Case 8:

EDINBURGH UNIVERSITY
EAR NOSE & THROAT
SOCIETY

The Edinburgh ENT Soc cases have not been proofread by any professionals or members of the medical school. They have been made based on the guidelines available at the time.

For questions and feedback please email us at edinburghentsoc@gmail.com or use our social media pages (@EUENTSOC on instagram, @EdinburghENTSoc on Facebook).

Susan, 55 year old female presents to her GP with a 3 month history of recurrent and sudden onset episodes of dizziness “like the room is spinning”.

The episodes last no more than a minute and are associated with certain head movements, for example when looking up and rolling over ‘certain ways’ in bed.

Between episodes, she is asymptomatic.

Question 1: What is the most **likely** diagnosis at this stage?

- A BPPV
- B Meniere’s disease
- C Labyrinthitis
- D Vestibular migraine

Benign paroxysmal positional vertigo (BPPV) is the most common cause of vertigo.

Vertigo is the sensation of yourself or the surroundings moving, in the absence of true motion.

Although 'benign' and predominantly self-limiting within 6 months, BPPV can also become chronic and recurring and cause significant impact on peoples' lives. It most commonly presents in the over 50's and is twice as likely in women.

Question 2: What is the best way to diagnose BPPV?

- A On history alone
- B Imaging
- C Dix-Hallpike Test
- D Epley manoeuvre

A positive **Dix-Hallpike Test (DHT)** diagnoses BPPV.

1. The patient sits up with their head turned 45 degrees.

2. They are lowered quickly into a supine position with their head hanging off the bed 20-30° below the horizontal plane.

3. Observe their eyes.

<u>A positive test will show:</u>

Up to 20 seconds of normal eye position followed by torsional or horizontal nystagmus lasting between 20-40 seconds.

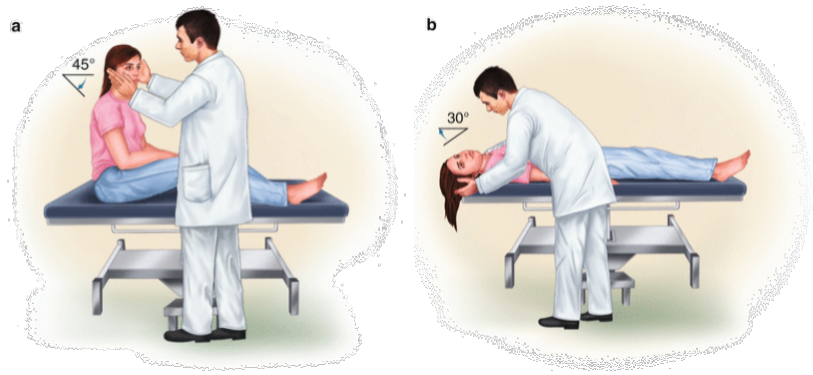

Image credit: https://link.springer.com/chapter/10.1007/978-1-4939-2507-0_43

Question 3: Susan had a positive Dix-Hallpike Test. What is the most appropriate management for her?

The Epley Manoeuvre is the appropriate management following a positive Dix-Hallpike Test. can be repeated until the patient is asymptomatic however remember these manoeuvres induce vertigo so can be dependant on each individual's tolerance.

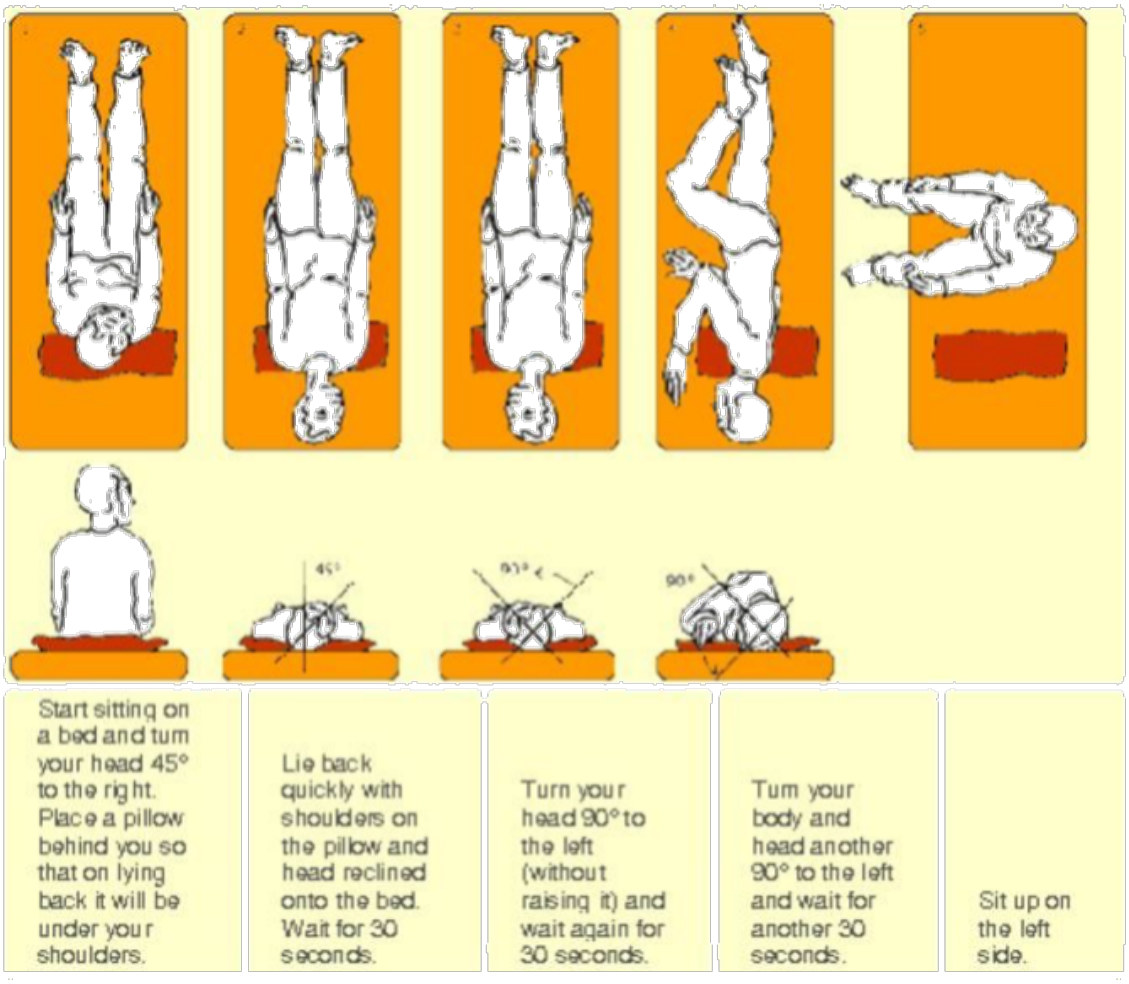

Image credit: https://www.tampabayhearing.com/epley-maneuver/

Question 4: How is BPPV thought to cause vertigo?

- A Abnormal neuronal activity in auditory cortex
- B Inflammation in the membranous inner ear structures
- C Crystals in the semi-circular canals
- D Distortion of membranous labyrinth for excess endolymph

Subjective tinnitus is thought to be abnormal neuronal activity in auditory cortex.

Labyrinthitis is inflammation of the membranous inner ear structures

BPPV is thought to be caused by crystals in the semi-circular canals

Meniere's disease is hypothesised to from distortion of membranous labyrinth for excess endolymph

The semi-circular canals detect head movement and are also involved in the vestibuo-ocular reflex.

Crystals (canaliths) are constantly being re-absorbed and re-formed — over time fragments come loose.

A rogue signal from the canal leads to misperception of movement and nystagmus *in that head position* (in the plane of the affected canal).

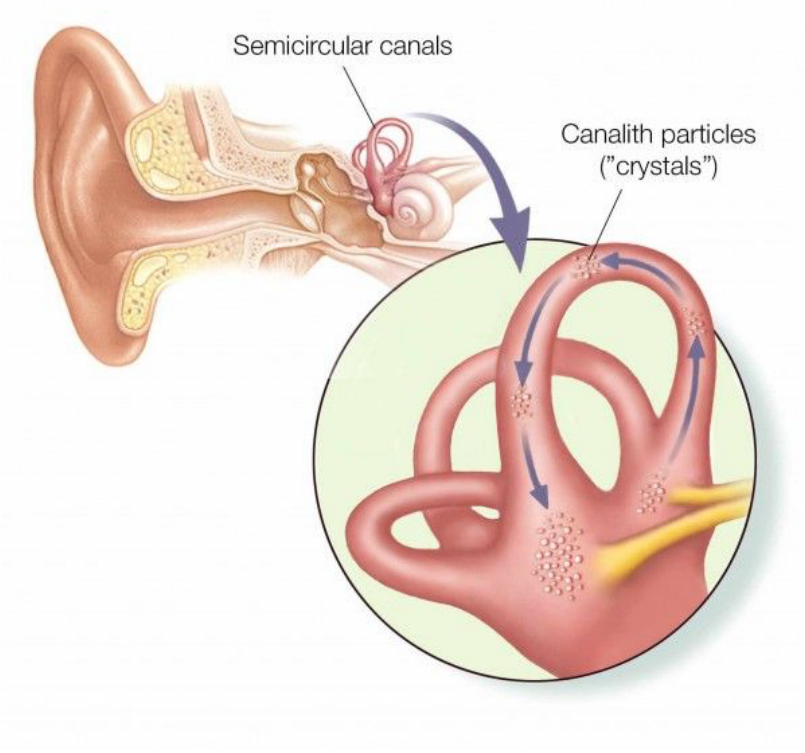

Image credit: https://newsnetwork.mayoclinic.org/discussion/mayo-clinic-q-and-a-number-of-disorders-can-trigger-vertigo/

Question 5: Susan is a straight-forward case of BPPV. Which of the following features in the history would be more concerning for a central cause of her vertigo?

- Hearing loss
- Nystagmus
- Persistent vertigo
- All of the above

Headaches, visual symptoms (double vision, visual field defects, visual loss), other sensory abnormalities such as paraesthesias or deficits, and motor abnormalities all suggest a central aetiology. If any of these are present, an MRI or CT of the head must be performed.

References:

https://geekymedics.com/benign-paroxysmal-positional-vertigo-bppv/

Parnes L, Nabi S. BMJ Best Practice. May 2019. https://bestpractice.bmj.com/topics/en-gb/73. Last accessed 07 Oct 2020

UpToDate, https://www.uptodate.com/contents/benign-paroxysmal-positional-vertigo