Bedside Assessment of Acute Dizziness and Vertigo

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KEYWORDS

- Nystagmus • Vestibular neuritis • BPV • Meniere disease • Vestibular migraine

KEY POINTS

- Acute vertigo is accompanied by nystagmus that points to its underlying cause. A focused history and careful bedside examination (with emphasis on spontaneous and positional nystagmus characteristics and head impulse testing) yield the underlying diagnosis.
- An acute vestibular syndrome is a sudden severe and prolonged episode of vertigo that could be caused by vestibular neuritis or a stroke. Typical vestibular neuritis is characterized by peripheral nystagmus, a positive bedside head impulse test, absence of skew deviation, and normal hearing. If all 4 conditions are not met, a stroke should be considered.
- Recurrent positional dizziness is most often due to benign positional vertigo (BPV), which is characterized by exclusively positional, paroxysmal vertigo and nystagmus in the plane of the affected semicircular canal.
- Recurrent spontaneous vertigo lasting hours could be due to vestibular migraine, often accompanied by spontaneous horizontal, vertical, or torsional nystagmus, or by Meniere disease, which typically begins with ipsiversive horizontal nystagmus and later progresses to contraversive paretic nystagmus.
- Assessment of an acutely dizzy patient without a means of removing visual fixation is unrewarding, because spontaneous nystagmus is often missed.

Videos of a left peripheral vestibulopathy; cerebellar nystagmus; the effect of visual fixation on central and peripheral nystagmus; left posterior canal BPV; right horizontal canal BPV; nystagmus simulation created from 2-D video data; paroxysmal torsional downbeat nystagmus; and nystagmus simulation created from 2-D video data accompany this article at http://www.neurologic.theclinics.com/

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INTRODUCTION

Acute vertigo is equally unpleasant and anxiety provoking for frontline physicians and patients. Many physicians assessing a dizzy patient fear they might miss a life-threatening brainstem stroke, perform a brain CT that almost never yields useful information to exclude a central cause, administer antiemetics or vestibular suppressants, and discharge a patient from care without a clear diagnosis or treatment. During the past 150 years, the common causes of acute vertigo have been well characterized. With a focused history and careful physical examination, it is now possible correctly diagnose a majority of these disorders and offer useful treatment to patients presenting with acute vertigo. What questions must a clinician ask to determine the cause of vertigo? What might the physical examination reveal? What additional resources could help confirm the diagnosis? This review presents the essential history and bedside examination that can and should be performed in emergency departments, general practice, and outpatient clinics.

THE HISTORY

A focused history is a valuable contributor to a correct diagnosis. Sometimes a patient's opening sentence might provide the diagnosis. "I spin whenever I turn over to one side in bed" is an unmistakable history of BPV. When the open-ended history does not yield the diagnosis, the following key questions need to be addressed.

Is It Truly Vertigo?

Vestibular vertigo is an illusion of movement (spinning, rocking, or tilting) of oneself or one's surroundings and implies a left-right asymmetry in the neural activity of the vestibular nuclei. Light-headedness, fuzzy head, and presyncopal sensations are more commonly reported in nonvestibular dizziness. In an ideal world, the quality of dizziness should help separate vestibular from nonvestibular dizziness (postural hypotension, cardiac rhythm disturbances, syncope, anemia, hypoglycemia, hypercalcemia, vitamin B_{12} deficiency, medication effects, and anxiety). Yet, patients' descriptions are notoriously unreliable; therefore, it is best not to rely entirely on the reported quality of dizziness.[1]

Is It the First Ever Attack or Is It Long-standing Recurrent Vertigo?

The first ever attack of acute spontaneous vertigo lasting 24 hours or longer (also called an acute vestibular syndrome) is most commonly due to vestibular neuritis, which is a benign and self-limiting disorder; however, it could also be due to a cerebellar infarct, which is potentially life threatening. To separate these 2 different entities with a near-identical history, it is essential to learn to elicit the clinical signs of vestibular neuritis.[2,3] Episodic vertigo occurring over many years is harmless in origin and could represent BPV, vestibular migraine, Meniere disease, or vestibular paroxysmia. A recent history of recurrent episodes of vertigo, especially crescendo vertigo (episodes occurring with an increasing severity and frequency) lasting minutes, should ring alarm bells for posterior circulation transient ischemic attacks (TIAs).

Is It Spontaneous or Positional?

All types of vertigo worsen with head movement. Vertigo that is present at rest and worse with any head movement does not constitute positional vertigo. Vertigo that is absent at rest and is brought on only by lying down, turning over in bed, bending down, or arching back is likely to represent BPV. Less commonly, vestibular migraine and vestibular paroxysmia could also present with positional vertigo.[4,5] Postural

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