Benign Paroxysmal Positional Vertigo

Neurology of Eyes- Book
Chapter 10

Treatment Maneuvers:
Dix-Hallpike Maneuver:
Posturally Induced Vertigo portion.
-Eyes open turn the patients head 45 degrees to 1 shoulder holding on to the head

- The head and neck are quickly moved "en bloc" into a hanging head position (just over the edge of the table) at 120 degrees.

- Typically there is a latency period, usually about 2-5 seconds but sometimes as long as 30 seconds. This may be followed by a sensation of discomfort and apprehension that will sometimes cause the patient to cry out and attempt to sit up. This is associated w/ vertigo, nausea and a burst of nystagmus.

- If not elicited w/ the Dix- Hallpike maneuver to either side, the patient should be brought to a supine position w/ the head centered to the body. The patients head and body comfort should be turned 90 degrees to 1 side (right down) back to neutral head supine, then turned 90 degrees to the other side (left down). This is the best maneuver for Horizontal Vertigo.

The carbonate crystals fall into the posterior canal and deflect the cupula away from the utricle and cause depolarization of vestibular afferents from the posterior semicircular canal. This has vestibular connections to the brainstem that activate the ipsilateral superior oblique and the contralateral inferior rectus. With the head back and slightly turned you evoke part of the horizontal canal on the same side too. This causes the eye to move away from the side of stimulus. Let's use the right posterior canal for instance.

The right eye will move to the nose and of course the superior oblique will depress it as it has the mechanical advantage because it is in alignment with the visual axis. This is a slow component of vestibular nystagmus, which will be followed by a fast corrective saccade back up to its original position.

In other words a stone in the right posterior canal will result in activation of the right superior oblique and left inferior rectus and cause the eyes to go down after the horizontal canal helps to drive the eyes across. Then the refixation is fast back to the center. Of course vestibular nystagmus is always characterized by the fast phase of the nystagmus. In this particular case the nystagmus would be fast up beating as the slow component of vestibular nystagmus goes down. Right posterior canal crystal is called BPPV and results in a fast up beating nystagmus to the right.

Epley Maneuver: Treatment of Vertigo portion.

- Pictures of the maneuver are in the cd or book.
- Sitting turn head to the right. Hold onto the right mastoid and the left jaw line.
- Take the patient back supine with their head back over off the edge of the table. Turning their head in the direction you are standing to 90 degrees. Hold their head back as far as you can.
- Hold for a few seconds then turn their head in the opposite direction to the left. Again hold back as far as you can.
- Then tip their head forward or towards their chest.
- Hold for a few seconds then bring them back up to a seated position, with their head in a flexed forward position.
- Once there you can bring their head up to a normal position.
- Some vibrate the mastoid at the same time they have them in a turned position or repositioning maneuver get the otolithic debris that has adhered to the semicircular canal.
- Retest their balance with a Rhomberg's and see how dizzy they are you may have o do 2-3 times depending.

BPPV- Benign Paroxysmal Positional Vertigo:

- Dizziness with head being in certain positions
- Generally posterior canal and more right.
- Generally in older populace due to otoconia fragmentation and weak tissues.
- They will tell you this in the history, get it when they lie down, or tie their shoe. They will also tell you that when they get it if they tip their head forward they fell much better.
- They will sleep with 2 pillows since it bothers more at night when they sleep.

Their head posture will be forward as they hate to have their head back because the dizziness starts.

- Before you start the exam going by their history of what position bothers then you should have an idea of what canal is being affected and which nystagmus you are expecting to see.
- Check the nystagmus upbeating –downbeating.
- They rarely have horizontal as most stones fall in the posterior canal.

Mechanism:

- As the head is tipped backwards, the otoconia or crystals will fall down the canal and cause the endolymph to move in a direction away from the cupula. This bends the cupula away from the utricle and excites the vestibular nerve from the posterior canal, resulting in an upbeat torsional-nystagmus.
- Place their head in a position to see the nystagmus, posterior place it backward and look for the upbeat nystagmus with torsion.
- The posterior canal will drive the eyes downward with rotation away from the canal. This is the slow phase.
- The fast phase of the nystagmus will beat opposite this so it will be an upbeating nystagmus with torsion towards the posterior canal (Extorsion).
- The nystagmus should stop when the stone stops moving in the canal.
- ** If the nystagmus does not stop moving then the stone is adhered to the cupula.
- You have to use vibration on their mastoid to free the stone from the cupula.