

Teaching Video NeuroImages: A patient with Holmes tremor due to demyelinating lesion of the inferior cerebellar peduncle

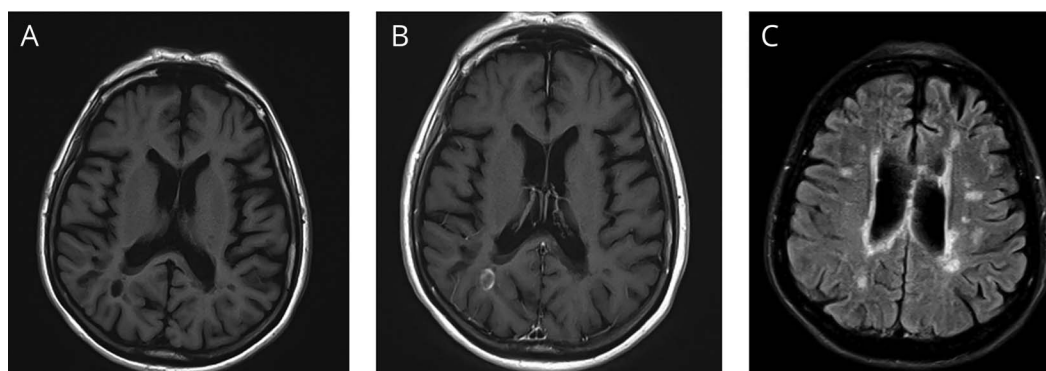
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Figure 1 Pre- and postcontrast T1 MRI sequences and fluid-attenuated inversion recovery (FLAIR) sequence



(A, B) Pre- and postcontrast T1 MRI sequences demonstrate an enhancing lesion. (C) Representative FLAIR sequence. The combination of enhancing and nonenhancing lesions confirms the diagnosis of multiple sclerosis.

A 60-year-old woman with a several year decline in gait and cognition developed a Holmes tremor in the weeks prior to presentation (video). Her right arm tremor predated the left arm tremor. She had no neurologic evaluation prior this presentation. MRI brain revealed lesions disseminated in time and space (figure 1) and CSF analysis revealed oligoclonal bands, confirming the diagnosis of multiple sclerosis.¹ We implicate a lesion in the left inferior cerebellar peduncle (ICP) with associated fluid-attenuated inversion recovery hyperintensity in the contralateral inferior olivary nucleus in the pathogenesis of the left-sided rest, postural, and action tremor (figure 2). Lesions of the cerebellar circuits, including cerebello-thalamic and cerebello-olivary circuits, can manifest as a Holmes tremor.² Our case of Holmes tremor due to an ICP lesion completes the discourse between Drs. Albin and Savoiardo³ in 1998.

Author contributions

D.G. Di Luca: drafting/revising the manuscript, data acquisition, study concept or design, analysis or interpretation of data, accepts responsibility for conduct of research and final approval, acquisition of data. A. De Leon-Benedetti: drafting/revising the manuscript, accepts responsibility for conduct of research and final approval, acquisition of data. S. Williamson: data acquisition, accepts responsibility for conduct of research and final approval, acquisition of data. L.T. Irving: data acquisition, accepts responsibility for conduct of research and final approval, acquisition of data, study supervision. J. Margolesky: drafting/revising the manuscript, study concept or design, accepts responsibility for conduct of research and final approval.

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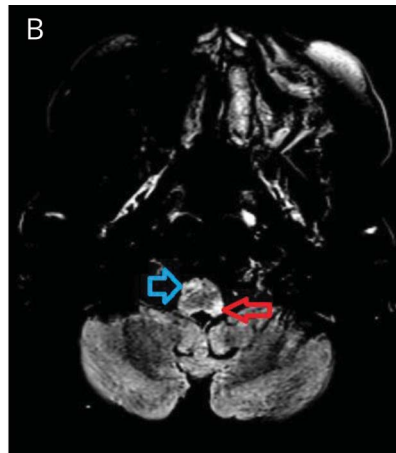
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From the University of Miami School of Medicine, FL.

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Figure 2 MRI T1 sequence and MRI fluid-attenuated inversion recovery (FLAIR) sequence



(A) MRI T1 sequence shows the right superior cerebellar peduncle (green arrow). (B) MRI FLAIR sequence shows a left inferior cerebellar peduncle (ICP) demyelinating lesion (red arrow) and FLAIR hyperintense lesion in the region of the right inferior olivary nucleus (blue arrow), possibly due to transsynaptic degeneration from the ICP lesion.

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Disclosure

The authors report no disclosures relevant to the manuscript. Go to Neurology.org/N for full disclosures.

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