Hypertrophic Olivary Degeneration after Traumatic Subarachnoid Hemorrhage

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Stroke, brain tumor, or surgical treatments that damage the dentato-rubral-olivary pathway may cause hypertrophic olivary degeneration (HOD). However, HOD without damage to this pathway is quite rare (1). A 25-year-old woman was involved in a traffic accident in December 2011. Computed tomography revealed a subarachnoid hemorrhage (SAH) in the quadrigeminal cistern and cerebral sulci (Picture A, B) but no damage to the brainstem (Picture C, D) or the cerebellum. HOD was not discernible (Picture D). Limb and truncal ataxia appeared 3 months after the accident. Magnetic resonance imaging (MRI) showed degeneration in the left olive (Picture E-G) but no changes in the dentato-rubral-olivary pathway (Picture H, showing the pontine tegmentum). In July 2013, bilateral olivary degeneration became more evident (Picture I-K), but the pontine tegmentum remained normal (Picture L). Clinical and MRI findings

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have not revealed any changes.

Neurodegenerative, mitochondrial, and paraneoplastic diseases could be responsible for HOD, but this patient had no such diseases. Rather, her history strongly suggested that HOD was associated with the brain injury. Even without any radiological changes in the dentato-rubral-olivary pathway, head trauma and SAH can cause HOD and delayed ataxia.

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Reference