

Repetitive Episodic Isolated Vertigo in a Patient with Cerebellar Infarction

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Isolated vertigo is an important symptom of posterior circulation stroke. It has been reported that 11.3% of patients with isolated vertigo have a stroke and that most lesions are located in the cerebellum, particularly in the posterior inferior cerebellar artery. We report the case of a 63-year-old man with multiple atherosclerotic risk factors and atrial fibrillation who showed repeated episodes of isolated vertigo. His repeated vertigo was short-lasting and was often triggered by body position, mimicking benign paroxysmal positional vertigo. Cranial computed tomography on the third hospital day showed left cerebellar infarction within the territory of the posterior inferior cerebellar artery. The vertigo was ameliorated on the fifth hospital day and warfarin was prescribed for secondary prevention. Clinicians should pay special attention to cases in which a patient presents isolated vertigo, even if it shows transient recurrence or is triggered by a positional change, especially in patients with multiple cerebrovascular risk factors.

Key Words: Isolated vertigo—cerebellar infarction—positional vertigo—CPPV
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Introduction

Isolated vertigo is an important symptom of posterior circulation stroke;¹ however, it may be difficult to diagnose stroke if the vertigo is transient, repeating, or triggered by the patient's position. We report a case of recurrent transient isolated vertigo, which was finally diagnosed as cerebellar infarction.

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Case Presentation

A 63-year-old man developed repeated sudden-onset and clockwise rotary vertigo without any other vestibular symptoms, including deafness, ear fullness or tinnitus, in episodes lasting approximately 5 minutes each. Cerebrovascular risk factors included diabetes mellitus, hypertension, atrial fibrillation and atrioventricular block with pacemaker implantation. Upon examination, left-beating nystagmus was observed but the finger-to-nose test, heel-to-knee test and rapid alternating movement test did not reveal cerebellar dysfunction. However, the vertigo recurred during a gait test. Initial cranial computed tomography (CT) showed no evidence of stroke with equivocal cerebellar lesions (Fig 1A). Although he only presented vestibular symptoms, we started antithrombotic treatment based on his multiple risk factors including untreated atrial fibrillation. After admission, the same sudden-onset and short-lasting episodic vertigo recurred, often accompanied by horizontal left-beating nystagmus, but the frequency of episodic vertigo gradually diminished and was eliminated

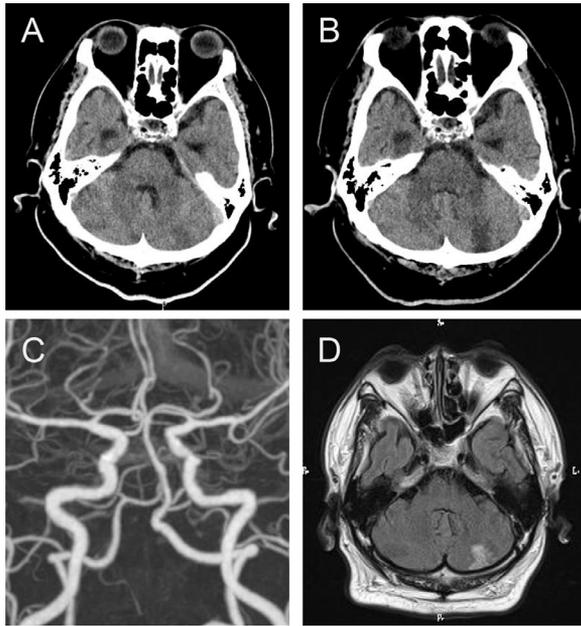


Figure 1. Computed tomography (CT) image showing an equivocal lesion in the cerebellum at the time of admission (A). CT image showing an evident infarction in the left cerebellum on the third hospital day (B). 3D-CT angiography showing neither stenosis nor obstruction in both the vertebral artery and the basilar artery (C). Magnetic resonance image showing the infarction in the territory of the left posterior inferior cerebellar artery (D).

by the fifth hospital day. On the third hospital day, CT revealed an apparent ischemic lesion in the left cerebellum in the territory of the posterior inferior cerebellar artery (PICA) (Fig 1B). He was finally diagnosed with cerebellar infarction with isolated vertigo. The vertigo spontaneously disappeared without specific treatment by the fifth hospital day. Three-dimensional-CT angiography demonstrated no evidence of the stenosis in both the vertebral and the basilar arteries (Fig 1C), and therefore warfarin was selected for secondary prevention. Brain magnetic resonance imaging performed 21 days after the onset showed only left cerebellar infarction, as detected on CT (Fig 1D).

Discussion

Patients with acute cerebral ischemic stroke involving the cerebellum or brainstem can present isolated vestibular symptoms without any other neurological symptoms, called isolated vertigo.^{1,2} The cerebellum, especially the medial branch of PICA, is the region responsible for most cases of isolated vestibular syndrome;³ 11%-20% of patients with isolated cerebellar

infarction presented with isolated vertigo mimicking peripheral vertigo.^{2,4} Although the infarct lesion in our case confirmed by magnetic resonance imaging on 21 day in hospital which involved the part of the PICA territory not including the medial branch, we considered that the ischemic lesion probably involved a larger region of the PICA territory, including the medial branch, at first, and then partial recanalization occurred, thereby fluctuating and gradually ameliorating the vertigo over the first 5 days. Isolated vertigo of vascular cause is characterized by acute-onset vertigo, head motion intolerance, spontaneous or gaze-evoked nystagmus, and a duration of 24 hours to several weeks.^{1,2} However, our case presented repeating episodic transient vertigo, which was sometimes evoked by body positional changes. Vertigo exacerbated by head motion, due to central nervous system lesions, has been referred to as central paroxysmal positional vertigo.^{5,6} The clinical characteristics of central paroxysmal positional vertigo are quite similar to benign paroxysmal positional vertigo and are often difficult to differentiate.⁷ Thus, when patients show repeated transient isolated vestibular symptoms with or without positional exacerbation, and have multiple cerebral vascular risk factors, clinicians should pay special attention to the possibility of acute stroke.

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