BPPV for BGS

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Objectives

- Understand the importance of BPPV in the context of the unbalanced patient
- Use knowledge of vestibular anatomy to understand diagnostic manoeuvres
- Learn how to diagnose and cure the patient and some tricks to use in the patient with neck pain
“What do you mean by ‘dizzy’?”

- Patient’s descriptions of their symptoms are **not** reliable
- Type of dizziness is **not** a reliable discriminator in diagnosis

- Kerber & Newman Tocker 2015
You’re much better off with...

- Timing and Triggers
- Timing
  - How long is an episode
  - How frequent
  - How does it relate to other symptoms
- Triggers
  - Rolling in bed, looking up e.g. BPPV
### Causes of Vertigo

<table>
<thead>
<tr>
<th>Ear Related (50%)</th>
<th>Central - Brain</th>
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<tbody>
<tr>
<td>• Benign Paroxysmal Positional Vertigo (50%)</td>
<td>• Migraine</td>
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<tr>
<td>• Ménière’s Disease</td>
<td>• Multiple Sclerosis</td>
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<tr>
<td>• Vestibular Neuritis</td>
<td>• Posterior Circulation stroke</td>
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<td>• Labyrinthitis</td>
<td>Others</td>
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Always ask about the duration of an individual episode of vertigo and about what provokes it.

- Psychiatric
- Cardiovascular
- Drug related and other medical
The Inner Ear
BPPV

- The commonest cause of isolated vertigo
  - No deafness, no tinnitus, no otorrhoea, no otalgia
  - Elderly populations may have these as separate problems

- Vertigo lasts for seconds
  - Patient may say up to a minute

- Occurs after specific movements only
  - Movements in the vertical plane e.g. looking up or down, arising from bed
  - Rolling over in bed

- May present with vague imbalance as well

  It's the only easily curable form of vertigo
Crista and Maculae

The Macula

The Crista

Cupula
The posterior semicircular canal is in the same vertical orientation as the pinna.
Displaced Otoconia

- Otoconia in the PSCC cause:
  - The sensation of spinning associated with certain movements
  - A vague sense of imbalance especially when upright
Diagnosis

Uncommon presentations of common diseases are more common than uncommon diseases

- BPPV is very common and is underdiagnosed
- It can present in atypical ways and patient descriptions aren’t reliable
- So always consider it and perform a Dix Hallpike or side lying test
Orientation of Posterior Canal

- The commonest canal to suffer with BPPV is the posterior canal
  - 95% PSCC, 4% LSCC, 1% SSCC
- It lies in a vertical plane that is approximately that of the normal pinna
- Use the pinna as a guide to your manoeuvres
Diagnostic manoeuvres

• Dix Hallpike or side-lying test
  • Highly specific
  • Quite sensitive

• Requires a quick movement in the plane of the PSCC

• Test outcomes are: nystagmus and / or a sense of vertigo

• The characteristics of the nystagmus are important

Both work well and side lying test is very suited to patients who can't lie flat on their back with an extended neck.
Absolute Contraindications

- Neck Surgery and recent neck trauma
- Severe Rheumatoid Arthritis
- Atlantoaxial and occipitoatlantal instability
- Cervical myelopathy and radiculopathy
- Carotid sinus syncope
- Arnold-Chiari
Rapid Assessment of Safety to Proceed

- Ask if there is neck pain or stiffness
- Turn the head 45° L or R. If this can be done for 30s without pain or light-headedness then side lying test is possible
- Turn the head 45° L or R and extend the neck. If this can be done for 30s without pain or light-headedness then both the Dix-Hallpike and side lying tests are possible

Other difficulties include obesity, orthopnoea, frailty, back stiffness and pain
Dix Hallpike & Side Lying Test

**Objective BPPV**
- Physical signs
  - Typical nystagmus
- Symptom of vertigo
  - Follows pattern of nystagmus

**Subjective BPPV**
- No physical signs
- Symptom of vertigo
  - Follow the expected pattern of nystagmus even though the nystagmus is absent

No nystagmus does not mean no BPPV. If the patient has symptoms that are provoked by the manoeuvre and behave typically they probably have BPPV.
Dix-Hallpike Manoeuvre

Link to YouTube

Demonstration of safety test and Dix Hallpike
What to look for

- Latent period – a second or two usually
- Geotropic torsional nystagmus
- Nystagmus stops in a few seconds
- Reversibility – difficult to observe in most patients
- Fatigability – repeat the exam and the signs disappear

In subjective BPPV one sees a latent period followed by vertigo for seconds and fatigability
Geotropic Torsional Nystagmus

- A rotatory movement of 12 o clock towards the floor
- Use a blood vessel or a mark on the iris
Nystagmus of Left Posterior Canal BPPV

Nystagmus of BPPV
Curative Manoeuvres

- Epley Manoeuvre
- Brandt Daroff exercises
- Semont Manoeuvre
- Foster-Half
- Bashir
- Gans
Epley

- Check for restrictions in the neck and contraindications
- Explain procedure
- Done once by the clinician
- 80 - 93% cure rate
- Post-Epley restrictions help a little
- 30% recurrence rate

- Epley Video
Epley

Demonstration and Practice
Post Epley

- Don’t lie flat for two days, stay above 45 degrees
- Don’t bend down either
- Don’t drive for about an hour
- Come back if the symptoms return – or demonstrate self-Epley / Brandt Daroff exercises.
Questions Please
Video

- https://www.youtube.com/watch?v=KLt2LtISPmQ
  - Video section 1 and 4
- Geotropic Nystagmus
- Horizontal Nystagmus
Bibliography


• Post Epley restrictions: https://www.ncbi.nlm.nih.gov/pubmed/22513962
Summary of Important Points

• BPPV is very common as a cause of vertigo even if the symptoms are atypical

• Always do a Dix Hallpike or Side Lying test – whichever is safer for the patient because you can diagnose atypical cases this way

• Remember that the pinna is in the same orientation as the PSCC on the same side

• The test may be objectively or subjectively positive

• Use Brandt Daroff exercises as a home treatment or teach a self-Epley