Dizziness: More than BPPV or Meniere’s

William J Garvis, MD
Otology, Neurotology & Skull Base Surgery
Ear, Nose & Throat SpecialtyCare of MN, PA
“Dizziness accounts for an estimated 5 percent of primary care clinic visits. The patient history can generally classify dizziness into one of four categories: vertigo, disequilibrium, presyncope, or lightheadedness. The main causes of vertigo are benign paroxysmal positional vertigo, Meniere disease, vestibular neuritis, and labyrinthitis.”
Dizziness
Dizziness: It is not the final term

Lightheadedness

Woosiness

Off balance

Unsteadiness

Weakness

Vertiginous
What is Vertigo?

Latin: *verter*--to turn

It is a sensation of *spinning*, or *whirling*, either of the individual or of the environment.

It does **NOT** imply giddiness, lightheadedness, imbalance or presyncope.
Epidemiology of Vertigo


12 month incidence 1.4%
12 month prevalence 4.9%
Lifetime prevalence 7.4%
Etiologies

**Otologic (50%)**
- BPPV
- Vestibular neuritis/Viral labyrinthitis
- Meniere’s Disease
- SSCCD
- PLF
- Acoustic tumor
- PPPD

**Neurologic (30%)**
- Vestibular Migraine
- VBI
- Cervical Vertigo
- Low CSF Pressure

**Others (20%)**
- Hypoglycemia, BP, arrhythmia, medication, B12 deficiency, anxiety, psychiatric
What do we see in practice based upon frequency

1. BPPV
2. Vestibular migraine
3. Vestibular neuronitis/viral labyrinthitis
4. Meniere’s disease
5. Retrocochlear tumors (i.e. acoustic neuromas)
6. Fistulae
BPPV

Episodic vertigo

Triggered by head movements with typically a few sec lag

Vertigo/nystagmus last 30 sec-2 minutes

Identified by Dix Hallpike test

Most easily treated

No evidence that medications help

www.vestibular.org
BPPV

www.jkma.org
What do we see in practice based upon frequency

1. BPPV
2. Vestibular migraine
3. Vestibular neuronitis/viral labyrinthitis
4. Meniere’s disease
5. Retrocochlear tumors (i.e. acoustic neuromas)
6. Fistulae
Vestibular Migraine

Migraine (14% of population)

MAV 1%

www.dizziness-and-balance.com
Vestibular Migraine

2nd most common cause of vertigo

Most often missed as diagnosis--chameleon

Vertigo, motion intolerance, diminished visual focus

Photo- and phono-sensitivity, spatial disorientation

Spontaneous vertigo with duration seconds to days, loss of balance, ataxia

Notable food and environmental triggers

Managed with pharmacotherapy, lifestyle modifications and vestibular therapy
### Vestibular Migraine

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Migraine Associated Vertigo</th>
<th>Meniere Disease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vertigo</td>
<td>May last &gt;24 h</td>
<td>Lasts &lt;24 h</td>
</tr>
<tr>
<td>Sensorineural hearing loss</td>
<td>Very uncommon; often low frequency; rarely progressive; fluctuates</td>
<td>Progressive; usually unilateral; fluctuates</td>
</tr>
<tr>
<td>Tinnitus</td>
<td>Unilateral or bilateral; rarely obtrusive</td>
<td>Unilateral or bilateral; often of significant intensity</td>
</tr>
<tr>
<td>Photophobia</td>
<td>Often present; may or may not be associated with dizziness</td>
<td>Never present unless a concurrent history of migraine exists</td>
</tr>
</tbody>
</table>

www.dizziness-and-balance.com
What do we see in practice based upon frequency

1. BPPV
2. Vestibular migraine
3. Vestibular neuronitis/viral labyrinthitis
4. Meniere’s disease
5. Retrocochlear tumors (i.e. acoustic neuromas)
6. Fistulae
**Vestibular Neuritis/Neuronitis/Labyrinthitis**

**Neuritis**—inflammation of nerve

**Neuronitis**—inflammation/damage to sensory neurons at vestibular (Scarpa’s) ganglion

**Labyrinthitis**—inflammation of labyrinth resulting in vertigo and hearing-related changes
Vestibular Neuritis/Neuronitis/Labyrinthitis

3rd most common cause of vertigo
7% of all cases of vertigo
Sudden onset of severe, incapacitating vertigo,
accompanied by unsteadiness, N/V
Unilateral horizontal nystagmus
Symptoms exacerbated with head movements
Usually resolves in a few days to weeks
Tx symptomatically
What do we see in practice based upon frequency

1. BPPV
2. Vestibular migraine
3. Vestibular neuronitis/viral labyrinthitis
4. Meniere’s disease
5. Retrocochlear tumors (i.e. acoustic neuromas)
6. Fistulae
Meniere’s Disease/Syndrome

Migraine (14% of population)

MAV 1%

MAV (1% of population)

Meniere’s Disease .05% population

www.dizziness-and-balance.com
Meniere’s Disease/Syndrome

[Diagram showing genetic, infection, vascular, dietary, allergy, autonomic, endocrine, autoimmune factors leading to endolymphatic hydrops causing episodic vertigo, fluctuating hearing loss, tinnitus, fullness]

www.dizziness-and-balance.com
Meniere’s Disease/Syndrome

Episodic vertigo, aural fullness, tinnitus, hearing loss

Spells last 20 min-hours (not shorter or longer than day)

Audiologic findings of fluctuant low-mid freq SNHL

Thought to be related to endolymphatic hydrops

Diagnosis of exclusion

Managed with low sodium diet, dietary changes, diuretics, Valium

Steroids, gentamicin injections, ELS surgery, inner ear over pressurization

www.earsite.com
What do we see in practice based upon frequency

1. BPPV
2. Vestibular migraine
3. Vestibular neuronitis/viral labyrinthitis
4. Meniere’s disease
5. Retrocochlear tumors (i.e. acoustic neuromas)
6. Fistulae
Retrocochlear tumors

Hearing loss, hearing distortion

Balance disorder, unsteadiness, vertigo

Tinnitus

Facial numbness

Diagnosis with MRI

Managed with observation, surgery and/or SRS
What do we see in practice based upon frequency

1. BPPV
2. Vestibular migraine
3. Vestibular neuronitis/viral labyrinthitis
4. Meniere’s disease
5. Retrocochlear tumors (i.e. acoustic neuromas)
6. Fistulae
Superior Semicircular Canal Dehiscence

Ear sensitive to sound and pressure

Vertigo and oscillopsia

Autophony, apparent CHL, hear eyeballs move

Developmental and perhaps related to BMI

Diagnosed with audiometry, VEMP testing and TB CT

Managed with surgical repair

www.vrtgoglavica.org.rs
Superior Semicircular Canal Dehiscence

www.earsite.com
Perilymphatic Fistula

Abnormal connection between inner ear perilymph and middle ear (often thru thin membranes which can rupture--RWM and OW/ stapes)

Similar issues as with SSCCD

More often seen with erosion of lateral SCC with cholesteatomas, but can be related to trauma or idiopathic

Identified with fistula test

www.dizziness-and-balance.com
Perilymphatic Fistula

www.earsite.com
So Now What?
Questions

1. Is there true vertigo?

2. Is it a first-event or long-standing recurrent vertigo?

3. Is it spontaneous or positional?

4. What is the duration of each spell?

5. What are associated symptoms?
Examination
Exam | Interpretation
--- | ---
Status | Alert and oriented?
Gait | May lean toward side of lesion
Romberg | Primarily proprioceptive
Tandem | Sway correlates more with front foot
F-N-F | Dysmetria--cerebellar dysfunction
<table>
<thead>
<tr>
<th>Exam</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sm Pursuit</td>
<td>Abnl indicates brain/cerebellar disease</td>
</tr>
<tr>
<td>FL:Nystag</td>
<td>Observe for spontaneous or gaze-evoked nystagmus</td>
</tr>
<tr>
<td>FL:Post HS</td>
<td>Nystagmus indicates vest. asymmetry</td>
</tr>
<tr>
<td>FL:HIT</td>
<td>Examines ipsilateral ear function</td>
</tr>
</tbody>
</table>
Dix-Hallpike Maneuver

www.ptpaul.com

www.emedicine.medscape.com
Fistula Test

Siegle Speculum

www.emedicine.medscape.com
Pearls of Treatment

R/O central causation--do a thorough neurologic exam

Listen to the pt--they’ll tell you nearly everything to reduce differential

Inquire about provocative measures

Be aware of vestibular migraine as a diagnosis

Don’t assume it’s BPPV, vestibular neuritis or Meniere’s
Pearls of Treatment

Be comfortable asking for neurology or ENT/Neurotology assistance

Make sure pt is not at risk for falls or injury

If you need to treat acute vertigo, use Valium, not Antivert

Vestibular therapy is often an integral component to therapy
Dizziness: More than BPPV or Meniere’s

Thanks for your attention