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DIX-HALLPIKE MANUEVER

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INTRODUCTION: BENIGN PAROXYSMAL POSITIONAL VERTIGO (BPPV)

Vertigo is the perception of movement where no movement exists.

Benign Paroxysmal Positional Vertigo or BPPV is a common cause of peripheral vertigo. Vertigo occurring only and repeatedly with position changes of the head supports this diagnosis. The nystagmus associated with BPPV is typically horizontal and may also be rotatory.

In many ways, BPPV is a diagnosis of exclusion. If the patient's vertigo or nystagmus is present at rest or occurs in the context of a loss of consciousness or focal neurological deficit, headache, hearing loss, tenderness, hypotension, or hypertension, the diagnosis of BPPV is not appropriate and another cause should be sought.

BPPV PATHOPHYSOLOGY

BPPV is a mechanical disorder of the inner ear thought to be caused by the displacement of previously stationary otoconia. The movement of the otoconia results in neuro firing and subsequent vertigo and nystagmus. The brain perceives motion that is not actually occurring.

DIX-HALLPIKE OVERVIEW

Coupled with history and physical examination, the dix-hallpike maneuver can aid in the diagnosis of BPPV. A positive dix-hallpike maneuver has a 50-80 percent sensitivity.

Contraindications to this maneuver include carotid stenosis, concern for vertebrobasilar vascular disease, cervical spine disease, spinal injury, cardiovascular disease or cardiac dysrhythmia.

Also, keep in mind patient discomfort. The elderly and those with ongoing severe symptoms may not tolerate the position changes of this maneuver.

THE DIX-HALLPIKE MANUEVER

All that is required for the maneuver is a flat, comfortable examining bed that allows the patient's head to hang over the end. The patient should be warned that performance of this maneuver may reproduce their symptoms and pretreatment with an antiemetic or an antihistamine is advisable. Pretreatment with make the procedure more tolerable but it will not extinguish the nystagmus.

The patient begins in the seated position with the examiner standing behind the patient, but offset to the side of the ear to be tested.

The examiner then gently turns the patient's head 45 degrees to the side to be examined by placing their hands on each side of the patient's face. This rotation aligns the tested posterior semicircular canal with the patient's sagittal plane.

Next, while keeping the head rotated 45 degrees, the examiner moves the patient in a rapid but controlled manner to the supine position with the tested ear down, and then gently extends the patient's head beyond the edge of the bed.

During the entire maneuver, the patient's eyes remained opened and fixed on the examiner's nose or forehead, while the examiner observes for the latency, direction, and duration of any induced nystagmus.

Examiner: *This may very well elicit your symptoms or make you anxious, but I like you to do your best to try and keep your eyes focused on my forehead.*

Patient: *OK*

The patient's symptoms should subside within one minute. The patient is then returned to the seated position. And after a brief rest, the maneuver is repeated on the opposite side. The side that elicits the positive test is the affected side.

MANUEVER INTERPRETATION

A positive test is indicated by a latent period of one to five seconds during which the patient is minimally symptomatic. This is subsequently followed by the acute onset of vertigo and rotatory nystagmus with a rapid component toward the affected side.

A typical duration of symptoms and visible nystagmus is 10-40 seconds. Simply feeling dizzy as a result of the maneuver does not indicate a positive test. There must be latency, fatigability, and horizontal or rotatory nystagmus for the dix-hallpike test to be positive.

Also, when the test is repeated, symptoms typically wane. The dix-hallpike maneuver is a safe and simple adjunct for the diagnosis of benign paroxysmal positional vertigo with a sensitivity of 50-80 percent.