Dizziness: Background

- 90 million Americans will experience an episode of “dizziness” in their lifetime.

- For patients 75 or older, “dizziness” is the most common reason for visiting a physician. Only 9% of dizziness in pts >65 is vestibular.

- National Dizziness and Balance Center

Dizziness: Background

- 5.5% of population will develop vestibular symptoms in a year.

- About 15% of the population gets dizziness. Of these,
  - 40% have otologic dizziness
  - 10% have central dizziness
  - 25% have medical dizziness
  - 25% have undiagnosed dizziness

Objectives

- Dizziness: Vertigo vs other
- Causes of Vertigo
  - Central Vs Peripheral
  - 3 most common Otologic (ENT treated)
- Basic Pathophysiology of otologic vertigo
- Treatment
- Clinical Course
Dizziness

• Very Important

  Patient must describe what they mean!!

  Very generic term
  Make sure it is Vertigo

Dizziness: Description

Usually Non-Ear Related

• Dizzy
• Fatigued
• Lightheaded/faint
• Passed out/LOC
• Off balance
• “In a fog”
• “Just feel off”
• Confused
• About to pass out
• Not thinking straight
• “Can’t tie my shoes”
• Cannot concentrate

Possibly Ear Related: Vertigo

• Room spinning/moving
• Can see things moving around me
• My eyes are moving but I am not

Vertigo

• Definition:
  – Profound sensation/illusion of spinning/movement
  – Often visualized
  – Usually Debilitating if lasts more than few seconds

  The “too much to drink feeling”

Vertigo: Central vs Peripheral
Vertigo: Central vs Peripheral

**Causes**
- Central
  - Vascular insufficiency/stroke
  - Cerebellar degeneration
  - Chemicals/alcohol
  - Neurologic conditions
  - Trauma
- Peripheral
  - BPPV
  - Meniere’s
  - Vestibular neuritis
  - Labyrinthitis
  - Trauma

**Symptoms**

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Vascular Insufficiency</th>
<th>Central Nervous System</th>
<th>Peripheral Nervous System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dizziness</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Nystagmus</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Ear symptoms</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Neurologic signs</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Vestibular Signs</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Dizziness: Vertigo**

**History is most important diagnostic factor**
- Onset (abrupt/gradual)
- Length of room spinning
- Scenario (aggravating factors)
- Associated symptoms

**Dizziness: Vertigo**

**Testing:**
- None often
- Imaging occasionally
- ENG

**PE:**
- Nystagmus
- Ear
- Neuro
- Romberg/Fakud

**Dizziness: Vertigo**

- Audiogram (ENT)
- DDx:
  - Acute (concerning): stroke, TIA, mass!
  - There are no reasons for urgent eval of vertigo by ENT; these things are r/o by PCP’s, Neurology, ER
  - Any suspicion should lead to imaging and w/u
  - Non acute (everything else)

- Treatment:
  - Depends on cause
  - Try to avoid vestibular suppressants long term (meclizine)
  - Acute severe vertigo- send to ER for IVF and valium
  - There are no urgent treatments in the office

- **Depend on cause**
Treatment

• Referral
  – Vestibular Therapy
  – ENT
  – PCP
  – Neuro
  – Neurosurgery

Treatment: Vestibular Therapy

• Goal: Compensation

• Why don’t some people compensate:
  – Maladaptive postural control strategies
  – Use of vestibular suppressants (meclizine)
  – Relapse (decompensation)
    • Illness
    • Inactivity
    • Medication change
    • General anesthesia
  – Vestibular lesion is not stable (menieres)

Treatment: Vestibular Therapy

• Appropriate candidates:
  – Uncompensated unilateral peripheral lesions
  – Chronic BPPV
  – Disequilibrium of aging
  – Ablative vestibular surgery
  – Closed head injury

• Inappropriate Candidates:
  – Unstable vestibular lesions (Meniere’s)
  – No reliable provoking motion / change in body position
  – No postural control abnormalities

Vertigo: DDx

• Acute/Self limiting Causes:
  – Alcohol/Chemicals
  – Ear infections, Eustachian tube dysfunction (rare)
    • Fluid behind TM w/o infection does not cause
  – Trauma (can become chronic)
  – Illness (URTI)
### Vertigo- Chronic

**ENT Treated**
- Positional Vertigo
- Meniere’s Disease
- Vestibular Neuritis/Labyrinthitis
- Others

**Neurology/Other Treated**
- Vestibular Migraine
- Vertebro-basilar insufficiency
- Stroke/TIA
- Mass
- Chronic Motion intolerance
- Concussion
- Neurologic disease- MS, etc
- Other

### Vertigo: BPPV

- **Benign Paroxysmal Positional Vertigo**
  - Brief (<30sec) episodes of room spinning dizziness
  - Associated with Head Movements
    - Classic: rolling over in bed
  - No other associated symptoms
  - Able to move on with life after without issue
  - Seen after illness and trauma
  - Readily treated with Vestibular therapy

### Vertigo: BPPV

- 20% of all forms of vertigo
- Otolith dislodged from utricle and falls into semicircular canal
  - Usually posterior
  - <50 yrs age, trauma most likely cause

### Vertigo: Meniere’s Disease

- **Endolymphatic Hydrops**
  - Profound Episodes of room spinning dizziness lasting minutes to hours
  - Debilitating: on floor, nausea and vomiting
  - Lingers with sensation of not feeling well
  - Associated Symptoms:
    - Ringing, hearing loss and fullness in one ear during the episode
  - Dx of exclusion
  - Acute Treatment: ER (valium, IVF)
  - Chronic Treatment: Medical and Surgical
Vertigo: Meniere’s Disease

- Certain Meniere’s
  - Histopathological confirmation
- Definite
  - >2 episodes of vertigo with HL + tinnitus/fullness
- Probable
  - 1 episode of vertigo with HL + tinnitus/fullness
- Possible
  - Vertigo without other symptoms

Vertigo: Meniere’s

Vertigo: Vestibular Neuritis

- Room spinning/motion dizziness lasting days to weeks
  - Severe Episode often followed by a less severe sensation of continued imbalance for weeks
  - Often following a viral illness (4-6 wks later)
- Caused by viral infections or small labyrinthine vascular events
- Associated symptoms
  - None usually
  - Hearing loss can indicate labrynthitis (hearing loss with vertigo at onset)
- Treatment: Vestibular Therapy, steroids

Vertigo: Vestibular Neuritis

- Vestibular neuritis- vertigo without hearing loss
- Labrynthitis- sudden hearing loss and vertigo
**Vertigo Clinical Course**

- **BPPV**
  - Treated well with Vestibular Therapy
  - May Recur

- **Meniere's**
  - 2/3 control rate with diet and diuretics
  - Surgery 80% effective at 1 year (recurrence)

- **Vestibular Neuritis**
  - Often resolves on its own, Vestibular Therapy helps
  - Can have chronic balance effects

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## ENT Vertigo

<table>
<thead>
<tr>
<th>Duration Vertigo</th>
<th>Associated Symptoms</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPPV</td>
<td>Secs to 1 min</td>
<td>- With head movement; Rolling over in bed</td>
</tr>
<tr>
<td>Meniere's</td>
<td>Mins to hours</td>
<td>- Fluctuating Hearing loss; Stenosis, fullness in ear</td>
</tr>
<tr>
<td>Vestibular Neuritis</td>
<td>Hours to days (balance effects for weeks)</td>
<td>- Onset after illness; - Fall to side with walking</td>
</tr>
</tbody>
</table>

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**Vestibular Migraine**

- Common Cause in Women
- Photophobia key
- Mimics ENT vertigo

**ENT Vertigo: Pearls**

- History is key
  - Make sure it is vertigo!
  - Duration and Assoc Symptoms
  - Loss of consciousness = not Ear vertigo
  - Fluid behind ear does not cause vertigo

- Consider Vestibular Migraine
- Age >70, consider primary balance/aging issues
- BPPV is easily picked up in history, treated with Vestibular therapy

- Never a need for urgent ENT eval
  - TIA, stroke, mass are urgent and not w/u by ENT
  - Acute severe vertigo is treated in ER