EM Basic- DIzziness

Triage and Nursing note- read them and make sure not to miss any other complaints like slurred speech, ataxia, extremity weakness, syncope, etc. **Check and address abnormal vitals**

What does the patient mean by dizzy?

-Dizzy= sensation of the room or person spinning
-Lightheaded= almost passing out = near syncope
    -Different workup for syncope
-Disequilibrium= loss of balance
    -Dizziness workup with low threshold for extensive testing
-Generalized weakness- ACS? Electrolyes? Low hemoglobin?
    -Different workup if it is weakness without dizziness

PEARL- Say to the patient "What do you mean by dizzy?"
"Does it feel like the room is spinning or like you are going to pass out?"
"Does it feel like you have lost your balance?"

History of dizziness

-Sudden or gradual onset?
-Recent onset or weeks to months?
-Dizzy all the time or just episodes?
-Have you had this dizziness before?
-What makes it better or worse?
    -Head or body position changes?
-Other neuro symptoms?
    -Limb weakness, ataxia, slurred speech
-Hearing loss or ringing in the ears (tinnitus)?

Most important question- is this peripheral or central vertigo?
Peripheral vertigo- caused by dysfunction in the ear/inner ear- mostly benign causes- (BPPV being most common)
Central vertigo- caused by something that is obstructing bloodflow- tumor, mass, intracranial bleeding, carotid dissection- serious pathology

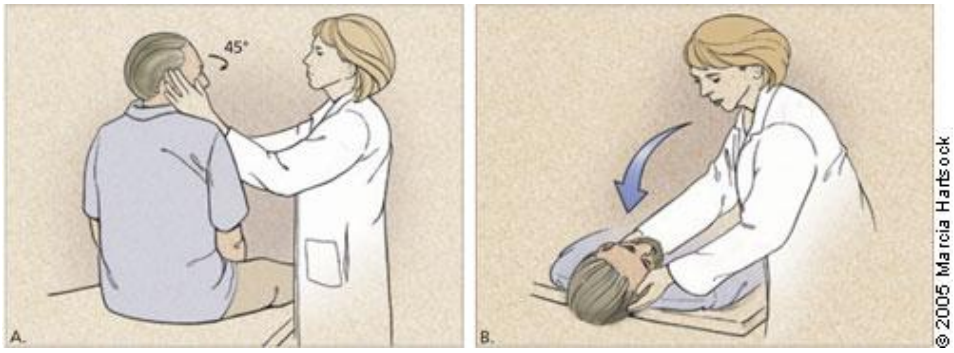
PEARL- In general, the worse the patient feels, the more sudden the onset, and it is episodes of dizziness instead of continous = peripheral vertigo

Peripheral vs. Central Vertigo- adapted from Rosen's 7th ed.

Characteristic	Peripheral Vertigo	Central Vertigo
Onset	Sudden	Usually gradual
Intensity	Severe	Mild
Duration	Seconds to minutes	Usually weeks to months
Nystagmus	Horizontal	Horizontal, vertical, or rotatory
Head position	Worsened by certain positions	No relation to position
Neuro findings	None	Usually present
Auditory findings	May have decreased hearing or tinnitus	None

Exam- do a complete exam including examining the ear and ear canal (foreign body, bulging TM, etc?)
Neuro exam- really focus on cerebellar testing (finger to nose, rapid alternating movements, pronator drift, and gait)
Extra-ocular movements- if extra-ocular movements induce patient's dizziness and resolves with visual fixation- it suggests BPPV
PEARL- patients with BPPV may have difficulty walking and positive Romberg as long as no neuro deficits and no red flags

Dix Hallpike Maneuver- drop head of bed, tell patient to fall backwards and turn head to one side, observe for symptoms or nystagmus- if positive, suggests BPPV



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Differental diagnosis of dizziness

Central Vertigo

Tumor/Mass/intracranial bleeding- history suspicious for a central cause of vertigo plus or minus an objective neuro deficit

Carotid or vertebral artery dissection- challenging diagnosis to make history of even minor head and neck trauma, plus or minus neck pain and neurological symptoms- non-contrast head CT followed by CT neck angiogram (with contrast)

Vertebero-basilar insufficiency- elderly patients with a sudden onset of vertigo and a history of atherosclerosis. Symptoms are more related to movement of their head rather than movement of their entire body. Usually a headache and a neruo deficit or syncope.

Cerebellar stroke- Dizziness and a neuro deficit or any patient who has what sounds like a central cause of vertigo. Should have a deficit in their cerebellar neuro, may have an abnormal gait. MRI is imaging of choice after a non-contrast head CT (see section on HiNTS exam)

Infection- meningitis, encephalitis, or brain abscess. Patient is febrile and toxic appearing with dizziness, plus/minus neck stiffness or meningismus. Non-contrast head CT followed by a lumbar puncture and aggressive antibiotic/antiviral treatment as indicated.

Peripheral vertigo

Benign Paroxysmysal Postional Vertigo (BPPV)- this is what we are usually talking about when we say "vertigo". BPPV tells you what it is- BPPV is benign, it has paroxysms or episodes, the vertigo is related to position, and its vertigo.

Acute otitis media- a patient with a lot of ear pain with a bulging tympanic membrane and viral symptoms. Rare in adults

Labrynithitis- a patient with dizziness plus hearing loss. Mild cases- outpatient with antibiotics, toxic patients- admit for IV antibiotics. Usually have preceding URI symptoms or the patient is taking ototoxic medications (example- aminoglycosides). Consider ENT consult

Perilymphatic fistula- sudden onset of dizziness and hearing loss that is worse with valsalva. Causes- congenital, barotrauma, severe coughing, retching, or direct ear trauma. Consider ENT consult

Meniere's disease- triad of dizziness, fluctuating hearing loss, and tinnitus that waxes and wanes over a period of years.

Ear canal foreign body- anything that irritates the tympanic membrane can cause dizziness

Lab Workup- usually low yield in dizziness, in older patients- consider CBC, Chem 10, UA, coags (if anticoagulated) to look for electrolyte abnormalities, UTI, etc.

Imaging- not needed in peripheral vertigo, if suspecting central causes of vertigo, start with non-contrast head CT.

PEARL- a head CT is not sensitive for cerebellar or posterior strokes (cranial bones cause scatter)- MRI is imaging of choice

HiNTS exam (Head impulse testing, Nystagmus, Test of Skew)- shown in one study to be superior to MRI in diagnosing posterior strokes- see EmCrit podcast 33 at http://emcrit.org/podcasts/posterior-stroke/

Medications

Meclizine (Antivert)-antihistamine with anti-emetic properties
Dose- 25mg PO twice a day, mildly sedating

Diazepam (Valium)- benzodiazepine
Dose- 5mg PO three times a day, very sedating- give sedation warnings (no alcohol, driving, etc.)

Ondansetron (Zofran)- anti-emetic- can be used in between doses of meclizine for vomiting if needed
Dose- 4 or 8mg PO/ODT every 6 hours as needed

Epley maneuver- can be helpful in patients who are having recurrent vertigo or they failed outpatient medications. Give patient a handout or have them search youtube for videos

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