



## Case Report: A Large Cerebellar Infarction Case Who Presented with Transient Nonspecific Symptoms



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**Running Title** Large Cerebellar Infarction with Transient Nonspecific Symptoms

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## ABSTRACT

**Background:** The cerebellum is the most important portion of the brain, which audits our acts and establishes balance. Symptoms from a cerebellar stroke happen suddenly. In addition to specific cerebellar signs and symptoms, other common symptoms of a cerebral stroke include dizziness, headache, nausea, vomiting, double vision, tremor, and vertigo. These symptoms can be confused with other situations because they are nonspecific. In many cases, these symptoms are ignored.

**Clinical Presentation and Intervention:** Here, we report a case of an apparent healthy middle-aged man with a large hemispheric cerebellar infarction presented just with a new onset headache and transient mild and nonspecific symptoms including mild left side ptosis and relatively impaired tandem gait which resolved rapidly without obvious and permanent neurological problems.

**Conclusion:** Nonspecific symptoms should alert physicians to examine unusual manifestations of cerebellar infarction, which might be missed if they do not suspect it and do not examine accurately.

**Keywords:** Infarction; Cerebellum; Signs and Symptoms

## Highlights

- Nonspecific symptoms should alert physicians to examine unusual manifestations of cerebellar infarction, which might be missed if they do not suspect it and do not examine accurately.

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## Introduction

**T**he cerebellum is the most important portion of the brain, which audits our acts and establishes balance. It has a right side and a proportionate left side. Both sides control the balance of the body [1]. Cerebellar infarction is a kind of stroke in the territory of posterior cerebral circulation which is sometimes fatal because of reactive swelling in the posterior fossa and upward herniation or pressure on medulla oblongata [2].

Symptoms from a cerebellar stroke happen suddenly. In addition to specific cerebellar signs and symptoms, other common symptoms of a cerebral stroke include dizziness, headache, nausea, vomiting, double vision, tremor, and vertigo [3]. These symptoms can be confused with other situations because they are nonspecific. In many cases, these symptoms are ignored [2, 4].

Here, we report a case of an apparently healthy middle-aged man with a large hemispheric cerebellar infarction presented just with a new-onset headache and transient mild and nonspecific symptoms which resolved rapidly without obvious and permanent neurological problems.

## Case Presentation

The patient was a 56-year-old Iranian man who presented with an acute new-onset headache and vertigo starting 2 days prior to his admission to Namazi Hospital, affiliated to Shiraz University of Medical Sciences, south of Iran in 2108. He was a farmer without signifi-

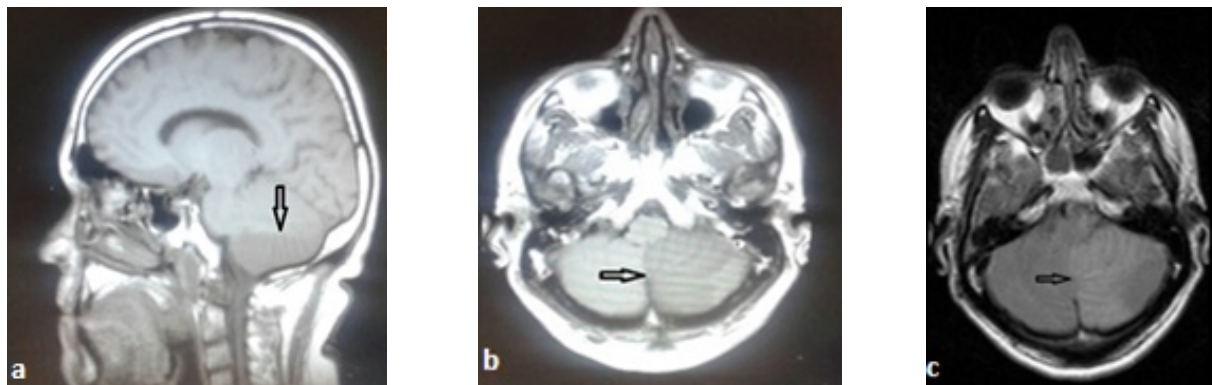
cant past medical history or drug history. On admission, the patient was awake, but had a headache and vertigo. He had no fever, and other vital signs were normal. In neurological examinations, very mild left side ptosis (without other signs of Horner syndrome like miosis and anhidrosis) was evident. In cerebellar examination, finger to finger, rapid alternative test and heel-to-shin test were normal; however, tandem gait was relatively impaired. The rest of general and neurological examinations were normal.

Laboratory tests including Complete Blood Counts (CBC), Blood Urea Nitrogen (BUN), serum creatinine, electrolytes, Erythrocyte Sedimentation Rate (ESR), CRP and liver function tests proved to be normal. Antibody for HIV virus was negative. In brain CT scan, a large hypodensity was observed in the left hemisphere of the cerebellum, not extending from the midline and in the territory of posterior inferior cerebellar artery (Figure 1). Also, sagittal and axial MRI views showed a well-defined hypointense lesion in the left inferior of the cerebellum (Figure 2).

With impression of cerebellar stroke, we started low-dose aspirin (80 mg), clopidogrel (75 mg) and atorvastatin (80 mg) and transferred him to the neurological intensive care unit for monitoring. After 48 hours of repeated evaluations, his ptosis was completely resolved and tandem gait significantly improved. A few days later, he was discharged from the hospital with a good status and prescribed oral medications.



**Figure 1.** Brain CT scan showed a large area of infarction in the left cerebellar hemisphere

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**Figure 2.** MRI sagittal T1 weighted a; axial T1 weighted; b; and axial FLAIR; c: views showed a well-defined large hypointense lesion in the left inferior cerebellum.

## Discussion

Cerebellar infarction is a type of stroke that sometimes presents with general and nonspecific symptoms such as vertigo or headache [5]. According to a 2015 review, they account for less than 10% of all strokes. Their real occurrence may be much higher since most cerebellar infarcts are small and may remain undiagnosed [6, 7]. Cerebellar infarcts presumably include the cerebellar cortex [8]. Most small cerebellar infarcts involve the cerebellar cortex, while larger cerebellar infarcts in general involve the cerebellar cortex and adjacent white matter [9].

The fatality in cerebellar infarcts is higher than that of other vascular sectors. That routinely leads to concomitant brainstem infarction, or compressive hydrocephalus, rather than cerebellar infarction by itself. Upward tentorial herniation is an unusual complication [10]. Thus, if cerebellar stroke is not diagnosed, is diagnosed late or is left untreated, ominous consequences and even death will happen and it can be life-threatening [5].

Therefore, careful attention to the patients' ability to move and control all parts of their body in the first minutes of examination is very critical to prevent life-threatening events. We believe that an accurate examination and a proper approach in the emergency room help the physicians to appropriately diagnose and decrease such effects. Patients, just like our patient, can present with a few common symptoms without any specific cerebellar signs at the first sight. Mathew et al. evaluated 26 patients with stroke, 13 of whom had an accurate diagnosis and could have an appropriate life after the treatment. In these patients, late complications and affected areas in their cerebellar infarction were less than those in other patients [11].

We examined our patient comprehensively; although he did not have any specific symptoms, we could make the right diagnosis, which helped us treat him as soon as possible. This important point has also been confirmed in other studies. Undoubtedly the time of stroke diagnosis is helpful for the patients [12]. Eckert et al. in 2002 reported 3 cases with hemorrhagic stroke, who were monitored and reported that paying attention to nonspecific symptoms at the right time could help the patients [13].

Initial symptoms of the patient in our study began with a sudden headache and mild vertigo. The diagnosis was made based on clinical and laboratory findings, and response to treatment. Thus, clinical presentations should be addressed as soon as possible to save patient's life. According to Oxford Handbook of Clinical And Laboratory Investigation, taking the history of patients correctly and timely, without ignoring any symptoms, even nonspecific symptoms in the patients, can be helpful for doctors to diagnose the stroke very accurately and help the people on time [14].

## Conclusion

Large hemispheric cerebellar infarctions can present with some nonspecific symptoms. Physicians should attend to the unusual manifestations of cerebellar infarction, which can be missed if they do not suspect cerebellar infarction and fail to examine accurately.

## Ethical Considerations

### Compliance with ethical guidelines

All the study procedures were in compliance with the ethical guidelines of the Declaration of Helsinki 1957.

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## Authors contributions

Writing draft of the article: Mohsen Gholami; Data gathering, critical revision: Maryam Poursadeghfard.

## Conflict of interest

The authors declared no conflict of interest.

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