Family Medicine Preceptorship
Discussion Cases
Dizziness

Learning Objectives:
- Discuss the differential diagnosis of the subjective complaint of "dizziness."
- Differentiate causes of "dizziness" based on history and exam findings.
- Identify appropriate use of laboratory testing, EKG, and diagnostic imaging in patients presenting with "dizziness."

Suggested Readings:
"Dizziness: Approach to Evaluation and Management". *Am Fam Physician.* 2017 Feb 1;95(3):154-162. http://www.aafp.org/afp/2017/0201/p154.html

"TiTrATE: A Novel Approach to Diagnosing Acute Dizziness and Vertigo". Neurol Clin. 2015 Aug; 33(3): 577–599. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4522574/

"Imprecision in Patient Reports of Dizziness Symptom Quality: A Cross-sectional Study Conducted in an Acute Care Setting". Mayo Clinic Proceedings. 2017 Nov; 82(11): 1329-1340. http://www.mayoclinicproceedings.org/article/S0025-6196(11)61411-0/fulltext

Case 1:
Jenny is a 22-year-old female who presents with "dizziness" concerns. She states the dizziness is intermittent and only lasts for seconds to minutes. Episodes are often provoked by rolling over in bed or backing her car out of her driveway. She has no dizziness problems in between these episodes and feels well today. Her examination is normal. She is otherwise healthy, denies tobacco use and only drinks alcohol on the weekends.

Question 1: What is the differential diagnosis of "dizziness"? How can you categorize the different types of dizziness, and what are the cardinal features of those categories?

- *The differential diagnosis is quite broad, and it is crucial to obtain a thorough history and perform a purposeful physical examination to narrow down the diagnosis.*
- *Lightheadedness (often categorized alongside presyncope): Typically described as feeling as if one is about to pass out, may be accompanied by nausea, sweatiness, generalized weakness, fatigue, and/or anxiety. May be provoked by rising from seated to standing position, or stressful event. Often caused by cardiovascular problems, vasovagal episode, blood pressure medications, anxiety.*
- *Vertigo: Typically described as a sense of motion or spinning. May be provoked by head movements or motion. Caused by problems in the vestibular system, or with the cerebellum.*
- *Disequilibrium: Typically described as feeling unsteady, off-balance, wobbly. Generally not related to position, may be more noticeable when patient closes their eyes. Often caused by peripheral neuropathy or movement disorders.*

Question 2: What aspects of the physical examination are important in evaluation of the dizzy patient?

Vital signs (particularly orthostatic vital signs), cardiac exam, musculoskeletal exam (particularly lower extremity strength and tone), neurologic examination (look for focal signs, examine for nystagmus, check vibratory sense and proprioception, consider Dix-Hallpike maneuver)

Question 3: What laboratory testing is needed, if any, in evaluation of patients with dizziness?

Lab tests may be ordered (for example you might suspect electrolyte abnormalities, thyroid problems, anemia, or intoxication) but are often not needed. They are probably not necessary in this case.

Question 4: How might the patient's age affect the likely differential diagnosis?

Older patients are potentially more likely to have developed serious neurologic problems such as peripheral neuropathy, parkinsonism, or cerebellar stroke than younger adults. Polypharmacy or cardiac abnormalities (such as bradycardia) may contribute to orthostatic hypotension.

Question 5: What is likely the cause of Jenny's dizziness?

Based on limited nature of symptoms, which are consistently provoked with movements, benign paroxysmal positional vertigo (BPPV) is the most likely cause of her symptoms.

Case 2:

Katherine is a 51-year-old female with history of hypertension, type 2 diabetes mellitus, and obesity who comes to your clinic for evaluation of "dizziness". Dizziness started about 3-4 weeks ago after her previous clinic visit with you for chronic disease management. She describes her dizziness as a sensation that she is going to pass out, particularly when she stands from sitting. She has not actually fallen or passed out yet. On exam her systolic blood pressure is 114/70 sitting and 90/60 when standing, and her symptoms are reproduced (she complains that "everything is going dim" while standing). Her neurologic exam is otherwise normal.

Question 1: What is the likely diagnosis? What likely caused this episode of dizziness?

Symptoms started after the last time this patient was seen for a chronic disease visit. It is important to review whether a new medication was started at that visit. It is likely that this patient has orthostatic hypotension related to a new blood pressure medication.

Question 2: What further testing does this patient require, if any?

Assessment of orthostatic vital signs is key.

Question 3: What can be done for management of this patient's dizziness?

Discontinuation of the medication that is causing symptoms and reassess in a few days to see whether symptoms have improved.

Case 3:

Orville is an 81-year-old man who comes to your clinic in the afternoon for evaluation of "dizziness". He describes this dizziness as a feeling that "the room is spinning". Symptoms started suddenly while sitting at breakfast and have been constant since this morning, and are associated with multiple episodes of vomiting. He was brought into clinic in a wheelchair, but he normally does not have problems ambulating. He reports vomiting several times this morning, and vomits twice in your exam room. On exam, he has nystagmus. Cardiac examination is

remarkable for an irregularly irregular heart rhythm. When he tries walking he immediately appears unsteady and falls to the right. Blood pressure is 185/100 sitting and 183/95 when standing.

Question 1: What is the likely diagnosis?

This patient is having symptoms/signs of central vertigo. In comparison with peripheral vertigo, patients with central vertigo tend to present with more severe symptoms, such as prolonged vertigo symptoms, persistent vomiting, and inability to ambulate due to severe gait instability.

Question 2: What are your next steps in diagnosis and management of this patient?

This patient requires urgent brain imaging, as he is having symptoms/signs of central vertigo. Given the acute onset of his symptoms, he is likely having a posterior circulation stroke. He has an irregularly irregular heart rhythm, suggesting he could have had an embolic stroke related to atrial fibrillation.

Question 3: What are “red flag” signs which suggest that brain imaging is needed in a patient presenting with dizziness?

Prolonged vertigo, persistent vomiting, severe inability to ambulate, and sudden onset in an older patient.