Dizziness and Vertigo
A Neurologist’s Perspective

Paul M. Katz, M.D
Professor
Department of Neurology
Lewis Katz School of Medicine
Temple University
After Chest Pain and Fatigue

- Dizziness and Vertigo are the third most frequent complaint among medical outpatients.
- Usually benign – but may signal the presence of an important neurologic disorder
The diagnosis of dizziness or vertigo demands that the complaint be analyzed correctly:

- The nature of the disturbance of function being determined first.
- Then the anatomic localization

This classic approach to neurologic diagnosis is nowhere more valuable than in the patient whose main complaint is dizziness or vertigo.
Dizziness and vertigo are applied by the patient to a number of different sensory experiences such as:

- Feeling of rotation or whirling
- Weakness
- Faintness
- Light-headedness
- Unsteadiness
Dizzy or vertiginous spells may be reported as:

- Blurring of Vision
- Feelings of unreality
- Syncope
- Petit mal or other seizure phenomenon

Close questioning of the patient as to how he or she describes the dizziness or vertigo is key to the correct diagnosis.
Physiologic Considerations:

- Visual impulses from the retinas and possibly the proprioceptive impulses from the ocular muscles enable us to judge the distance of objects from the body.
- Impulses from the labyrinth, which functions as highly specialized spatial proprioceptors, register changes in the velocity of motion and position of the body.
- Impulses from the proprioceptors of the joints and muscles are essential to all reflex, postural, and volitional movements.
Vertigo may be accompanied by:

- Nausea and Vomiting
- Pallor
- Perspiration
- Difficulty walking
- Lying on one side with eyes closed tends to reduce symptoms

Loss of consciousness associated with vertigo usually signifies syncope or seizure.
Giddiness and Pseudovertigo

- Feeling of swaying
- Light-headedness
- Swimming sensation
- Feeling of uncertainty
- Walking on air
- Faintness
Giddiness and Pseudovertigo (con’t)

These symptoms are common in:

- Anxiety
- Hysteria
- Depression

Other Pseudovertiginous states:

- Anemia
- COPD
- Hypertension
Neurologic and Otologic Causes of Vertigo

- Seizure – vertigo as an aura indicates cortical involvement
- Oculomotor disorders
- Cerebellar lesions –
  - Decreased tone
  - PICA syndrome
  - Bilateral nystagmus
- Migraine Aura
Labyrinthine Vertigo and Meniere’s Disease

- Most common cause of true vertigo

- Meniere’s disease:
  - Recurrent attacks of vertigo
  - Fluctuating Tinnitus and Deafness
Meniere’s Disease

- Abrupt attack of vertigo
- Lasts minutes to hours
- Rotational vertigo so severe that patient cannot stand or walk
- Nausea/vomiting
- Hearing loss
- Nystagmus during attack

Treatment:
- Dramamine
- Meclizine
- Valium
Benign Positional Vertigo

- Paroxysmal vertigo and nystagmus
- Symptoms occur only with change in position
- Individual episodes last less than 1 minute
- Symptoms typically recur periodically for several days, months, or rarely years.
- Exam shows no abnormalities of hearing or other identifiable lesions in the ear or elsewhere
Benign Positional Vertigo

Diagnosis: Hallpike Maneuver

Moving the patient from the sitting position to lying position with head tilted 30 degrees over end of the table and 30 degrees to one side. After a few seconds this maneuver will provoke an intense paroxysm of vertigo, which is accompanied by oscillopsia and nystagmus.
Vestibular Neuronitis (neuropathy)

- Paroxysmal and usually a single attack of vertigo
- Absence of tinnitus and deafness
- Occurs in young to middle aged adults
- Antecedent URI
- Onset of vertigo is abrupt, associated with nausea, vomiting, and a need to remain immobile.
- Exam: absent caloric response on one side, nystagmus on the other side.
- Symptoms generally subside in several days, but minor symptoms of vertigo may last several weeks
Vertigo of Vestibular Nerve Origin

- Occurs with diseases that involve the nerve in the petrous bone or the cerebellopontine angle
- Vertigo is less severe than in labyrinthine vertigo
- Tinnitus and deafness are common
- V and VII nerve function may be affected by mass lesions
- Most common cause is acoustic neuroma
Vertigo of Brainstem Origin

- Vestibular nuclei and their connections are implicated
- Auditory function is nearly always spared
- As a rule vertigo, nausea, vomiting, and disequilibrium are more protracted with brainstem than with labyrinthishine lesions
- Nystagmus tends to be more persistent than that from peripheral lesions
Vertigo of Brainstem Origin (con’t)

- Central localization is confirmed by finding signs of involvement of other structures within the brainstem (cranial nerves, sensory, and motor tracts)

- Vertigo as the sole manifestation of brainstem disease is rare

- Basilar migraine – Vertigo followed by intense, unilateral, suboccipital headache and vomiting
Vestibular Support Drugs

- Acute Unilateral Vestibular Loss
  - Aprazolam
  - Meclizine
  - Scopolamine
  - Diazepam
# Therapeutic Medications for Specific Causes of Dizziness and Vertigo

<table>
<thead>
<tr>
<th>Medication</th>
<th>Condition</th>
<th>Dosage</th>
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<tbody>
<tr>
<td>Acetazolamide</td>
<td>Meniere’s Disease</td>
<td>250 mg bid or tid</td>
</tr>
<tr>
<td>Acyclovir</td>
<td>Ramsey Hunt Syndrome</td>
<td>400 mg 5Xdaily for 10 days</td>
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<tr>
<td>Fludrocortisone</td>
<td>Orthostatic Hypotension</td>
<td>0.1 – 0.6 mg/day</td>
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<tr>
<td>Midodrine</td>
<td>Orthostatic Hypotension</td>
<td>10 mg tid</td>
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<tr>
<td>Paroxetine</td>
<td>Anxiety</td>
<td>10 – 20 mg daily</td>
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<tr>
<td>Prednisone</td>
<td>Acute Vestibular Neuronitis</td>
<td>60 mg daily and taper over 10 days</td>
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<tr>
<td>Propanolol</td>
<td>Migraine</td>
<td>20 mg qid</td>
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<tr>
<td>Valproic Acid</td>
<td>Migraine</td>
<td>250-500 mg bid</td>
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Thank You