WHAT IS BPPV?

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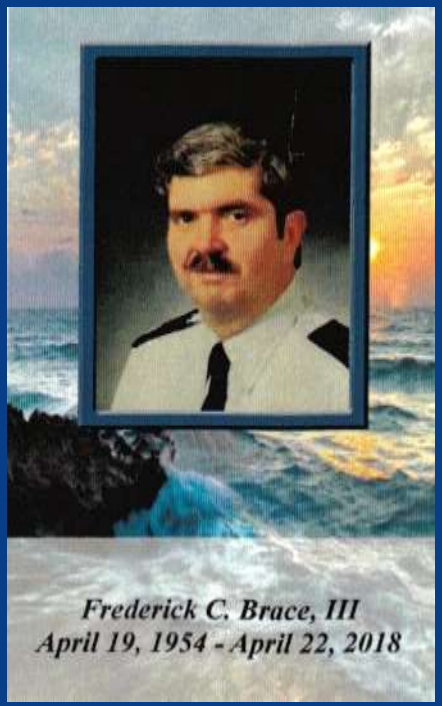
Memorial Lecture



Disclosures

- I do not have any conflicts of interest to disclose.

Goals of this Lecture

- Understand what is BPPV and stimulate an greater understanding of this common problem
- Understand the history, physical findings, diagnosis, and treatment options of BPPV
- Understand basic Canalith Repositioning
- Review more advanced issues associated with BPPV and Canalith Repositioning

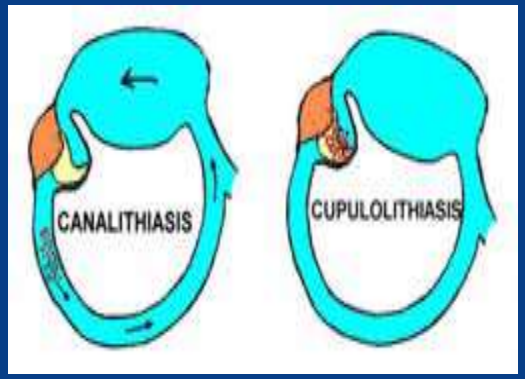
Introduction

- BPPV most common single cause of vertigo especially in person older than 50
- It is often misdiagnosed
- Other pathology (Menieres) associated with BPPV can confuse the clinical picture

Definitions

- Different canals – posterior, horizontal, and anterior

- Different mechanisms – canalithiasis vs cupulolithiasis



What is BPPV?

- Vertigo – phantom sensation of motion elicited by specific changes in head position (movement provoked)
- Caused by placing the affected ear downward (classical BPPV)
- Associated with characteristic eye movement called nystagmus – rotatory (posterior canal)

Vertigo Characteristics

- Triggered by movement
- Thrown into a spin – toppling forwards
- Many times a lag period
- Can start very violently but also be gentle sensation
- Supposed to dissipated within 20-30 seconds
- Sensation reverses upon sitting erect again

Canalith Theory

- In the semicircular canals there are calcium deposits that sit on a stem and break off and float around
- Think of these balls bouncing around causing an neuro stimulus to the brain and the sensation of vertigo
  - Each canal produces a characteristic eye movement

Presentation

- Onset is typically sudden and many times at night lifting out of bed.
- Positional vertigo may go on for hours, weeks, months, and sometimes years.
- Vertigo may clear on its own than recur
- Severity varies from mild to debilitating
- Audiogram – no hearing loss from this condition – can differentiate from other conditions such has hydrops, otosclerosis, or perilymphatic fistulas

Predisposing Factors

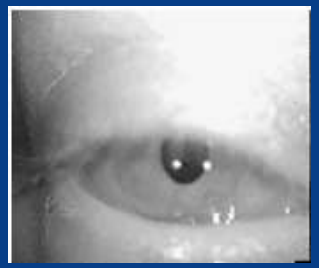
- Trauma – rarely seen before age 35 unless history of head trauma
- Age – seen more over age 50
- Inactivity – acute ETOH, major surgery, CNS disease, diabetes
- Concomitant ear pathology – such as perilymphatic fistula, endolymphatic hydrops, and CNS infarction

Natural Course

- Variable from acute, acute relapsing/sporiadic, to chronic recurring
- Maybe limited to couple of weeks if left untreated
- No lab or radiographic testing unless to check for other secondary conditions
- Classic eye movements depending on canal involved

Classic Nystagmus

- Parallels the symptoms
- Rotatory (posterior canal) with fast phase toward undermost ear
- Horizontal (horizontal canal)
- Latency - < 5 seconds
- Duration – usually < 20 seconds
  (if longer, cupulolithiasis or CVA)
- Reversal with upright positioning
- Response decline with repetitive provacation



Testing

- Hallpike maneuver – standard clinical test for BPPV
- Pathognomonic – transient rotatory or horizontal eye movement
- Negative test meaningless

Treatment Options

- Watchful waiting
- Exercises at home – varies with provider
- Vestibular therapy – Canalith Repositioning
- Surgery – labyrinthectomy, vesticular nerve section, singular neurectomy, PSC occlusion

Canalith Repositioning Procedure

- Successful – 95%
- Can work immediately but may take several treatments
- Painless, little or no side effects
- Should be first –line therapy before consideration of surgery
- Complications – transform canalithiasis into a cupulolithiasis

Canalith Repositioning Procedure Secrets

- Variations in the procedure – one time per visit or multiple times per visit
- Allow nystagmus to finish before rotating the head
- Head must be tilted posteriorly at 30 degrees as possible – try to prevent particle reflux
- Horizontal canal – roll under
- Head shake sometimes needed
- Let's demonstrate

Canalithiasis vs Cupulolithiasis

- Particles are out of place but location is different
- Canalithiasis – movement induced, fatiguing, latency
- Cupulolithiasis – movement induced, non-fatiguing, little latency

Cupulolithiasis Treatment

- Same maneuver as PSC canalithiasis – try to move particles into the canal
- May have to use oscillation/agitation
- Try head shake movement

Horizontal Canalithiasis

- Particles in the horizontal canal and cause horizontal nystagmus vs rotatory nystagmus in posterior canal – mimics bilateral BPPV
- Can be difficult to ascertain without frenzal glasses
- Associated with head trauma

Horizontal Canalithiasis Treatment

- Log roll under away from the affected side
- Can demonstrate

Horizontal Cupulolithiasis

- More complex – probably needs referral and immediate
- Non-fatiguing nystagmus - vertigo

Anterior (Superior) Canalithiasis

- Theoretical – I have not seen one of these.

Canal Occlusion

- Disrupts the flow of particles within the endolymph
- Low incidence of SNHL

Difficult Patients

- Patients unable to tolerate manipulation due to back problems, strokes, paralysis, obesity
- Patients proned to panic
- Develop a complication such as cupulolithiasis, other canal involvement, or occlusion

Conclusion

- BPPV is benign paroxysmal positional vertigo
- Movement related onset of transient vertigo of varying severity – slightly debilitating to severe nausea/vomiting
- Patient needs to be treated soon – usually not a routine consult to ENT or vestibular rehab
- Can be treated by Primary care provider with experience to deal with complications