Particle Repositioning for BPPV

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The views expressed in this presentation are those of the author and do not reflect the official policy of the Department of Army, Department of Defense, or U.S. Government.

Objectives

• Anatomy & Physiology
• Findings & Treatment
  – Posterior Canal
  – Horizontal Canal
  – Anterior Canal
• Mimickers
• Coding & Reimbursement
Ewald's First Law: Eye movements are in the plane of the semicircular canal, and in the direction of the endolymph flow.
BPPV Exam

Start seated
- Neck mobility
- Cervical-induced nystagmus
- Rotational vertebral artery syndrome

BPPV Exam

- Right Dix-Hallpike
  - Roll test (if horizontal nystagmus)
  - Reverse Dix-Hallpike (it depends)
- Left Dix-Hallpike
- Supine head hanging (bring back up first)
BPPV Characteristics

• Direction
• Latency
• Duration
• Fatigability
• Reversibility

Directions of Nystagmus

• Posterior – Upbeat with geotropic torsion
• Anterior – Downbeat with torsion to bad ear
• Lateral
  – Geotropic horizontal (common)
  – Apogeotropic horizontal (uncommon)
Right Ear
Posterior Canal BPPV
Geotropic & Upbeat

VNG Goggles

- Not necessary - torsional nystagmus not visually suppressed
- But they sure help
  - Non-torsional nystagmus
  - Can see in awkward positions
  - Recordings give you time to think
Epley Maneuver

Canalith Repositioning Maneuver
Position A (Sitting)
CRM Position B
(Dix-Hallpike)

Right Ear
Lateral View
Posterior Canal BPPV

Keep the head back as you rotate it.
The nystagmus should not reverse direction.

CRM Position C
(Head Rotated To Opposite Side)

Right Ear
Lateral View
Posterior Canal BPPV

Keep the head back as you rotate it.
The nystagmus should not reverse direction.
CRM Position D
(On Side - Nose Down)

Right Ear
Lateral View
Posterior Canal BPPV
CRM Position E
(Back To Sitting)

Stabilize patient for at least a minute.
**Adjuncts**

- **Vestibular suppressants**
  - Hide findings
  - Useful for severe nausea
- **Mastoid vibration – no help**\(^1-2\) (except)
  - Multiple failures
  - Cupulolithiasis


**Post-Care**

- Post-treatment restrictions do not help\(^1-4\)
- Seat in waiting room for 20 min
- No driving for remainder of day


Epley vs. Semont

• Epley – 80 to 85% effective after one session\(^1\)
  – Easier to do
  – Better tolerated by elderly
• Semont – 90% effective after four sessions\(^2\)
  – Better for cupulolithiasis?

\(^1\)Epley JM. The canalith repositioning procedure: For the treatment of BPPV. Otolaryngol Head Neck Surg 1992; 107(3); 399-404.
Geotropism

Right Horizontal Canal
Debris Near Vestibule

Geotropic

Left Ear Down
Inhibition

Supine

Right Ear Down
Stimulation
Apogeotropic

Right Horizontal Canal
Debris Near Ampulla

Left Ear Down Stimulation
Supine
Right Ear Down Inhibition
Right Horizontal Canal

Lempert Roll

http://www.neurology.org/content/70/22/2067/F5.expansion

Right Horizontal Canal

Lempert Roll
Horizontal Canal In The Office

- Geotropic – roll away from the strongest nystagmus
- Apogeotropic – roll toward the strongest nystagmus, convert to geotropic
- Cannot tell which side – guess
**Horizontal Canal At Home**

- Log roll to one side daily for one week
- Switch sides if that does not work
- Sleep with bad ear up
- Modified Brandt-Daroff (head straight) - to loosen up possible cupulolithiasis

*Only necessary if office treatments fail.*
Right Ear
Anterior Canal BPPV
Geotropic & DOWNBEAT

Left Ear
Anterior Canal BPPV
APOGEOTROPIC & Downbeat
Anterior Canal Strategy

Deep Head Hang Maneuver
Head Midline – the effected side does NOT matter

Mimickers

• Horizontal – Positional alcohol nystagmus
• Downbeat – Caudal midline cerebellar lesions
• Upbeat – Dorsal central medullary lesions
• Torsional – Syringomyelia and syringobulbia
• Persistent – Somewhere central
Billing - 95992

- Medicare – 45.12
- Aetna – 64.29
- Cigna – 87.75
- Humana APP – 50.13
- First Health – 73.50
- BCBSA – 57.00
- DMG – E&M only

Thank You