EM CASE OF THE WEEK.

BROWARD HEALTH MEDICAL CENTER
DEPARTMENT OF EMERGENCY MEDICINE

Care Warriors

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Vertigo

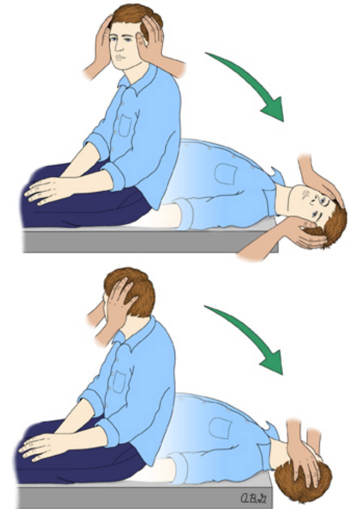
A 61-year-old male with past medical history of hypertension presents to the ED with constant dizziness and vomiting for 5 hours. He first noticed the sensation after breakfast which he describes as "room spinning around me." He had one episode of non-bloody, non-bilious emesis after which he decided to take a nap. Upon waking up he had another episode of vomiting and was feeling presyncopal with no loss of consciousness which prompted his visit to ED. He has never had these symptoms in the past. He denies any associated tinnitus, blurry vision, or changes in sensation in any of his extremities. Of note, he has been having black, tarry stools for the past two weeks. He is up to date with screening colonoscopies and has no personal history of any colorectal masses. He has never had blood in stool in the past. On exam, extraocular movements were limited due to horizontal nystagmus. CN II-XII otherwise intact. Patient also had negative heel to shin and finger to nose. Neuro exam was otherwise nonfocal. He is mildly hypertensive to 140/96 with vitals otherwise stable. Which of the following is the curative treatment for this patient?

A. Meclizine 25mg qid prn vertigo

B. Salt restriction

C. Epley Maneuver

D. Prednisone 10 day taper



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Dix-Hallpike maneuver
With patient sitting, the neck is extended and turned to one side and then rapidly placed supine with head hanging off edge of table. The patient is kept in this position and observed for 30 seconds for nystagmus. And then patient is returned to sitting and re-observed for nystagmus.

EM Case of the Week is a weekly "pop quiz" for ED staff.

The goal is to educate all ED personnel by sharing common pearls and pitfalls involving the care of ED patients. We intend on providing better patient care through better education for our nurses and staff.

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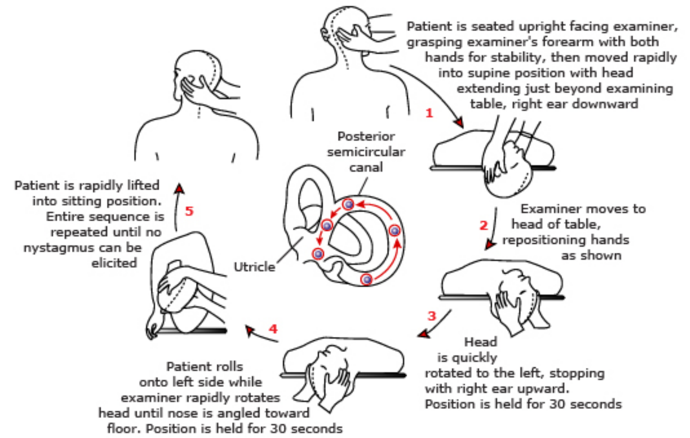
The correct answer is C. Epley Maneuver

Epley Maneuver is the initial treatment of choice for Benign Paroxysmal Positional Vertigo (BPPV)[1]. BPPV is commonly attributed to debris within the semicircular canal which loosens the otoconia causing issues with proprioception[1]. As the name suggests, the etiology of BPPV is generally idiopathic.[1] Other causes include head trauma, even if relatively minor, and residual effects of other vestibular diseases such as Meniere's.[1] BPPV is primarily a clinical diagnosis based on a patient having recurrent brief episodes of vertigo that are provoked by certain head movements.[1] The lifetime prevalence of BPPV is 2.4% with increased one-year prevalence associated with age.[2]

Discussion

BPPV is primarily a clinical diagnosis of a patient having recurrent, brief episodes of vertigo that are provoked by specific types of head movements with accompanying nystagmus.[1] One maneuver that can be utilized at the bedside to confirm BPPV is the Dix-Hallpike maneuver. In this maneuver, the patient's neck is extended and turned to one side while sitting.[1] The patient is then rapidly placed in supine position and observed for nystagmus for 30 seconds.[1] Afterwards, the patient is repositioned in the sitting position and re-observed for nystagmus in this position for another 30 seconds.[1] Nystagmus can be elicited in either positions within 30 seconds to confirm the BPPV diagnosis.[1] The differentials for a patient coming in with vertigo includes vestibular neuritis, Ramsay-Hunt syndrome, Meniere disease, acoustic neuroma, and otitis media.[3] However, there are many symptoms that can be utilized to distinguish BPPV from the other possible etiologies of vertigo. For example, BPPV will be missing the classic hearing changes or tinnitus that can be seen in Meniere's disease and Ramsay-Hunt syndrome.[3] BPPV will also be missing the inflammatory signs such as fever seen in vestibular neuritis and otitis media.[3]



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Epley Maneuver

Treatment

BPPV has an excellent prognosis and is treated effectively in most cases using repositioning techniques.[1] The purpose of these techniques is to reposition the otoconia in the patient's semicircular canals.[1] The Epley maneuver is the most commonly used technique and can be done in the office.[1] The maneuver involves moving the patient's head in different directions with rapid movements and then holding them in place for 30 seconds.[1]

Patients can also utilize self-treatment techniques at home which have been shown to be effective in 65-90% of patients if appropriately demonstrated.[4] These self-treatment techniques include a modified version of the Epley maneuver where the patient sits on their bed and lies back and turns their head rapidly and holding for 30 seconds before turning their head and body further in the same direction for another 30 seconds.[1]

Pharmacologic therapies are generally not useful given how brief vertigo episodes of BPPV tend to be.[1] However, meclizine can be utilized to provide symptomatic relief in patients with severe symptoms.[1]

For a list of educational lectures, grand rounds, workshops, and didactics please visit ***BrowardER.com*** and **click** on the ***"Conference"*** **link**.

All are welcome to attend!

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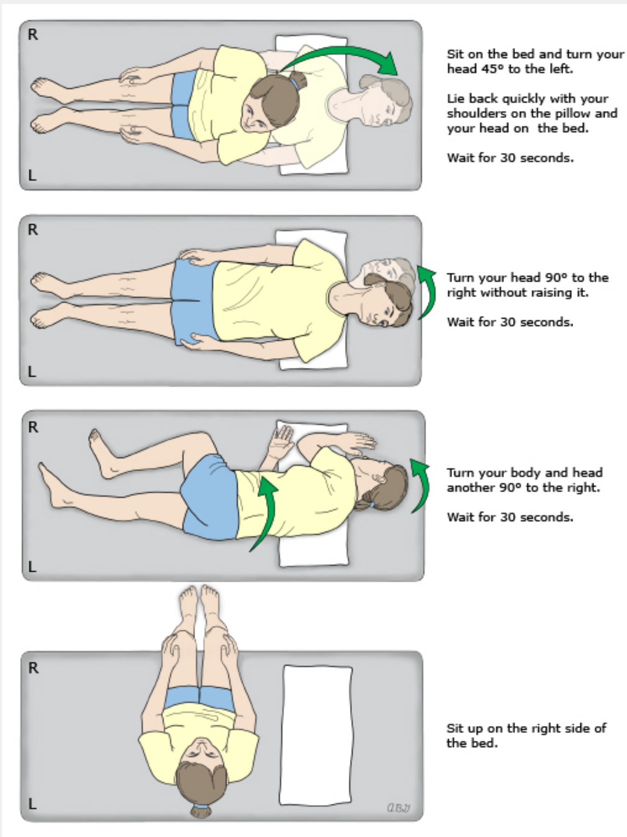
January 2020 | Vol 7 | Issue 3



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Modified Epley Maneuver for Left sided BPPV
This is a useful self-treatment method for patients with BPPV. The maneuver should be carried out three times a day and repeated daily until the patient is able to be symptom free of any vertigo for 24 hours.

Take Home Points

- BPPV is a common cause of vertigo with an excellent prognosis
- The main etiology of BPPV is idiopathic however less common causes include head trauma and residual effects of other vestibular pathologies.
- BPPV is a clinical diagnosis which can be confirmed by the Dix-Hallpike maneuver. The hallmark symptom of BPPV is the brief recurrent episodes of vertigo that are provoked by head movements and have associated nystagmus.
- BPPV can be distinguished from other common causes of vertigo by the absence of any hearing changes, tinnitus, fevers/chills, neurological deficits, or other systemic findings.
- BPPV can be treated by repositioning techniques. The most common repositioning technique to be used in the office is the Epley Maneuver
- Self-treatment repositioning techniques, such as the modified Epley maneuver, are also very effective for patients
- Pharmacotherapy is not as efficacious in these patients due to the briefness of the vertigo episodes; however, meclizine can be used for patients with severe vertigo symptoms

ABOUT THE AUTHOR

This month's case was written by Shaan Patel. Shaan is a 4th year medical student from NSU-COM. He did his emergency medicine rotation at BHMC in January 2020. Shaan plans on pursuing a career in Internal Medicine after graduation.

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