Epley Maneuver (Canalith Repositioning Procedure, CRP)

Purpose:
- Uses gravity to treat canilithiasis of the posterior canal through a series of 4 positions that allow the otolith (otoconia) to settle to the lowest part of the canal and finally deposit itself in the vestibule

Indications:
- Symptoms described by patient (vertigo occurs with positional changes, loss of balance, nausea/vomiting may be present) and nystagmus observed by examiner indicate benign paroxysmal positional vertigo (BPPV)
- Positive Dix-Hallpike test

Technique:
1. Patient is sitting upright on exam table or bed and positioned in such a way that their shoulder meet the edge of the table or bed when laid back flat
2. Examiner and assistant are positioned closely against the bed to prevent falls
3. Ask the patient to turn their head about 45° towards the affected side
    a. Instruct the patient to keep their eyes open the entire time so examiner can observe nystagmus
4. The examiner quickly lays the patient flat with head hanging over side of table
5. Hold this position for at least 30 seconds
6. Now rotate head 90° to opposite side keeping the patient still lying back flat and head hanging over edge of table or bed
7. Hold this position for 30 seconds
8. Ask the patient to turn or have the assistant turn the patients body and head so that the body is facing to the side and head is facing towards the ground at a 45° angle
9. Hold this position for 30 seconds
10. Return patient to upright sitting position
    a. Ensure the patient does not lean head backwards but maintains a forward and downward position of head
    b. Ask the patient to sit upright with head still for 10-20 minutes
11. May repeat procedure 5-6 times or until nystagmus/vertigo is not elicited when patient is laid with "bad" ear down

Variations:
- May apply a hand-held vibrator or tap rapidly on mastoid process of the "bad" ear to help dislodge the otoliths
- If patient is too large to maneuver safely on exam table may use exercise mat on floor

Pearls:
- Use brisk movements when performing maneuver
- Most common complications of procedure are nausea/vomiting (may administer antiemetics prophylactically), fainting, and conversion to lateral canal BPPV
- Do not perform on patients with cervical spine injuries or concerns for vertebral artery dissection

Patient Teaching:
- Instruct the patient that they may experience strong vertigo during the procedure
- To help prevent recurrence, advise patient not to lie flat, bend down, tilt head backwards, make quick head-turning movements, and sleep with head elevated at least 30° (for 1-2 days) and not on affected side for 1 week
- Can be taught to patients and family members and performed at home

- Caution patients to take precautions against falling off table/elevated surface
- Stop exercises when patient has not experienced vertigo for 24 hrs

References:

1. Epley JM. Positional vertigo related to semicircular canalithiasis. Otolaryngol Head Neck Surg 1995;112(1):154-61.
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4. Li JC. Mastoid oscillation: a critical factor for success in canalith repositioning procedure. Otolaryngol Head Neck Surg 1995;112(6):670-5.
5. Orient, JM. Sapira's Art and Science of Bedside Diagnosis. 4th ed. Philadelphia, PA: Lippincott Williams & Wilkins. 2010;562-563.
6. Radtke A et al. A modified Epley's procedure for self-treatment of benign paroxysmal positional vertigo. Neurology 1999;53:1358–1360.