Dizziness and Vertigo

Jennifer Wipperman, MD, MPH

KEYWORDS

• Benign paroxysmal peripheral vertigo • Vestibular neuritis • Vestibular migraine
• Meniere's disease • Migrainous vertigo • Acute labyrinthitis

KEY POINTS

- Benign paroxysmal peripheral vertigo (BPPV) is the most common cause of vertigo. It is diagnosed using the Dix-Hallpike maneuver and treated with the Epley maneuver.
- Vestibular neuritis is a single episode of acute, severe vertigo. The head thrust test and visual fixation can help differentiate it from acute stroke. The mainstay of treatment is vestibular rehabilitation.
- Vestibular migraine manifests as vertigo accompanied by classic migraine symptoms, and responds to migraine medications.
- Over eighty percent of patients with Meniere's disease can be successfully managed with lifestyle changes and diuretics.

INTRODUCTION

Dizziness is a common and challenging condition seen in the primary care office. More than one-third of Americans see a health care provider for dizziness during their lifetime.[1] Although most dizziness is due to benign causes, life-threatening causes, such as a stroke or intracranial mass, also need to be excluded. Because "dizziness" is a vague term that can include a wide array of medical disorders, it is important to use a stepwise approach to differentiate between causes.

First, clinicians should distinguish between the four common types of dizziness: (1) presyncope, (2) disequilibrium, (3) psychogenic dizziness, and (4) vertigo. Patients should be asked to specifically describe their dizziness in their own words. Vertigo is a false sense of motion of either the environment or self. Often, patients describe a feeling of the room spinning or tilting. Benign paroxysmal peripheral vertigo (BPPV), vestibular neuritis, vestibular migraine, and Meniere's disease are the four most common causes of vertigo in ambulatory settings, and a thorough history and physical examination alone can lead to the diagnosis in most cases (**Table 1**).

BENIGN PAROXYSMAL PERIPHERAL VERTIGO

BPPV is the most common cause of vertigo. Patients typically report brief episodes triggered by head movement. A positive Dix-Hallpike maneuver is diagnostic, and

Department of Family and Community Medicine, University of Kansas School of Medicine - Wichita, 1010 North Kansas, Wichita, KS 67214, USA
E-mail address: jennifer.wipperman@viachristi.org

Prim Care Clin Office Pract 41 (2014) 115–131
http://dx.doi.org/10.1016/j.pop.2013.10.004 **primarycare.theclinics.com**
0095-4543/14/$ – see front matter

Table 1
Characteristics of common causes of vertigo

	BPPV	Vestibular Neuritis	Vestibular Migraine	Meniere's Disease
Time Course	Recurrent, lasting seconds	Single episode lasting days	Recurrent, lasting minutes to days	Recurrent, lasting hours
History	Brief, triggered by head movement	Subacute onset of severe, constant vertigo with significant nausea and vomiting	Previous history of migraine. Vertigo accompanied by migraine symptoms	Hearing loss, tinnitus and ear fullness
Nystagmus	Up-beating torsional	Horizontal or horizontal-torsional	Usually none	Horizontal or horizontal-torsional
Gait	Normal	Veers toward affected side	Abnormal during vertigo attacks	May have impaired gait and imbalance
Auditory Symptoms	None	Hearing loss (acute labyrinthitis)	None	Present
Diagnostic Findings	Positive Dix-Hallpike maneuver	Positive head-thrust test, Nystagmus suppressed by visual fixation	Vertigo attacks resolve with acute migraine medications	Repeat audiometry shows fluctuating, low-frequency hearing loss

canalith repositioning procedures (CRP), such as the Epley maneuver, are the mainstay of treatment.

Epidemiology

BPPV accounts for more than 40% of vertigo diagnoses seen in primary care, and is the most common cause of vertigo across the lifespan.[2] Patients with BPPV most commonly present between the fifth and seventh decades of life, and it is seen more commonly in women.[3] By 80 years of age, nearly 10% of adults have been diagnosed with BPPV during their lifetime.[4]

Risk Factors

A history of prior head trauma or prior vestibular disorders, such as vestibular neuritis, increases a patient's risk of BPPV. Osteoporosis and vitamin D deficiency have been associated with BPPV.[5] Recently, sleep position has also been correlated with BPPV, with patients who have BPPV being more likely to report lying on their sides with the affected ear down.[6]

Pathophysiology

It is hypothesized that BPPV is caused by loose calcium carbonate debris (otoconia) in the semicircular canals of the inner ear. With head motion, otoconia begin to move freely in the canals. When head motion stops, otoconia continue to move, causing endolymph to move against the hair cells of the semicircular canal. This leads to a false sense of motion that lasts until the otoconia settle, usually only a few seconds. The posterior canal is involved in 85% of cases, followed by the horizontal canal in 10% of cases.[7] Rarely, BPPV can be bilateral.