

# Teaching NeuroImages: Sleep-related periodic breathing in acquired central sleep apnea

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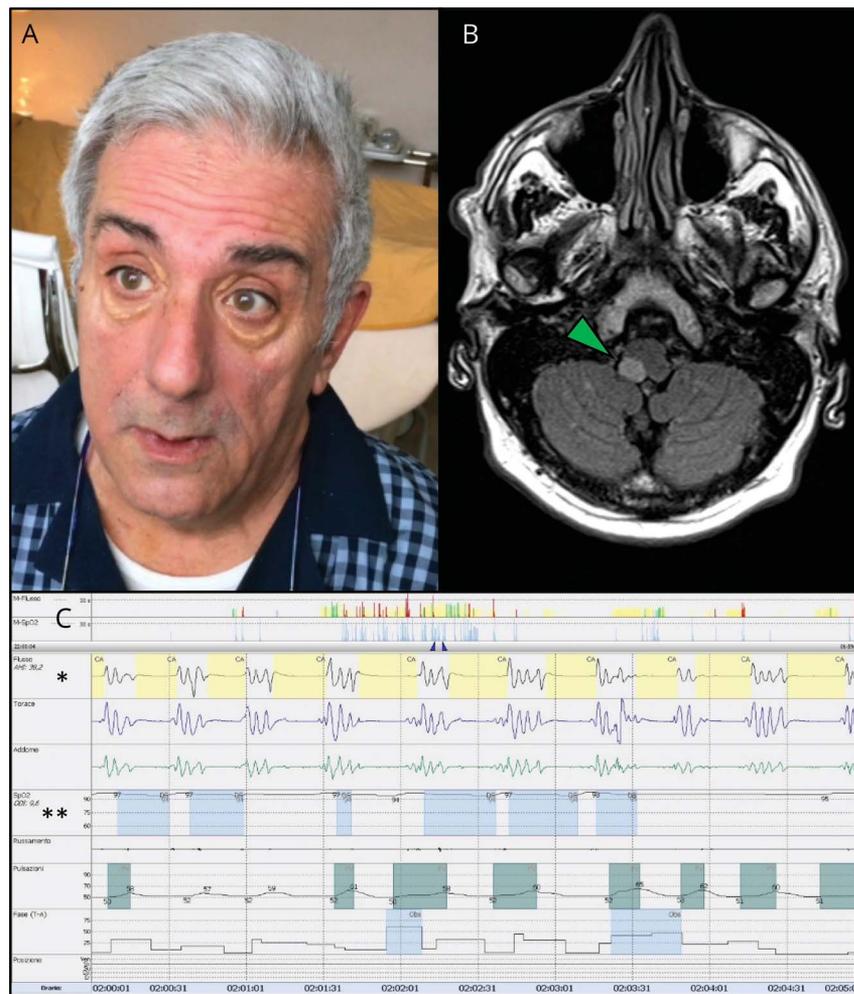
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## Figure Clinical, radiologic, and polysomnographic findings



(A) The patient is forcefully opening his eyelids, showing slight right eyelid ptosis and enophthalmos suggestive of Horner syndrome. (B) Brain MRI (fluid-attenuated inversion recovery sequence) reveals right upper dorsal medullary hyperintense lesion (arrowhead). (C) Polysomnography (5-minute recording) shows an ataxic (Biot) breathing pattern embedded with central apnea (\*airway flow), without significant blood oxygen loss (\*\*saturimetry).

A 68-year-old man complained of the subtle onset of postural instability. A detailed investigation revealed the presence of ataxia with pulling to the right, right face and contralateral (left) trunk and limb hypoesthesia, slight dysphagia, right eyelid ptosis, and enophthalmos (figure, A) caused by medullary infarct (figure, B) (Wallenberg syndrome). Due to snoring, the patient underwent polysomnography, which showed central sleep apnea with Biot breathing ataxia (figure, C). Biot periodic breathing is an irregular, gasping respiration caused by respiratory pacemaker lesions, observed in comatose patients with bulbar damage.<sup>1</sup> Here, Biot breathing presented in the context of central sleep

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apnea.<sup>2</sup> Medullary breathing control circuit lesions impair autonomic respiration, which is critical for nighttime respiration.

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### Disclosure

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