

Teaching Video NeuroImages: Vertical one-and-a-half syndrome

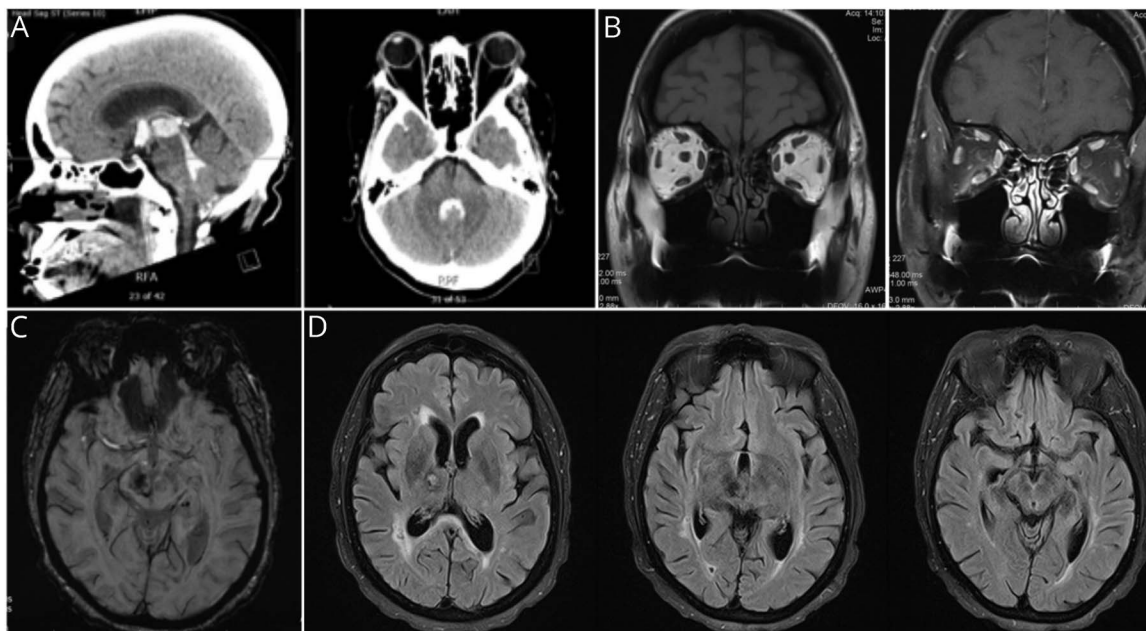
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Figure Right thalamomesencephalic stroke causing vertical one-and-a-half syndrome



(A) Sagittal (left) and axial (right) CT images show acute intraventricular, intrathalamic, and mesencephalic hemorrhage. (B) Coronal MRI slices show normal orbits (left: T1-weighted, right: T1-weighted fat-saturated postcontrast). (C) Susceptibility-weighted axial slice shows hemosiderin deposition and (D) T2-weighted fluid-attenuated inversion recovery images show volume loss in the right thalamus and midbrain months after the acute insult.

A 51-year-old woman with history of hypertension presented with left-sided weakness and diplopia. Imaging revealed a large hemorrhagic infarct involving the right thalamus and rostral midbrain with intraventricular extension (figure). Neuro-ophthalmic examination demonstrated bilateral upgaze palsy with limitation of infraduction on the right (video 1), overcome with a doll's head maneuver (video 2). Bilateral lid retraction was present with markedly reduced convergence along with convergence-retraction nystagmus. Vertical one-and-a-half syndrome is an uncommon presentation resulting from a unilateral thalamomesencephalic stroke with involvement of the rostral interstitial nucleus of the medial longitudinal fasciculus and posterior commissure¹ and was accompanied here by dorsal midbrain syndrome.

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Disclosure

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Appendix Authors

Name	Location	Role	Contribution
Laura Donaldson, MD, PhD	McMaster University, Hamilton, Canada	Author	Prepared the manuscript

Appendix *(continued)*

Name	Location	Role	Contribution
Edward Margolin, MD	University of Toronto, Canada	Corresponding author	Revised the manuscript for intellectual content

Reference

1. Bogousslavsky J, Regli F. Upgaze palsy and monocular paresis of downward gaze from ipsilateral thalamo-mesencephalic infarction: a vertical "one-and-a-half" syndrome. *J Neurol* 1984;231:43–45.

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