

Cryptogenic Posterior Circulation Stroke in a Young Adult - Utility of the HiNTs exam in the Emergency Department

Natalie Chen¹, Elizabeth L. Walters²

¹ Loma Linda University School of Medicine, Loma Linda, CA, United States

² Loma Linda University Department of Emergency Medicine, Loma Linda University School of Medicine, Loma Linda, CA, United States

CASE REPORT: The authors report a case in which a 23-year-old male with a history of migraines presents to the emergency department after waking up with a headache, vertigo, tinnitus, nausea and vomiting, six hours prior to arrival. Upon initial emergency department triage assessment, the patient passed the Fast Arm Speech Test (FAST) screening exam and a hyperacute stroke protocol was not activated. The complete neurologic assessment was unremarkable aside from an ataxic gait and a positive Romberg's sign. However, Head-Impulse-Nystagmus-Test of Skew (HiNTs) exam revealed findings consistent with a cerebellar lesion. Subsequent emergency department imaging via head and neck computed tomography angiography (CTA) revealed a left superior cerebellar artery occlusion with associated left superior cerebellar territory infarct and a tiny right cerebellar infarct. The patient was not a candidate for tissue plasminogen activator (tPA) or mechanical thrombectomy and was admitted to the neurology stroke unit.

Posterior circulation (vertebrobasilar) strokes are a less common cause of acute strokes, making up twenty percent of all cerebrovascular ischemic events¹. However,

posterior circulation strokes are three times more likely to be missed due to atypical symptoms² and have greater mortality and morbidity when misdiagnosed³. Furthermore, although early-onset strokes are uncommon⁴, typically documented causalities such as vasculopathies, cardiac defects, and hypercoagulable states are not found in up to fifty percent of these cases⁵. This case report serves as a reminder of the atypical presentation in posterior circulation stroke presentations as well as the cryptogenic nature of early-onset strokes and demonstrates the utility of the HiNTs exam in distinguishing cerebellar versus peripheral lesions in the Emergency Department.

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Send correspondence to: nachen@llu.edu

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