Teaching NeuroImage: Nonalcoholic Wernicke Encephalopathy

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Figure Brain MRI

Diffusion-weighted imaging shows symmetrical hyperintensities in the mammillary bodies (A) and the dorsomedial thalami (B). Fluid-attenuated inversion recovery shows hyperintensities in the periaqueductal area (C, solid arrow; F, box), the mammillary bodies (D, F; solid arrows), the medial thalami (E; solid arrows), and superior and inferior colliculi (C, F; outlined arrows).

A 40-year-old woman with chronic gastritis who did not have alcoholism had lost 50 pounds in the past 45 days and presented with dyscoordination and diplopia. Examination showed confabulation, ophthalmoplegia, nystagmus, and appendicular ataxia. Brain MRI (Figure) showed diffusion-weighted imaging and fluid-attenuated inversion recovery abnormalities suggestive of Wernicke encephalopathy (WE). With classic triad of WE and MRI findings, IV

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thiamine 500 mg TID was administered for 3 days, followed by maintenance oral thiamine. The patient showed substantial improvement. Thiamine replacement therapy should be considered in patients with malnutrition or malabsorption as it is important in maintaining cellular osmotic gradients. Thiamine deficiency may lead to cytotoxic edema, especially in high metabolic demand regions such as thalami and mammillary bodies.¹

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Appendix Authors

Name	Location	Contribution
Grant Hansen, BS	Texas Tech, University Health Sciences Center, Lubbock	Drafting and revising of the manuscript, participated in data acquisition and interpretation

Appendix (continued)

Name	Location	Contribution
Eunjee Kim, BA, MBA	Texas Tech, University Health Sciences Center, Lubbock	Drafting and revising of the manuscript, participated in data acquisition and interpretation
Smathorn Thakolwiboon, MD	Texas Tech, University Health Sciences Center, Lubbock	Critically reviewing the manuscript, contributed to the drafting and revising of the manuscript, conceptualization of the work
Jongyeol Kim, MD	Texas Tech, University Health Sciences Center, Lubbock	Contributed to the drafting and revising of the manuscript, conceptualization of the work, and supervision

Reference

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