Magnetic Resonance Imaging Corticospinal Tract Hyperintensities in Progressive Supranuclear Palsy

The Neurohospitalist
2015, Vol. 5(2) 89-90
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DOI: 10.1177/1941874414554302
nhos.sagepub.com

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Keywords

movement disorders, progressive supranuclear palsy

This 77-year-old male with probable progressive supranuclear palsy (PSP) diagnosed in 2011 was admitted from a nursing home following a fall. Examination demonstrated parkinsonism, axial rigidity, limited downgaze with 10 degrees of vertical excursion, and slow, hypometric saccades. Repeat imaging was obtained to exclude acute injury. Prior magnetic resonance imaging (MRI) had not shown any evidence of corticospinal tract (CST) degeneration, and the patient exhibited no signs of alternative pathology on clinical examination.

Neuroimaging in PSP may show atrophy of the midbrain tegmentum with sparing of the pons, the hummingbird sign, which is reported to be highly sensitive in PSP.¹ Corticospinal tract degeneration has been described with motor neuron diseases, such as amyotrophic lateral sclerosis,² but is rarely reported with tauopathies.³ Although prior reports have linked CST degeneration and tauopathies,⁴ with 1 case describing MRI evidence of CST atrophy in a corticobasal degeneration patient,⁵ this is the first, to our knowledge, of PSP presenting with the evidence of CST degeneration. This supports growing evidence that tauopathies affect both pyramidal and extrapyramidal pathways.²⁻⁶

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

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Figure 1. A magnetic resonance imaging (MRI) of the brain showing a T1-weighted midline sagittal view (A) of a patient with the classic hummingbird sign of progressive supranuclear palsy (PSP); the pericallosal hyperintensity represents falx calcification. The accompanying axial fluid-attenuated inversion recovery (FLAIR) images show confluent T2 hyperintensities along the right corticospinal tract (CST) at the level of the precentral gyrus (B1), lateral ventricles (B2), internal capsule (B3), and cerebral peduncles (B4).