LETTER TO THE EDITOR

To The Editor

Severe Adulthood Leukoencephalopathy: Highlighting Brain Adaptability to Insult

Leukoencephalopathy refers to disorders primarily affecting the white matter of the brain and generally present with progressive symptoms depending on underlying cause and pattern of white matter involvement.[1]Leukoencephalopathies first diagnosed in adulthood are relatively uncommon but are important to recognize given the inherited nature of these disorders and potential for therapeutic management that may impact clinical course.[2] Here, we report a case of incidentally found, idiopathic adulthood leukoencephalopathy with striking imaging findings.

A 66-year-old right-handed man with past medical history of type 2 diabetes was rear-ended by a truck resulting in significant back and neck discomfort, for which he sought care in local emergency department. Prior to the accident, our patient was fully functional in all activities of daily living and operating his own business. Neurologic exam was notable for difficulty following multistep commands, ocular motor apraxia, and simultagnosia. He had normal strength and coordination, while gait was relatively normal with stooped posture.

Computed tomography (CT) head obtained in the emergency department revealed diffuse white matter changes, which prompted magnetic resonance imaging (MRI) of the brain visualizing prominent white matter volume loss and cavitary lesions consistent with dysmyelination or diffuse cystic leukodystrophy. Notably, there was relative preservation of the cerebral cortex and deep gray nuclei. Figure 1 shows both the CT head and MRI brain imaging findings.

Our patient had no known perinatal injury or developmental difficulties as a child. He graduated from high school. Family history was negative. He had an extensive negative evaluation

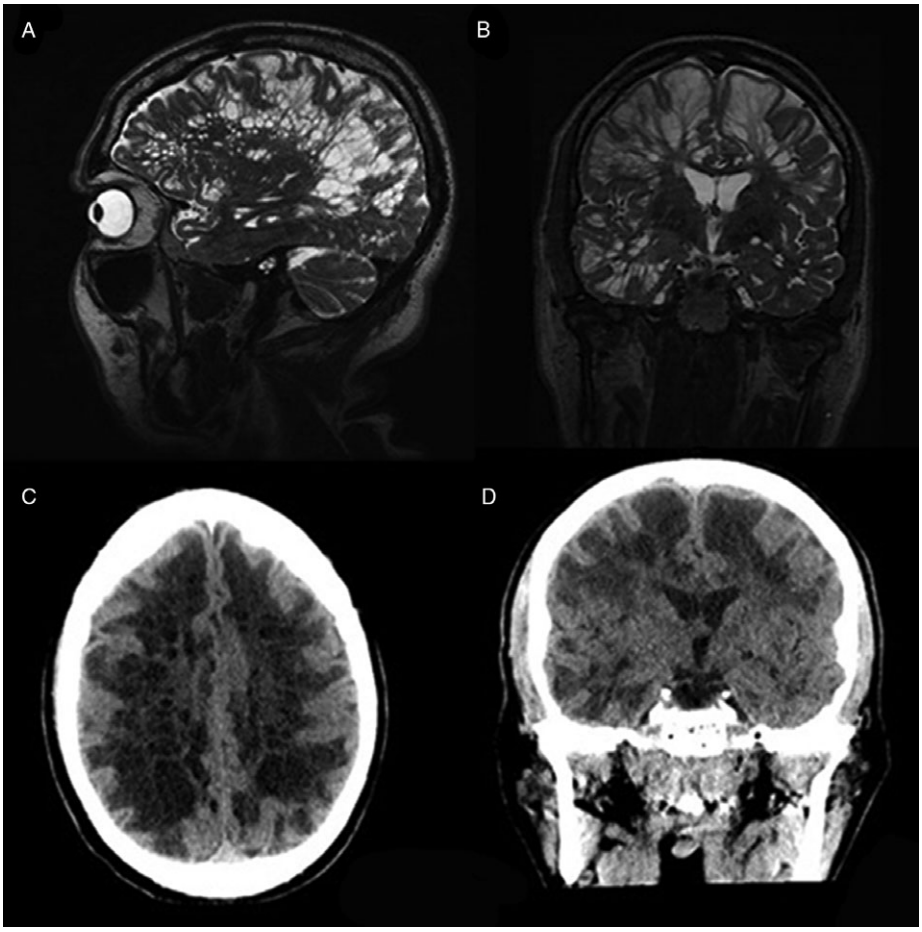

Figure 1: (A) *Sagittal and* (B) *Coronal T2-weighted MRI images showing diffuse white matter volume loss and cavitary lesions consistent with dysmyelination or diffuse cystic leukodystrophy.* (C) *Axial and* (D) *Coronal CT head images during initial presentation that revealed chronic-appearing diffuse white matter hypodensities and cystic changes. CT findings prompted further workup.*

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including: vitamin B12, methylmalonic acid, homocysteine, beta galactosidase, creatinine, liver function tests, thyroid stimulating hormone, lysosomal storage disease screen, amino acid profile, acylcarnitine, and carnitine profile, very long chain fatty acid profile, and CoQ10. A 69-gene inherited leukoencephalopathy panel was negative.

He continues to live a fully functional life despite the marked imaging findings. Although workup regarding the underlying etiology of imaging findings has been nonrevealing, they appear similar to a diffuse cystic leukodystrophy[3] or leukoencephalopathy with vanishing white matter.[4,5] This patient case provides clinical evidence of the remarkable adaptability of the human brain to insult.

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Conflict of Interest

The authors declare no conflicts of interest.

Statement of Authorship

BJN and IDC drafted and revised the manuscript for intellectual content.

Bryan J Neth
Department of Neurology, Mayo Clinic, Rochester, MN, USA

Ivan D Carabenciov
Department of Neurology, Mayo Clinic, Rochester, MN, USA

Correspondence to: Bryan J Neth, Department of Neurology, Mayo Clinic, 200 1st Street SW, Rochester, MN 55905, USA. Email: Neth.Bryan@mayo.edu

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