Teaching NeuroImages: Ondine curse syndrome caused by dorsolateral medullary stroke

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Neurology® 2020;94:e1557-e1558. doi:10.1212/WNL.00000000000009219

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Figure Dorsolateral medullary stroke in a 68-year-old man

Diffusion-weighted imaging sequence on MRI demonstrates a left dorsolateral medullary infarction consistent with a posterior inferior cerebellar artery stroke. There is notable involvement of the left medullary reticular formation with sparing of the pyramidal tracts.

A 68-year-old man with an acute left dorsolateral medullary infarction (figure) had recurrent episodes of hypercarbic respiratory failure with sleep during hospitalization. While awake, the patient ventilated adequately, but when asleep, the patient developed a severe respiratory acidosis (pH 7.14, pCO₂ >107) and became unarousable. He was intubated and his mentation improved rapidly. Eventually, he had a tracheostomy placed and continued to have prolonged apneic episodes with sleep during spontaneous breathing trials. The patient did not have central sleep apnea prior to the stroke.

Respiration is classified as voluntary, limbic, automatic, and reflex. Two centers in the medulla control automatic respiration: the dorsal respiratory center and the medullary reticular formation. A unilateral lesion in the dorsolateral medulla can lead to cessation of automatic respiration due to disruption of decussating bulbospinal pathways leading to central alveolar hypoventilation or the Ondine curse syndrome.¹

Study funding

No targeted funding reported.

Disclosure

The authors report no disclosures relevant to the manuscript. Go to [Neurology.org/N](https://www.neurology.org/N) for full disclosures.

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Name	Location	Contribution
Erin Fiedler, DO	Loyola University Medical Center, Maywood	Drafting/revising the manuscript, data acquisition, study concept or design, and analysis or interpretation of data
Rick Gill, MD	Loyola University Medical Center, Maywood	Drafting/revising the manuscript, data acquisition, study concept or design, and analysis or interpretation of data

Reference

1. Polkey MI, Lyall RA, Moxham J, et al. Respiratory aspects of neurological disease. *J Neurol Neurosurg Psychiatry* 1999;66:5–15.

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Neurology 2020;94:e1557-e1558 Published Online before print March 9, 2020

DOI 10.1212/WNL.00000000000009219

This information is current as of March 9, 2020

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