Unveiling the Shadows: Thiamine Deficiency Manifesting As Sudden-Onset Blindness in a patient Patient with With Leukemia

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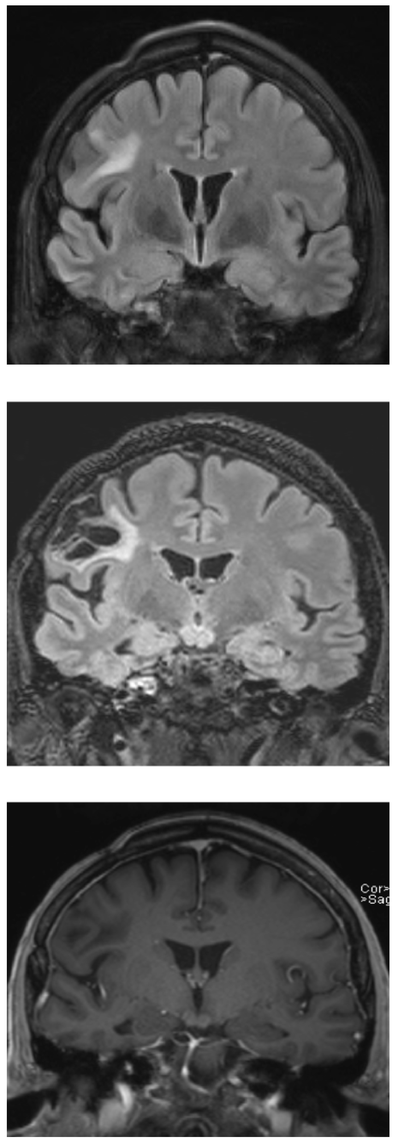
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INTRODUCTION

- Wernicke's encephalopathy (WE), traditionally attributed to thiamine deficiency (TD), is increasingly being identified in non-alcohol-related conditions, including cancer.
- WE can result in severe neurological dysfunction.
- Here we describe a patient with Philadelphia chromosome-positive B-cell acute lymphoblastic leukemia (Ph+ B-ALL) who developed abrupt bilateral blindness due to TD and emphasize the diagnostic challenges encountered in patients with cancer.

CASE REPORT

- A 56-year-old female was diagnosed with B-ALL and treated with hyper-CVAD and dasatinib.
- Despite achieving remission after cycle 1B and dasatinib dose reduction, she continued to experience severe anorexia, diarrhea, and recurrent infections requiring multiple hospitalizations.
- Cycle 2A was delayed, and dasatinib was held as a result.
- She developed sudden-onset bilateral blindness 10 days later.
- Her ophthalmological exam was normal, and a neurological examination revealed a slight loss of vibratory sensation.



MR images demonstrate a) lack of abnormality in the region of mamillary bodies on T2 weighted images during the episode of blindness. b) 8 days later, a repeat MRI demonstrates abnormal signal abnormality of the mammillary bodies on T2 weighted FLAIR image and enhancement on the post contrast T1-weighted images (c)

CASE REPORT

- Cerebrospinal fluid analysis and initial brain imaging results were unremarkable.
- A repeat head MRI 8 days later showed enlarged mammillary bodies, suggestive of TD, subsequently confirmed by undetectable vitamin B_1 level. IV thiamine replacement led to rapid vision recovery within 3 days.
- Research indicates that TD is widespread among patients receiving cancer-directed therapy for hematological malignancies.
- A high index of suspicion for TD is necessary for timely diagnosis and empiric thiamine replacement prior to TD confirmation to prevent permanent neurological damage.
- Imaging findings cannot reliably rule out TD but may be helpful for TD diagnosis if positive.

CONCLUSION

- Our case emphasizes the importance of considering nutritional deficiencies in the differential diagnoses of atypical neurological findings among patients undergoing treatment for hematological malignancies, and the variability of MRI findings in the early stages of WE.

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