Red Flag Symptoms: Headaches and Dizziness in the Elderly

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Disclosures

☐ I have nothing to disclose.
Objectives

- 1. To provide a basic understanding of the common headaches that affect elderly patients
- 2. To familiarize on with the common treatments for headaches of the elderly
- 3. To compare and contrast the various causes of dizziness and lightheadedness seen in the elderly.
- 4. To familiarize one with the common treatments of dizziness and lightheadedness in the elderly.

References

References


References


Headaches in the Elderly

- Headaches in the elderly can be divided into primary and secondary headaches.
- The most common primary headaches of the elderly:
  - Tension Type
  - Migraine
  - Late Life Migraine Accompaniments
  - Cluster
  - Hypnic
Headaches in the Elderly

- Prevalence of headache type in elderly
  - Tension – 44.5%
  - Migraine – 11%
  - Chronic Daily Headache – 4.4%
  - Symptomatic Headache – 2.2%
  - Prevalence of migraine in elderly women 70 yrs old and older – 10%
  - Prevalence of migraine in elderly men 70 yrs old and older – 5%

Headaches in the Elderly

- Chronic daily headaches include:
  - Transformed migraine
  - Chronic tension headache
  - Hemicrania continua

- Transformed migraines were caused by the overuse of: ergotamines, caffeine, and barbituates.
Headaches in the Elderly

- Chronic tension headaches were often caused by medication overuse, from the following meds:
  - Acetaminophen
  - Aspirin
  - Codeine
  - Caffeine
  - Pain meds, both OTC and Rx’ed, used for other conditions will often cause a drug-induced headache

Headaches in the Elderly

- Other meds that induce headaches in the elderly:
  - Nitroglycerin - vasodilator
  - Nifedipine - vasodilator
  - Dipyridamole - vasodilator
  - SSRIs – fluoxetine, paroxetine, sertraline, citalopram, and escitalopram*
  - SNRI – Venlafaxine*
  - *Often used to treat migraines in younger patients
Headaches in the Elderly

- Common presenting symptoms of migraines in the elderly:
  - Scintillating scotomas
  - Traveling paresthesias
  - Transient visual field cuts
  - Speech disturbances

- Younger patients often present with a headache and nausea

Headaches in the Elderly

- Migraine symptoms typically last for 15 to 30 minutes whereas vertebrobasilar TIA symptoms last seconds to 15 minutes
- A headache and a family history of migraines occurs in about of 50% of elderly patients presenting with migraine symptoms.
Headaches in the Elderly

- Headaches may be seen as a preceding symptom of a posterior circulation stroke or TIA days to weeks prior to the Stroke/TIA
- Elderly patients presenting with headaches and focal neurological deficits often require a stroke/TIA work up and treatment

Headaches in the Elderly

- A severe onset headache (Thunderclap HA), can be seen in all primary headache types, but further work up, especially brain imaging needs to be performed.
  - Looking for:
    - SAN/Aneurysm rupture
    - Venous sinus thrombosis
Headaches in the Elderly

- Thunderclap headaches typically reach their max intensity within 30 minutes
  - Can last hours to weeks
  - Can be triggered by:
    - Coughing (Tussive HAs)
    - Diving into cold water
    - Cold wind on the face
    - Exercise/exertion

Headaches in the Elderly

- Cough/Tussive Headaches
  - A primary headache type, benign
  - Can last for 1 second to 30 minutes
  - Typically bilateral
  - Occur more often in men, over 40 yo
    - Usually occur much later than benign vascular/sexual headaches and benign exertional headaches
  - Can be seen with Chiari 1 Malformations
    - Seen on Brain MRIs
Cluster Headaches
- Most severe of primary headache disorders
- Have been seen as late as 83 yo
- Unilateral pain
- Ipsilateral autonomic features
- Motor restlessness
- Autosomal Dominant but some families have low penetrance.
  - Some family members have autonomic symptoms without the headache.

Hypnic Headaches
- Wake the patient from sleep
- Typically start after 60 yo
- Pain is typically dull and achy
- Typically last 30 to 60 minutes.
- No autonomic symptoms.
- Does not have lightning like onset and pain like Trigeminal Neuralgia (TN).
- Can be prevented by drinking 2 caffeinated beverages before bed or taking Lithium 150 mg to 600 mg PO QHS Daily.
Headaches in the Elderly

- **Trigeminal Neuralgia (TN)**
  - Typically affects people over age 50
  - Typically affect women > men
  - Typically a unilateral, quick, lightning-strike type of severe pain, lasting seconds.
  - Typically within the left or right V1, V2, or V3 dermatomes.
  - Typically brought on by cold (wind, liquids, ice), chewing, combing hair, touching face, on the side of the pain.

- **Headaches in the Elderly**
  - **Trigeminal Neuralgia (TN)**
    - Attacks typically last seconds to minutes, and rarely hours
    - Typical 4 to 10 attacks per day.
    - Rarely, bilaterally, (1-6%), and even more rare for both sides to be in pain at the same time.
    - Primary type is caused by compression of CN V by a blood vessel (superior cerebellar artery, AVM).
    - Secondary type is due to an underlying disease, such as Multiple Sclerosis (MS), tumor, etc.
Headaches in the Elderly

- Trigeminal Neuralgia (TN)
  - Idiopathic type – unknown cause
- Atypical Trigeminal Neuralgia
  - Symptoms typically are not described as electrical or lightning stroke, have accompanied numbness and tingling, and typically the pain is less severe, but longer, lasting hours

For diagnosis and treatment, other causes of face pain need to be ruled out.

- Atypical face pain – similar to TN but the symptoms last much longer, sometimes are constant, and no known cause is found.
  - It’s still a pathology of CN V
- Rule out dental causes, ie tooth abscess,
- Rule out TMJ
- Rule out post herpetic neuralgia
Headaches in the Elderly

- Trigeminal Neuralgia
- Work up typically involves an MRI/MRA of the Brain/Head, with and without contrast to assess for a compression lesion and to if CN V is inflamed.
  - MRI/MRA is superior to CT for this work up.
  - H+P is also vital to diagnosis

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Headaches in the Elderly

- Trigeminal Neuralgia
  - Treatment
    - Gold standard is carbamazepine - start 100 mg PO BID
    - Oxcarbamazepine – 150 mg to 300 mg PO BID
    - Other meds that can be used: gabapentin, pregabalin, amitriptyline, lamotrigine, baclofen, phenytoin
    - Duloxetine has some benefits in depressed patients with TN
    - Opiates, even at high doses, often don’t help.
Headaches in the Elderly

- **Trigeminal Neuralgia**
  - **Treatment**
    - Microvascular decompression surgery – results are often poor but tends to work the best in non-medical treatments.
    - Gamma knife
    - Radiofrequency ablation
    - Rhizotomy
    - Pain stimulator

- **Giant Cell Arteritis (GCA)/Temporal Arteritis (TA)**
  - Severe unilateral headache pain in the temple region
  - Severe jaw and tongue pain (due to claudication)
  - Acute vision loss
  - Diplopia
  - Blurred vision
  - Fever
  - Polymyalgia rheumatica
  - Acute tinnitus
Headaches in the Elderly

- Giant Cell Arteritis (GCA)/Temporal Arteritis (TA)
  - Work up:
    - ESR > 60
    - Elevated CRP
    - Elevated Alk Phos
    - Elevated platelets
    - Evidence of ischemia on fundoscopic exam
    - Tenderness to palpation the in the temple area
    - Prominent temporal arteries

- Temporal artery ultrasound reveals a halo sign (dark halo around the arterial lumen)
- Gold standard for work up is a temporal artery biopsy, showing giant cells infiltrating the tissue.
- Gold standard of treatment is high dose prednisone, at 1mg/kg/day. This is typically tapered down within 2 to 4 weeks and then slowly decreased over 9 to 12 months.
Headaches in the Elderly

- Chest pain from cardiac ischemia rarely causes a unilateral or bilateral headache
  - Patients with chest should be sent to the ER immediately.

- Headache medication should be based on:
  - Cost
  - Type of headache being treated
  - The drug’s efficacy
  - Side effects

- All triptans should be avoided in patients older than 65 yo, especially with CAD or stroke due to severe vasospasm and vasoconstriction.
Headaches in the Elderly

- **Treatment**
  - **Weight modification**
    - Obese patients have a 2-fold risk for migraines
    - 6 months after bariatric surgery, headache frequency declined significantly
  - **Exercise**
  - **IV Magnesium – 2 g over 10 minutes**
    - Reduces vascular tone
    - Can cause altered mental status, renal problems, cardiac problems, hypotension, arrhythmia, and fever

- **Metoclopramide (Reglan) 10 IV X 1.**
  - Contraindicated in Parkinson’s Disease or parkinsonism
  - Can cause parkinsonism, tardive dyskinesias, motor restlessness, dizziness, sedation, and generalized weakness

- **Ketorlac (Toradol) 30 mg to 60 mg IV or IM X 1**
  - Can cause burning at injection site, burning in IV site, drowsiness, stomach upset/pain, nausea, dizziness
Headaches in the Elderly

- **Valproic Acid (Depakote/Depacon)**
  - 500 mg to 1000 mg IV X 1
  - 500 mg to 1500 mg PO/day, divided BID
    - Contraindicated in pregnancy due to teratogenicity and can cause deactivation of BCPs
    - Can cause rare suicidal thoughts, liver failure, pancreatitis, parkinsonism, hair loss, tremors, interacts with a lot of meds, sedation, nausea, diarrhea, and weight gain

Headaches in the Elderly

- **Treatment**
  - Topiramate (Topamax, Trokendi)
    - 25 mg to 200 mg/day
    - Can cause rare suicidal thoughts, kidney stones, deactivation of BCPs, numbness and tingling, taste changes, weight loss, memory loss, word finding difficulties, decreased appetite, and sedation.
Headaches in the Elderly

Treatment
- Metoprolol (Lopressor, Toprol)
  - 100 mg to 200 mg/day
  - Contraindicated in chronic lung disease, CHF, and asthma
  - Can cause rare suicidal thoughts, sedation, hypotension, dizziness, lightheadedness, wheezing, and impotence.

- Propranolol/Propranolol ER (Inderal)
  - Propranolol ER 80 mg to 160 mg PO QDaily
  - Contraindicated in chronic lung disease, CHF, and asthma
  - Can cause rare suicidal thoughts, sedation, hypotension, dizziness, lightheadedness, wheezing, and impotence.
Dizziness in the Elderly

- What does the word “dizzy,” mean?
  - Vertigo
  - Ataxia
  - Lightheadedness
  - Gait instability
  - Other

Dizziness in the Elderly

- Vertigo
  - Nystagmus
    - Horizontal, vertical or rotatory (geotropic/ageotropic)
    - Named for the fast phase
**Dizziness in the Elderly**

- **Benign Paroxysmal and Positional Vertigo (BPPV)**
  - Aggravated by head movement
  - Vertigo: fatigable, mild and transient
  - Nystagmus: rotatory (ageotropic, fatigable, transient
  - Cause: trauma, idiopathic
  - Pathophysiology: otoconia, cupulolithiasis
  - Treatment: drugs, adaptation, surgery

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**Dizziness in the Elderly**

- **Vestibular Neuronitis (Viral Labyrinthitis)**
  - Sudden severe vertigo
  - Lasts days and may recur for months
  - No cochlear symptoms; Audiometry tests are normal.
  - Loss of function of one vestibular system
  - Cause: viral
  - Treatment: medically
Dizziness in the Elderly

- Ménière Disease
  - Tinnitus, deafness, vertigo, and aural fullness
  - Sensitive to sounds; pressure feeling; distorted sounds
  - Vertigo is severe, recurrent and lasts 5-30 minutes.
  - Associated with nausea and vomiting
  - Deafness is usually progressive and stepwise

Dizziness in the Elderly

- Ménière Disease continued:
  - Cause: increase in endolymphatic volume with ballooning of the cochlear duct, utricle and saccule - endolymphatic hydrops
  - Treatment: restrict salt, diuretics, surgery
Dizziness in the Elderly

- Vertigo Medications
  - Meclizine (Antivert)
  - Antihistamines (Benadryl, Vistaril)
  - Promethazine (Phenegan)
  - Scopolamine (Patch)
  - Dimenhydrinate (Dramamine)
  - Lorazepam (Ativan)
  - Clonazepam (Klonopin)
  - Ginger Capsules
  - Sea bands (must be worn for 3 days before improvements are seen)

Dizziness in the Elderly

- Syncope
  - Presyncope
  - Near Syncope
  - Lightheadedness
  - Syncope
Dizziness in the Elderly

- Syncope
  - Often referred to as having a spell, the “vapors” or passing out
  - Symptoms include blurred vision, tunnel vision, roaring sound, paleness, clamminess, nausea, or sweating – typically prior to the event

Dizziness in the Elderly

- Vasovagal Syncope
  - Triggered by pain, emotion, unpleasant experiences
  - Decreased pulse or blood pressure
  - Lasts a few minutes with rapid recovery
  - Treatment is conservative
Orthostatic Hypotension

- Results from a change in posture
- Often associated with medication use, viral infections, bed rest, dehydration, anemia, adrenal insufficiency
- May result from central or peripheral etiologies: diabetes mellitus, syrinx, syphilis, Multiple System Atrophy (MSA)/Shy-Drager syndrome, idiopathic orthostatic hypotension, Parkinson’s Disease (PD) and it’s meds.

Orthostatic Hypotension (continued)

- Diagnosis
  - Tilt test – can be normal
    - BP drops < 20 mm Hg systolic/10 mm Hg diastolic
    - BP drops < 30 mm Hg systolic/15 mm Hg diastolic
    - Heart rate normally increases 11-29 bpm
  - Orthostatic VS
  - Other more provocative testing
Orthostatic Hypotension (continued)

- Treatment
  - Asymptomatic - no treatment
  - Support hose
  - Sleep on an incline (15-20°)
    - promotes renin release
    - stimulates the autonomic nervous system
  - Sympathomimetics - midodrine
  - NaCl or 9 α-fluorohydrocortisone
  - Droxidopa (Northera) – used for PD associated orthostatic hypotension
  - Other drugs - erythropoietin

Cardiac Disease

- Arrhythmia
  - bradyarrhythmia
  - tachyarrhythmia

- Structural
  - valvular
  - myxoma
  - congenital heart disease
  - cardiomyopathies
  - myocardial infarction
### Cardiac Disease (continued)

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Diagnosis</th>
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<tbody>
<tr>
<td>little relation to posture</td>
<td>cardiac H&amp;P</td>
</tr>
<tr>
<td>rapid onset</td>
<td>ECG</td>
</tr>
<tr>
<td>may have preceding premonitions like sweating, chest pain or pallor</td>
<td>holter monitor</td>
</tr>
<tr>
<td>precipitated by exertion</td>
<td>echocardiogram</td>
</tr>
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<td></td>
<td>lab tests</td>
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</tbody>
</table>

### Carotid Sinus Syncope

- Results from unusual carotid sinus sensitivity
- Seen in elderly
- Pressure on neck or tight collars
- May decrease pulse and/or blood pressure
- Diagnosed by ECG monitoring with light massage to the neck
Vagal Events or Valsalva Maneuvers

- Defecation
- rectal exam
- cold or hot liquids
- venipuncture
- bronchoscopy
- Micturition
- pulmonary embolism
- gall bladder disease
- mediastinal mass
- coughing

Vertebrobasilar Insufficiency (VBI)

- Ischemia to the reticular activating system
- Cortical blindness, long tract signs, ataxia, cranial nerve palsies
- Common disease of the elderly
Other causes of syncope

- migraine
- hypoglycemia
- psychiatric
- subclavian steal
- normal pressure hydrocephalus
- hypoxia
- aortic dissection

Gait Instability

- Ataxia - peripheral or central causes
- Hemiparesis
- Weakness - peripheral or central
- Cerebral
  - Parkinson disease
  - Frontal lobe disease
Convulsive Syncope

- A seizure which is triggered by a rapid decline in blood pressure

<table>
<thead>
<tr>
<th>Syncope</th>
<th>Seizure</th>
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<tbody>
<tr>
<td>Onset</td>
<td>may be rapid</td>
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<tr>
<td>Posture</td>
<td>sitting or standing</td>
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<tr>
<td>Movements</td>
<td>myoclonic</td>
</tr>
<tr>
<td>ECG</td>
<td>inc or dec rate</td>
</tr>
<tr>
<td>Recovery</td>
<td>rapid</td>
</tr>
<tr>
<td>Incontinence</td>
<td>rare</td>
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<tr>
<td></td>
<td>extremely rapid</td>
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<tr>
<td></td>
<td>no relation</td>
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<tr>
<td></td>
<td>wide variety</td>
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<tr>
<td></td>
<td>normal or inc rate</td>
</tr>
<tr>
<td></td>
<td>slow</td>
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<td>frequent</td>
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Vertigo/Dizziness can be one of the most frustrating diseases to treat for both the patient and the physician. It's usually a combination of problems, both peripheral and central. Adaptation to vertigo, is often the best and most long lasting treatment. Often occurs without therapy, but vestibular rehab speeds up adaptation and makes it more permanent.

Other studies that can be performed include:
- Electronystagmogram (ENG)
- Full vestibular study with Videonystagmogram (VNG), rotary chair and posturography
- Osteopathic Evaluation and Treatment
- Dix-Hallpike Testing
- Audiological evaluation – especially if the patient has aural fullness, tinnitus, and/or hearing loss
- ENT referral
Vestibular Rehabilitation

- Subjective visual vertical (SVV)
  - Bucket Test
  - Maddox Rod
  - strabismus
Vestibular Rehabilitation

- The most common causes of vertigo:
  - Inner ear dysfunction
  - Cerebellar stroke
  - Migraine (with or without HA)
  - Cervical spine disease – can be treated osteopathically and with therapy
  - Anxiety – vertigo often causes or worsens anxiety too
  - Combination of the above problems

Vestibular Rehabilitation

- All treatment of persistent and recurrent vertigo should begin with a referral to a vestibular trained PT or OT

- Medications often prevent adaptation and compensation of vertigo to occur, so during therapy, the patient needs to be off vertigo meds
Vestibular Rehabilitation

- Therapists can perform both Dix-Hallpike and Head Roll tests and then go directly into Epley Maneuvers which will treat the vertigo.
- I don’t recommend evaluating patients with Dix-Hallpike maneuvers and treating patients with Epley maneuvers unless you have a lot of practice. If done incorrectly, patients will get worse and won’t let you try to “fix them.”
- After that, the therapists will continue with vestibular rehab and gait/balance training.

Vestibular Rehabilitation

- Medications:
  - Meclizine (Antivert) 12.5 to 25 mg TID to QID
  - Ativan 0.5 to 1 mg TID (works better for strokes)
  - Klonopin 0.25 to 0.5 mg BID (works better for strokes)
  - Valium 5 mg BID
  - Phenergan 12.5 to 25 mg TID
  - Compazine 10 mg TID
  - Zofran
  - HCTZ 12.5 mg QD x 3 days
  - *Medications prevent adaptation from effectively occurring
Vestibular Rehabilitation

- Medications continued:
  - SSRIs
  - Treatment of underlying migraine
  - Treatment of underlying anxiety*
  - Antibiotics for otitis media
  - Prednisone
  - Valtrex
  - Ginger tablets (OTC)
  - Cheddar cheese, Butterscotch candy
  - *also should get a referral to neuropsychology and/or counseling for possible anxiety

Questions?

Cat Scan