A Practical Approach to the Dizzy Patient
Aashish Didwania, MD

Learning Objectives

- Review the pathophysiology of the four major causes of dizziness
  - Highlighting vertigo
- Describe key components of the history and exam that can help determine the etiology
  - Highlighting benign paroxysmal positional vertigo (BPPV)
- Outline the treatment for BPPV

How do you know where you are in 3-dimensional space?

- Vision
  - Horizon
  - Rotation
- Labyrinth (inner ear)
  - Linear acceleration
  - Angular acceleration
- Sensation
  - Proprioception
  - Somatic (touch)

Example

You are sitting in a stationary train, looking out the window at an adjacent train. The other train begins to move and for a moment you are uncertain which train is moving.

Why?

Misperception of Motion

- Vision suggests motion is occurring
- Inner ear (vestibular system) hasn’t registered motion
- Somatic sensation (back against the seat) hasn’t registered motion
- The discrepancy between sensory modalities is disconcerting, and constitutes vertigo

Types of Dizziness

- Disequilibrium
- Pre-syncope
- Vertigo
- Psychogenic
History and Physical

History: What do you mean ‘dizzy’?
- Episodic vs constant
- Triggers
- Associated symptoms
- Medical conditions
- Medications

Physical
- Cardiovascular: Orthostatics
- Neurologic: Motor-sensory and Reflexes
- Dix-Hallpike

I. Disequilibrium

- Proprioception
- Pathological syndromes

I. Disequilibrium: Classifying Common Position Sense Disturbances

- Decreased Reflexes
- Variable Reflexes
- Increased Reflexes

I. Disequilibrium: Decreased Reflexes

- Diabetic neuropathy
- Subacute combined degeneration
  - Pernicious anemia
  - Idiopathic vitamin B-12 deficiency
- Hypothyroidism
- Chemotherapy (platinum; vinca alkaloids)
- Amyloidosis
- Tabes dorsalis
- Peripheral sensory neuropathy

I. Disequilibrium: Variable Reflexes

- Cerebellar disease
- Paraneoplastic syndromes
- Intoxication
  - Alcohol
  - Mercury
  - Lithium
- Infection
  - HIV
  - TB

I. Disequilibrium: Increased Reflexes

- Cervical Spondylosis
- Spinal Cord Tumor
  - Metastasis
  - Multiple myeloma
  - Primary CNS lesions
### II. Pre-Syncope

- Hypotension
  - Orthostasis
  - Cardiovascular drugs
- Arrhythmia
- Anemia
- Hypoglycemia
- Hypocapnia
- Neurotransmitter interactions

### II. Pre-Syncope

**We do it! (ie, drugs)**
- Vasoactive
- Opioids, tramadol, etc.
- Antidepressant
- Antianxiety
- Anticholinergic

**It happens**
- Aging autonomous nervous system
- Situations
- Anxiety
- Arrhythmia

### Hyperventilation Test

- Hallucination of motion
- Anatomy
  - Vestibular organ
  - Vestibular nerve
  - Vestibular nucleus

### III. Vertigo

**III. Vertigo: Classifying**

- Lasting Days or Longer
- Lasting Minutes to Hours
- Lasting Seconds to Minutes

**III. Vertigo: Lasting Days or Longer**

- Vestibular Neuritis
- Cerebellar Stroke
  - Postural instability
- Brain Stem Stroke
  - Neighborhood signs
III. Vertigo: Lasting Minutes to Hours

- TIA = Stroke
- Ménière’s disease
- Partial Seizure
- MS
- Migraine
- Perilymphatic Fistula

III. Vertigo: Lasting Seconds

**Benign Paroxysmal Positional Vertigo (BPPV)**

BPPV Incidence

- Most common cause of vertigo
- Incidence rises sharply after age 40

Typical BPPV History

**Situation:**
- Middle of the night when patient rolls over
- First thing in morning when gets out of bed
- Reclining chair (dentists or hairdressers)

**Description:**
- Spinning
- Starts seconds after position change
- Severe for 10-30 seconds
- Residual for several minutes
- Nausea is common
- Vomiting is unusual
- Recurs

Epley Maneuver for BPPV Affecting the Right Ear

1. Position head 60° below toward affected side
2. Turn toward opposite side
3. Turn face down
4. Sit upright

Pearls for Treating Vertigo

When do you use drugs to treat BPPV?
- **Don’t**
  - meclizine is not the antidote for vertigo

What do you do for a vertigo patient who doesn’t have BPPV?
- **Get a consult**
The existential essence of dizziness

Summary: Dizziness Types
- Disequilibrium
- Pre-syncope
- Vertigo
- Psychogenic

Summary: Disequilibrium
I. Proprioception disorder
II. Check reflexes
   - Increased – cord compression
   - Decreased – peripheral neuropathy
III. Postural abnormality - cerebellum

Summary: Pre-Syncope
I. Cardiovascular
II. Often cause not determined
III. Always consider drug effect

Summary: Vertigo
I. Duration very helpful
II. Lasting seconds to minutes: BPPV
III. Treat with Epley maneuver
IV. Avoid drugs
Summary: Psychogenic

I. Somatoform disorder
II. Affective disorders
III. Malingering

SUMMARY

Clinical Pearls

I. Always ask open ended initial question
II. Be quiet and listen
III. Never say the word "vertigo" until you are sure