

Teaching NeuroImage: Concomitant Brain and Spine Lesions due to Multiple Nutritional Deficiencies

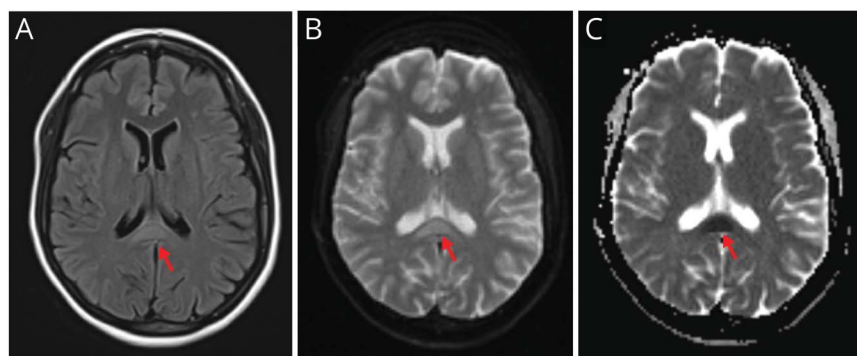
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Figure 1 Brain MRI With Splenium of the Corpus Callosum Lesion



(A) Hyperintense T2/fluid-attenuated inversion recovery signal and (B, C) fluid restriction on diffusion-weighted imaging/apparent diffusion coefficient.

A 28-year-old vegetarian woman with pernicious anemia developed progressive leg spasticity and psychosis leading to food paranoia and severe malnutrition. She presented with encephalopathy, anemia, hypoalbuminemia, and severe deficiency of zinc and vitamins B₁, B₆, and B₁₂. MRI revealed a lesion of the splenium of the corpus callosum (figure 1) and spinal cord changes (figure 2). This case shows a combination of findings associated with vitamin deficiencies: corpus callosum (B complex, Marchiafava-Bignami disease)¹ and spinal cord (B₁₂, subacute combined degeneration).² Primary demyelinating, autoimmune, and metabolic disorders (Cu, vitamin E) were ruled out given the clinical context and workup. After treatment, the psychosis resolved; the spasticity and weakness improved.

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Disclosure

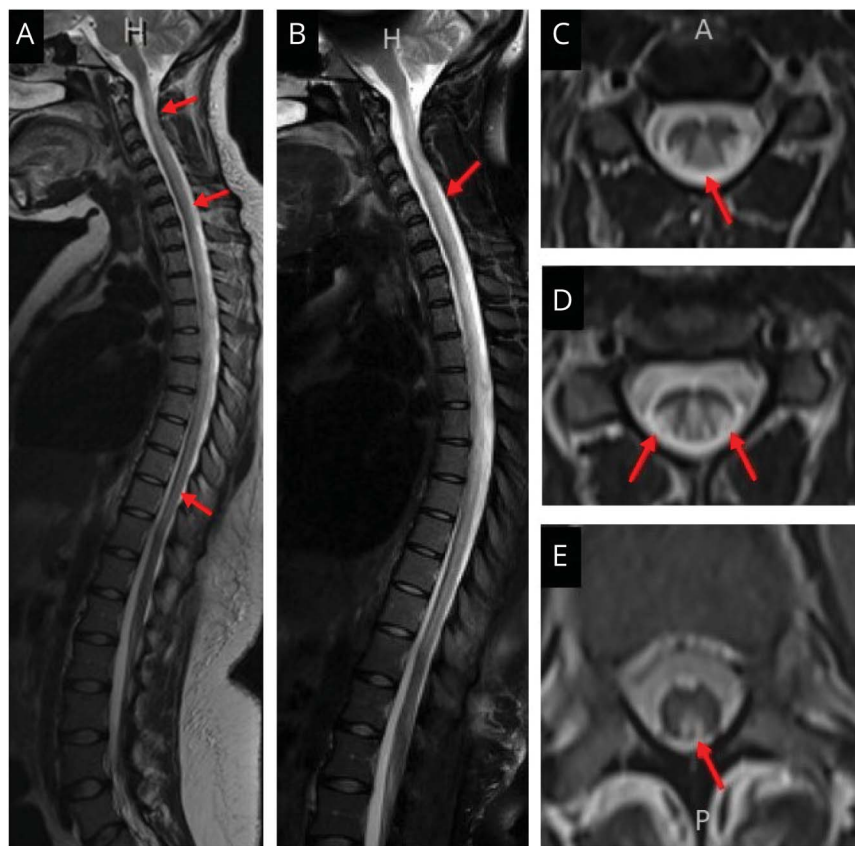
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Figure 2 Spine MRI Shows Involvement of the Posterior Cord (Dorsal Column) and the Lateral Tracts (Including the Corticospinal Tracts) Spanning the Entire Cord



(A, B) Sagittal section demonstrates the characteristic “inverted V sign” at the level of the cervical spine (C, D) and the lumbar spine (E).

Appendix Authors

Name	Location	Contribution
Qasem N. Alshaer, MD	Department of Neurology, Emory University, Atlanta, GA	Writing the report, acquiring and preparing the scans
Rocio Garcia-Santibanez, MD	Department of Neurology, Emory University, Atlanta, GA	Conceptualizing and editing the report

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