue care at home and she sent her mother to a nursing home 2 months prior to her visit. However, even after her mother entered the nursing home, she frequently requested her daughter visit her, and thereafter, the caregiver came to feel even more physically fatigued.

The caregiver's appetite began to decline when she moved her mother into the nursing home, dropping initially to about 70% and then to about 30% of normal from 10 days before her visit to our clinic.

Physical examination at the time of consultation revealed general malaise. Neurologically, she showed mild unsteadiness, but she was fully conscious and had no ocular symptoms. MRI examination of her head did not reveal any notable findings (Figure 1). Psychiatrically, neither depression nor a loss of motivation was observed.

Her medical history revealed that she had been diagnosed with breast cancer eight years previously. She was not receiving any anticancer drugs at the time of her visit and had not revealed any signs of recurrence during her follow-up. She had also been diagnosed with depression 9 years earlier. She was still visiting a psychiatric department, but her mental state was stable because of medication and psychotherapy. She had no history of alcohol or drug dependence.

Based on the finding that the patient had experienced a loss of appetite from 2 months prior to her visit and had developed unsteadiness of gait, we considered that the patient may have been suffering thiamine deficiency, and thiamine 100 mg was administered twice intravenously, resolving her unsteadiness within a few days. Her serum thiamine level, as measured using high-performance liquid chromatography, was abnormally low at 21 ng/ml (reference range: 24–66 ng/ml). Her vitamin B12 and folic acid level were within the reference range. Further, no other blood biochemical abnormalities were found to explain the above-mentioned pathological condition. Based on these findings, she was diagnosed with WE. Thereafter,

she experienced no further episodes of unsteadiness of gait. Her standard of daily living returned to the same level as before she began caring for her mother.

3 | DISCUSSION

We experienced a case of WE in a family member caring for a dementia patient. This is the first reported case of WE resulting from thiamine deficiency because of the burden of dementia care. As WE may develop because of thiamine deficiency, as in this case, it may be necessary to consider the nutritional status of family members caring for patients with dementia in the future.

The symptoms of WE are nonspecific, and it is often difficult to diagnose this condition. In particular, when there is no characteristic background factor, such as heavy alcohol consumption as in this example, it can be difficult to notice in a clinical setting. Moreover, clinical awareness may also be delayed in the case of a caregiver. In this case, the diagnosis of WE was triggered by the patient's loss of appetite and unsteadiness. The diagnosis of WE should be performed clinically as in this case report, but MRI can be used supportively (sensitivity is 50%, specificity is 90%).⁶ Further, our diagnosis was also based on the fact that thiamine stores in the body are depleted in as little as 18 days.⁴

In the present case, the unsteadiness was resolved within a few days of the intravenous administration of thiamine; however, recovery of unsteadiness may be delayed.⁶

4 | CONCLUSION

This report emphasized the fact that the burden of caring for a dementia patient affects the nutritional status of the caregiver. Thiamine deficiency should be one of the items considered as a nutritional issue in such caregivers.

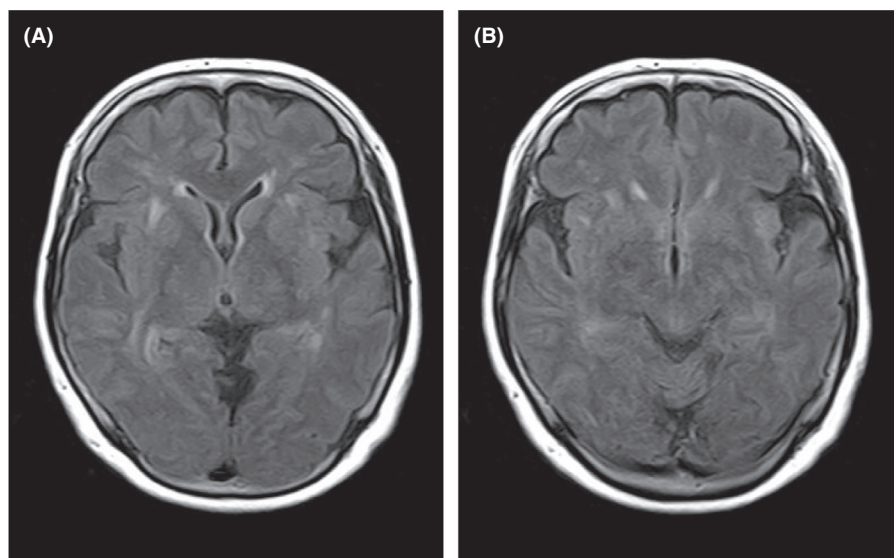


FIGURE 1 Axial Fluid Attenuated Inversion Recovery (FLAIR) MRI at the level of thalamus (A) and midbrain (B) showing no signal abnormalities

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CONFLICT OF INTEREST

The authors have stated explicitly that there are no conflicts of interest in connection with this article.

CONSENT FOR PUBLICATION

Written informed consent was obtained from the patient for the publication of this case report. Our institution does not require approval of institutional ethics committee for case reports.

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