Restricted Diffusion of the Bilateral Inferior Olivary Nuclei After Severe Hypoglycemia

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Keywords

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A 43-year-old man with alcoholism and diabetes was found unarousable. Initial evaluation was notable for a serum glucose of 27 mg/dL and magnetic resonance imaging of the head revealing restricted diffusion limited to the bilateral inferior olivary nuclei (ION; Figure 1). He became arousable after dextrose infusion and was otherwise neurologically nonfocal without palatal myoclonus or progressive ataxia, which has been reported in roughly half of the patients with metabolic injury to the ION.¹ His hospital course was complicated by aspiration pneumonia and acute respiratory distress syndrome, requiring prolonged intubation. Injury to the bilateral ION can be lesional in the setting of pathology disrupting Mollaret

triangle or nonlesional in the setting of anoxia or metabolic insult.^{1,2} Hypoglycemia can cause excitotoxic neuronal death most commonly in the dentate gyrus, cerebellar Purkinje cells, and superficial cortical layers.^{3,4} This case highlights hypoglycemia as a rare precipitant of ION injury.

Declaration of Conflicting Interests

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Figure 1. Brain magnetic resonance imaging (MRI) showing restricted diffusion of the bilateral inferior olivary nuclei (ION) as hyperintensity on axial diffusion-weighted image (DWI; panel A) that correlated with hypointensity on apparent diffusion coefficient (ADC; panel B).

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