

## Red Flag Symptoms: Headaches and Dizziness in the Elderly

Ryan J. Lynch, D.O., M.S.Ed.

Neurology/Neurorehabilitation

Stroke Director

LECOM Health System



LECOM HEALTH

## Disclosures

- I have nothing to disclose.



LECOM HEALTH

## 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 see in the elderly.
- 4. To familiarize one with the common treatments of dizziness and lightheadedness in the elderly.



LECOM HEALTH

## References

- 1. Current Treatment Options in Neurology (2013): *Treatment of Headache in the Elderly*, Hershey, Linda, Bednarczyk, Edward. 15:56–62.
- 2. [Zahid H Bajwa, MD](#), [Charles C Ho, MD](#), [Sajid A Khan, MD](#). Trigeminal Neuralgia. *Uptodate*. Retrieved February 17, 2019, from: [https://www.uptodate.com/contents/trigeminal-neuralgia?search=trigeminal%2oneuralgia&source=search\\_result&selectedTitle=1~150&usage\\_type=default&display\\_rank=1](https://www.uptodate.com/contents/trigeminal-neuralgia?search=trigeminal%2oneuralgia&source=search_result&selectedTitle=1~150&usage_type=default&display_rank=1)



LECOM HEALTH

## References

- 3. William P. Docken. Diagnosis of Giant Cell Arteritis. *Uptodate*. Retrieved February 17, 2019, from: [https://www.uptodate.com/contents/diagnosis-of-giant-cell-arteritis?search=giant%20cell%20arteritis&source=search\\_result&selectedTitle=1~126&usage\\_type=default&display\\_rank=1](https://www.uptodate.com/contents/diagnosis-of-giant-cell-arteritis?search=giant%20cell%20arteritis&source=search_result&selectedTitle=1~126&usage_type=default&display_rank=1)



LECOM HEALTH

## References

- 4. [Joseph M Furman, MD, PhD](#) [Jason JS Barton, MD, PhD, FRCPC](#). Evaluation of the patient with vertigo. *Uptodate*. Retrieved on February 17, 2019, from: [https://www.uptodate.com/contents/evaluation-of-the-patient-with-vertigo?search=vertigo&source=search\\_result&selectedTitle=1~150&usage\\_type=default&display\\_rank=1](https://www.uptodate.com/contents/evaluation-of-the-patient-with-vertigo?search=vertigo&source=search_result&selectedTitle=1~150&usage_type=default&display_rank=1)



LECOM HEALTH

## References

- 5. [Zahid H Bajwa, MDR Joshua Wootton, MDiv, PhD Franz J Wippold II, MD, FACR](#). Evaluation of headaches in adults. *Uptodate*. Retrieved on February 17, 2019, from: [https://www.uptodate.com/contents/evaluation-of-headache-in-adults?search=headaches%20in%20the%20elderly&source=search\\_result&selectedTitle=1~150&usage\\_type=default&display\\_rank=1](https://www.uptodate.com/contents/evaluation-of-headache-in-adults?search=headaches%20in%20the%20elderly&source=search_result&selectedTitle=1~150&usage_type=default&display_rank=1)



## 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%



LECOM HEALTH

## 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.



LECOM HEALTH

## 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



LECOM HEALTH

## 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



LECOM HEALTH

## 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



LECOM HEALTH

## 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.



LECOM HEALTH

## 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



LECOM HEALTH

## 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



LECOM HEALTH



## 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



LECOM HEALTH

## 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



LECOM HEALTH

## Headaches in the Elderly

- 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.



LECOM HEALTH

## Headaches in the Elderly

- 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.



LECOM HEALTH

## 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



LECOM HEALTH

## Headaches in the Elderly

- Trigeminal Neuralgia (TN)
  - 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 know cause is found.
      - It's still a pathology of CN V
    - Rule out dental causes, ie tooth abcess,
    - Rule out TMJ
    - Rule out post herpetic neuralgia



LECOM HEALTH

## 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



LECOM HEALTH

## 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.



LECOM HEALTH

## 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



LECOM HEALTH

## Headaches in the Elderly

- 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



LECOM HEALTH

## 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



LECOM HEALTH

## Headaches in the Elderly

- Giant Cell Arteritis (GCA)/Temporal Arteritis (TA)
  - 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.



LECOM HEALTH

## 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.



LECOM HEALTH

## Headaches in the Elderly

- 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.



LECOM HEALTH



## Headaches in the Elderly

- Treatment
  - Weight modification
    - Obese patient 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



LECOM HEALTH

## Headaches in the Elderly

- Treatment
  - 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



LECOM HEALTH

## 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



LECOM HEALTH

## 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.



LECOM HEALTH

## 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.



LECOM HEALTH

## Headaches in the Elderly

- Treatment
  - 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.



LECOM HEALTH

## Dizziness in the Elderly

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



LECOM HEALTH

## Dizziness in the Elderly

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



LECOM HEALTH

## 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



LECOM HEALTH

## 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



LECOM HEALTH

## 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



LECOM HEALTH

## 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



LECOM HEALTH

## 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)



LECOM HEALTH

## Dizziness in the Elderly

- Syncope
  - Presyncope
  - Near Syncope
  - Lightheadedness
  - Syncope



LECOM HEALTH

## 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



LECOM HEALTH

## 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



LECOM HEALTH



## 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, syphilis, syphilis, Multiple System Atrophy (MSA)/Shy-Drager syndrome, idiopathic orthostatic hypotension, Parkinson's Disease (PD) and its meds.



LECOM HEALTH

## 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



LECOM HEALTH

## 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  $\alpha$ -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)

- Symptoms
  - little relation to posture
  - rapid onset
  - may have preceding premonitions like sweating, chest pain or pallor
  - precipitated by exertion
- Diagnosis
  - cardiac H&P
  - ECG
  - holter monitor
  - echocardiogram
  - lab tests



## 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



LECOM HEALTH

## Vertebrobasilar Insufficiency (VBI)

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



LECOM HEALTH

## Other causes of syncope

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



LECOM HEALTH

## Gait Instability

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



LECOM HEALTH

## Convulsive Syncope

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



LECOM HEALTH

## Convulsive Syncope

	<b>Syncope</b>	<b>Seizure</b>
<b>Onset</b>	may be rapid	extremely rapid
<b>Posture</b>	sitting or standing	no relation
<b>Movements</b>	myoclonic	wide variety
<b>ECG</b>	inc or dec rate	normal or inc rate
<b>Recovery</b>	rapid	slow
<b>Incontinence</b>	rare	frequent



LECOM HEALTH

## Vestibular Rehabilitation

- 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.



LECOM HEALTH

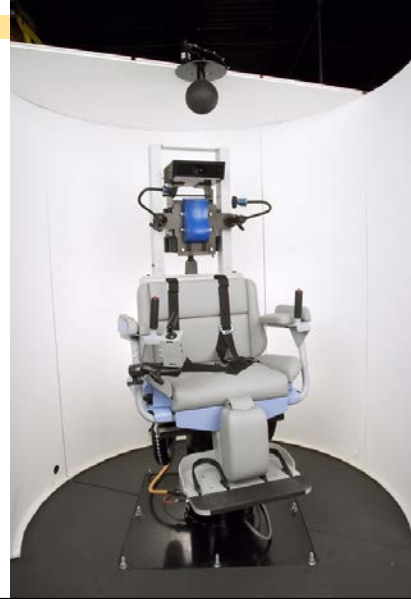
## Vestibular Rehabilitation

- 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



LECOM HEALTH

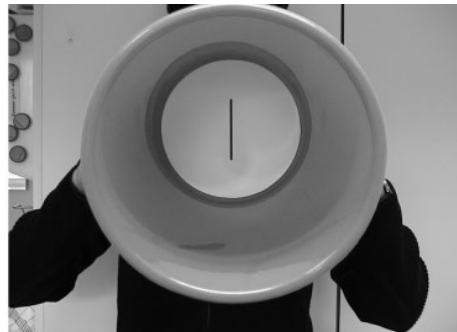
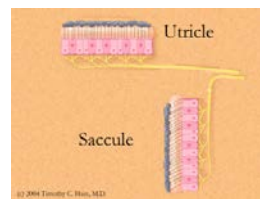
## Vestibular Rehabilitation



## 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



LECOM HEALTH

## 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



LECOM HEALTH

## 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



LECOM HEALTH

## 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



LECOM HEALTH

## 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



LECOM HEALTH

## Questions?



LECOM HEALTH