Teaching NeuroImages: Bilateral hypertrophic olivary degeneration following posterior circulation stroke

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Figure 1 MRI at the level of inferior olivary nucleus

(A) Fluid-attenuated inversion recovery and (B) T2 of brain in axial plane show swollen and hyperintense olives (white and black arrowheads) in the medulla.

A 40-year-old comatose man was brought to the hospital with a history of posterior circulation stroke 4 months earlier due to hypertension. On examination,

he had spastic quadriplegia, bilateral extensor plantar reflex, and palatal myoclonus. MRI revealed enlarged olives (figure 1) and chronic infarcts involving

Figure 2 MRI at the level of midbrain and pons

(A, B) T2, (C) sagittal T1, and (D) coronal T2 show chronic infarcts involving midbrain, pons, right cerebellar hemisphere, and bilateral temporal lobes.

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midbrain and pons (figure 2) suggestive of hypertrophic olivary degeneration seen after 4 months of insult. Hypertrophic olivary degeneration is a trans-synaptic degeneration involving interconnecting fibers of inferior olivary nucleus, red nucleus, and contralateral dentate nucleus forming the 3 corners of the Guillain-Mollaret triangle.^{1,2} Symmetric enlargement and T2 hyperintense olives help differentiate this entity from demyelination, tumors, and inflammatory processes.

AUTHOR CONTRIBUTIONS

Manchikanti Venkatesh: drafting/revising the manuscript, study concept or design, analysis or interpretation of data, accepts responsibility for final approval. V.R. Shiva Prasad: drafting/revising the manuscript, study

concept or design. S. Umar Basha: drafting/revising the manuscript. G.H. Jhansi Priya: drafting/revising the manuscript.

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