Brain MRI findings in Wernicke encephalopathy

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A 71-year-old woman with myelofibrosis on chemotherapy experienced an acute illness with nausea, vomiting, and diarrhea. Two weeks later, she developed an acute confusional state characterized by disorientation and fluctuating alertness with normal speech and language. Her neurologic examination demonstrated an upper motor neuron pattern of right hemiparesis. She reported double vision though ophthalmoparesis was not appreciated. Her gait was normal. While hospitalized, she developed generalized tonic-clonic seizures. Brain MRI revealed a small area of restricted diffusion of the left precentral gyrus (figure). She was diagnosed with a stroke with secondary seizures; however, as the confusional state resolved, she developed profound retrograde and anterograde amnesia. Review of the brain MRI showed high T2 signal in the medial thalamus and contrast enhancement of the mamillary bodies; a diagnosis of Wernicke-Korsakoff syndrome was entertained and she was started on thiamine replacement. The encephalopathy and hemiparesis resolved though she remains severely amnesic.

Wernicke encephalopathy often presents without the full prototypical triad of mental status changes, ataxia, and ophthalmoplegia, necessitating a high index of suspicion. Recurrent vomiting or chronic diarrhea and cancer and chemotherapeutic treatments are predisposing factors.¹ Symmetric increased T2 signal in the thalami, mamillary bodies, tectal plate, and periaqueductal area are the most common imaging findings; contrast enhancement of the mamillary

Figure Brain MRI findings in Wernicke encephalopathy

(A) Increased T2 signal on a T2-weighted axial slice is noted in the paraventricular medial thalami (arrow). (B) Post-contrast T1-weighted imaging shows enhancement of the mamillary bodies (arrow). (C) Diffusion-weighted imaging (DWI) demonstrates restricted diffusion in the left precentral gyrus (arrow).

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bodies may be the only sign, though enhancement of the other structures can occur as well.² Cortical lesions are uncommon and often associated with a poor prognosis.² Of those who survive, about 80% will develop Korsakoff syndrome.¹

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