



The Dizzy and Imbalanced Patient

Part III: Treatment

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Note to Participants: There are interactive pop-up questions throughout this lecture. If you choose to pause the lecture and return at a later time, a natural break time would be after answering the interactive questions. (You are able to pause at any time and the presentation will "remember" where you were. It's just a more natural time to pause after the interactive questions.) For your convenience, this outline reflects where/when within the lecture the interactive questions occur.

This lecture has 85 slides and is 94 minutes in duration.

I. Overall approach

- A. Determine if central vs. peripheral
 1. If central, exercise approach, compensate
 2. If peripheral, determine if BPPV
 - a) If BPPV, repositioning maneuver (Epley)
 3. If not BPPV, use exercise approach: Vestibular habituation therapy (VHT)
- B. Identify and manage the fall risk factors
- C. Identify and manage cervical spine impairments

II. Central vestibular disorders

- A. Adaptation exercises: the goal of these exercises is to adapt the gain of the VOR
 1. Long term (plastic) changes in neuronal responses
 2. Goals are to reduce retinal slip (improve stability of image on retina), improve postural stability, decrease symptoms
 3. X1 ("times 1," head moves while eyes fixed on stationary target) and X2 ("times 2," both head and target move) viewing, moving head as fast as possible while keeping image (target) in focus
 4. Progression variables: duration, frequency, speed, target size (large to small), small to full field stimulus, background complexity, patient position (supine, sit, stand, foot placement in standing), target distance
- B. Substitution exercises: X1 viewing, remembered targets (eyes closed), active eye-head movements (substitute saccades for VOR)
- C. Habituation exercises (see next section)
- D. Gait and balance exercises (see section 4)

Notes

III. Peripheral vestibular disorders

A. BPPV

1. Anterior and posterior canal repositioning maneuvers
2. Horizontal canal repositioning maneuver
3. Exercise approaches

B. VHT: goal of this approach is to reduce the symptomatic response through repeated exposure to small doses of the provocative stimulus

1. Goal: habituation

- a) Reproduce the patient's symptoms in a controlled and repeated manner
- b) Use the 0 -10 scale (0 is no symptoms, 1 is just starting to feel symptoms, 10 is unable to walk/function/work, vomiting) or motion sensitivity quotient to find provocative stimuli
- c) Use log sheet

2. Guidelines:

- a) Won't work with bilateral vestibular loss
- b) Symptoms must be greater than their daily baseline average level
- c) Symptoms must not render the patient non-functional (e.g., stop the exercise before reaching level 8, 9, or 10)
- d) Patients will get worse before they get better; this is a normal response and to be expected explain this to the patient beforehand

3. Treatment progression variables

- a) Eye-head coordination exercises:
 - i. Visual tracking (head still)
 - ii. Stable gaze, head moves
 - iii. Stable gaze on in-phase object
 - iv. Stable gaze on out-of-phase object
 - v. Horizontal vs vertical movements?
Which canal do you want to stimulate?
- b) Combine with balance activities (next section)

Interactive Questions – slide 31 @ 46 minutes

IV. Fall treatment

A. Developing a fall treatment program

1. Prevention!
2. Identify risk factors
3. Identify the associated impairments
4. Choose appropriate intervention strategy
5. Monitor outcomes
6. Adjust strategy appropriately

Notes

- B. Risk factors for falling:
 - 1. Postural hypotension
 - 2. Use of sedatives
 - 3. Use of at least four prescription medications
 - 4. Impairment in
 - a) Arm or leg strength or range of motion
 - b) Balance
 - c) Transfer skills: bed to chair, bathtub or toilet
 - d) Gait
- C. Specific recommendations: multifactorial interventions (community dwelling)
 - 1. Gait training and appropriate use of assistive devices
 - 2. Review and modification of medication
 - 3. Exercise programs, balance training
 - 4. Treatment of postural hypotension
 - 5. Modification of environmental hazards
 - 6. Treatment of cardiovascular disorders: arrhythmia's, syncope etc.)
 - 7. Hip protectors for those at high risk of fracture
- D. Progression variables
 - 1. Speed of movement
 - a) Slower: requires stability: strength, control of agonists/antagonists
 - b) Faster: requires control, recruit motor units more quickly
 - 2. Range of movement
 - a) Approach full range as tolerated
 - b) Require control through full available range
 - 3. Decrease stability of support surface
 - a) Firm to rocker to foam
 - b) Supine to sitting to standing
 - 4. Static to dynamic: stand to weight shift to walk
 - 5. Number of repetitions: endurance training?
 - 6. Change the sensory conditions
 - a) Visual information available? eyes open or closed
 - b) Visual information accurate? usable?
 - c) Somatosensory feedback available? accurate?
 - d) Provide secondary tasks: count backwards, hold a cup of coffee...
- V. Cervicogenic dizziness
 - A. Suboccipital traction
 - B. Towel traction
 - C. Soft tissue mobilization

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- D. Joint mobilization
 - E. Posture education
 - F. Exercises to reduce joint position error
 - G. Exercises to increase and improve muscle function
 - H. Exercises to reduce postural sway (see balance activities in previous section)

Notes

Interactive Questions – slide 62 @ 77 minutes

- VI. Outcomes are positive
 - A. Vestibular habituation therapy
 - B. Adaptation and substitution exercises
 - C. Balance and gait training
 - D. Fall prevention in the elderly
 - E. Cervicogenic dizziness

EDUCATA

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