Dizziness, Vertigo, Syncope

Neurology Lecture Series

**Dizzy!**

What does the patient mean... 

...edgy, drunk, faint, spinning, weak, diplopia, giddiness, blurred vision, imbalanced, weaving, staggering, “good”, “happy”, unstable, flat tire, difficulty with proprioception, pain in the joints, nauseous, woozy, tired, difficult concentrating, spinning, anxious, panicky, moving vision (oscillopsia), disoriented, sick, spacey, tired, silly, giggly, or light-headed?

**Definitions**

- **Ataxia** ... Difficulty coordinating movement
- **Disequilibrium** ... disturbance of balance
- **Dizziness** ... sensation of altered spatial orientation
- **Syncope/presyncope** ... temporary LOC (feeling faint)
- **Vertigo** ... sensation of movement
Some Causes: dizzy, vertigo

- Vestibular dysfunction
  - BPPV
  - Meniere’s disease
  - Vestibular neuritis
  - Chronic labyrinthine imbalance
- Proprioceptive dysfunction
  - Neuropathy – DM, alcohol, etc
  - Myelopathy – HIV, tumor
- Brain stem or cerebellum
  - Stroke
  - Tumor
  - Degenerative - MSA
  - Congenital – Arnold-Chiari
- Drugs
  - Aminoglycosides
  - Anticonvulsants
  - Sedatives
- Other
  - Hypothyroidism
  - Hyper or hypo-glycemia
  - Migraine, MS.

Therefore:

Learn to differentiate central from peripheral vertigo, and get a good medical and drug history (as always).

Peripheral or Central Vertigo?

<table>
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<th>Diagnosis</th>
<th>Direction of endolymph movement</th>
<th>Duration of attack</th>
<th>Sedation of vertigo</th>
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<td>Benign positional vertigo (BPV)</td>
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<td>Dix-Hallpike Maneuver</td>
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Case

- 66 year old man, who complained of sudden episodes of severe sensation of “spinning”. He noticed that rolling in bed in a “particular way” can precipitate the crisis. Each episode can typically lasts for about 40 seconds, but leaves him feeling tired. Denies any other symptoms, including dysarthria, dysphagia or diplopia.
- What is your differential diagnosis?
- What physical exam maneuver can help you diagnose this condition?

Benign positional vertigo (BPV)

- Very common disorder in those over 50 years
- Abnormal endolymph movement – misplaced otolith (otoconial debris)
- Short episodes of severe vertigo upon assuming certain head positions
- No tinnitus, hearing loss or neurological signs
- Patient is normal in between attacks
- Dix-Hallpike maneuver may trigger vertigo
- Repositioning maneuvers can help treat
**Case**

- A 73 year old woman, otherwise healthy, over the last few weeks developed episodes of vertigo, hearing loss and tinnitus. She complains of a sensation of fullness in her left ear. The vertigo spells last for several hours. On exam, her hearing is decreased on the left side. Otherwise, she has a normal exam.
- What is your differential diagnosis?
- How do you suggest treating her?

**Meniere’s Disease**

- Less common than BPV, but more incapacitating
- Endolymphatic hydrops (a compartment syndrome of the endolymphatic channels)
- Have tinnitus, monoaural fullness, fluctuating hearing and vertigo
- Induces progressive hearing loss
- 15% will develop Meniere’s in the other ear
- Consider Rx with using diuretics

**Vertigo Treatment Options**

- Vestibular suppressants
  - Meclizine
  - Benzodiazepines
  - Scopolamine (anticholinergics)
  - Histamine-1 blockers
  - Calcium channel blockers
  - Phenergan
- Repositioning maneuvers
- Diuretics
- Low salt diet

**Central Vertigo**

- Consider posterior fossa tumor or mass
- Get an MRI of brain (with contrast?)
- In the context of the localizing signs, do not do a lumbar puncture, until you have ruled out brain mass effect

**Duration of Vertigo, and Some Etiologies**

- Seconds...BPPV, partial seizures
- Minutes...vascular, CSF fistula
- Hours...Meniere’s, migraine
- Days...labyrinthitis, MS, stroke
Case

- An 82 year old, chronically hypertensive man has had several episodes of "dizziness". On one recent occasion he lost consciousness had fell, (his wife caught him before he hit the floor). Upon questioning further, you learn that the symptoms occur when he is getting up from a chair or bed.
- What signs would help make this diagnosis?
- What you need to consider as potential etiologies?

Syncope

- Transient loss of consciousness due to reduced cerebral blood flow
- Pre-syncope can have symptoms like
  - Dizziness, diaphoresis, nausea, visual blurring
- >90% cardiovascular – vaso-vagal reflex, arrhythmia, obstruction to flow, CHF, hypovolemia, orthostasis...
- Neurological causes (few and far between) include:
  - Seizures
  - TIA

Questions?