



Case Study:

Vestibular Team Helps to Resolve Benign Paroxysmal Positional Vertigo (BPPV) Dilemma.

Summary

Benign paroxysmal positional vertigo (BPPV) is the most common peripheral vestibular etiology presenting with brief symptoms of dizziness or vertigo triggered with position changes (lying supine, rolling over in bed, tilting the head back). However, there are other conditions that mimic this etiology. Careful considerations, consultations, and referrals can help to resolve symptoms. An interprofessional team evaluated and treated a 77-year-old female patient with position-provoked vertigo secondary to a motor vehicle accident (MVA). The team worked together to solve the mystery of the unresolved vertigo and devised a new management care plan.

Patient Info



77-YEAR-OLD FEMALE

Current Diagnosis:

Head injury secondary to MVA, cervical strain, and subarachnoid hemorrhage.

Meet The Team



Audiologist



Physical therapist



Primary care provider (PCP)



Neurologist/
Neurosurgeon



Speech-language pathologist



Patient

Continue for more 

Background

A 77-year-old female presented to our clinic after she was hit by a car; she was a pedestrian, and the car was backing out of a driveway. She was first seen in the emergency room for scalp laceration and contusions to her right upper extremities. She denied loss of consciousness at the time of emergency room (ER) evaluation. Inpatient physical therapy was ordered to evaluate for (a) imbalance concerns post head injury and (b) patient safety with ADLs post discharge. An initial computed tomography (CT) scan was ordered and was read as negative for hemorrhage. A repeat CT scan was ordered because the patient was on Coumadin and revealed a small amount of subarachnoid hemorrhage. The acute intracranial hemorrhage resolved per CT scan report 1 month following head injury.

Care team consultations were conducted with neurology, neurosurgery, and her PCP, and recommendations were made for outpatient physical therapy for persistent imbalance and worsening positional vertigo (possible BPPV). She completed outpatient physical therapy for five sessions, focusing on resolving suspected BPPV, without resolution of (a) symptoms or (b) clinical signs of positional nystagmus. The physical therapist (PT) further consulted with the PCP and with a vestibular audiologist. Recommendations were made for objective vestibular testing to determine the cause of the positional vertigo.

How They Collaborated

The core team members (PT, vestibular audiologist, and PCP) reviewed the patient's past and present symptoms of positional vertigo and imbalance as well as the physical therapy test findings. The patient presented with upbeat nystagmus and possible torsional nystagmus provoked with supine-to-sit-positioning that did not change with repeat repositioning maneuvers (Epley maneuvers treating first left then right posterior semicircular canals). No nystagmus was provoked with the patient while she was in the supine or head-hanging position (e.g., Dix-Hallpike positions).

The audiologist conducted a vestibular test battery to further investigate for peripheral or central causes for the ongoing symptoms and nystagmus findings. The patient had abnormal postural control performance when relying on visual or vestibular cues to maintain balance. She had normal head impulses of all six semicircular canals via vHIT, no signs of spontaneous, gaze evoked or post-headshake nystagmus, and symmetrical caloric irrigations with VNG testing. She had asymmetrical smooth pursuit performance for leftward target movements. Her positional testing demonstrated continuous up-beating nystagmus with return to sit positioning only (supine to sit). The nystagmus did not suppress with fixation and no torsional nystagmus was observed.

The audiologist reviewed the test results with the patient's PCP and PT. After further discussion of the findings, the team outlined a new management plan for the patient's positional vertigo and imbalance concerns. The patient continued enrollment in physical therapy—but with a focus on central vestibular dysfunction, fall prevention, and habituation of symptoms. The PCP recommended further consultation with a neurologist for ongoing central signs as well as some new symptoms (memory issues and losing words mid-sentence). The team also recommended a hearing evaluation and speech-language pathology consultation for her word-finding and memory issues.

Outcome

The patient showed improvement in her balance and reduced positional vertigo symptoms with habituation exercises. She participated in four speech-language therapy sessions and progressed to a home therapy program focused on cognition and memory.

On-Going Collaboration

She is followed by her neurologist as needed and completes yearly checkups with her PCP. The core team (PCP, PT, and audiologist) meets regularly to review patient cases and discuss next steps in care for patients with dizziness concerns. Extended members of the care team (neurology, speech-language pathology, geriatrics, and occupational therapy, to name a few) are also consulted for further recommendations as needed.

Case Rubric:

Vestibular Team Helps to Resolve Benign Paroxysmal Positional Vertigo (BPPV) Dilemma.

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Head injury secondary to MVA, cervical strain, and subarachnoid hemorrhage.

Meet The Team



Audiologist



Physical therapist



Primary care provider (PCP)



Neurologist/
Neurosurgeon



Speech-language pathologist



Patient

History and Concerns

(Share key information gathered from team)

A **77-year-old female** presented to our clinic after she was hit by a car; she was a pedestrian, and the car was backing out of a driveway. She did not lose consciousness with the injury but had sustained a small amount of subarachnoid hemorrhage. She participated in inpatient physical therapy focused on performing ADLs. Care team consultations were conducted with neurology, neurosurgery, and her PCP, and recommendations were made for outpatient physical therapy for persistent imbalance and worsening positional vertigo (possible BPPV). She completed outpatient physical therapy for five sessions, focusing on resolving suspected BPPV, without resolution of (a) symptoms or (b) clinical signs of positional nystagmus.

Continue for more ↓

Case Rubric continued

Assessment Plan

(Determine roles/
responsibilities for
evaluation)

Meet the team:



Patient



Audiologist: Conducts comprehensive, objective vestibular testing, including videonystagmography (VNG) and video head impulse testing (vHIT).



Physical therapist: Conducts balance evaluation and treatment for BPPV and limitations with activities of daily living (ADLs).



Primary care provider: Facilitates care for patient by placing referrals for specialty care.

Other team members facilitating the patient's care.



Neurologist/neurosurgeon: Reviews neuroimaging, symptoms, and signs; conducts neurological assessment; and guides treatment planning.



Speech-language pathologist: Conducts speech, language, and cognitive evaluations.

Case Rubric continued

Assessment Results

(Summarize key diagnostic results)

The patient's symptoms did not resolve after multiple BPPV treatment attempts. The team members reviewed the patient's symptoms, signs, and progress notes with physical therapy.



The PT reported on the abnormal positional nystagmus findings and on the treatment maneuvers that the team used to attempt to resolve the positional vertigo symptoms.



The PCP facilitated the referral to vestibular audiology for objective vestibular testing.



The audiologist conducted a vestibular test battery to further investigate for peripheral or central causes for the ongoing symptoms and nystagmus findings. The patient had abnormal postural control performance when relying on visual or vestibular cues to maintain balance. She had normal head impulses of all six semicircular canals via vHIT; no signs of spontaneous, gaze-evoked, or post-headshake nystagmus; and symmetrical caloric irrigations with VNG testing. She had asymmetrical smooth pursuit performance for leftward target movements. Her positional testing demonstrated continuous up-beating nystagmus with return-to-sit positioning only (supine to sit). The nystagmus did not suppress with fixation, and no torsional nystagmus was observed.

Case Rubric continued

IPP Treatment Plan

(Discuss, reflect, and modify recommendations to develop a coordinated plan)

The audiologist reviewed the test results with the patient's PCP and PT. After further discussion of the findings, the team outlined a new management plan for the patient's positional vertigo and imbalance concerns.



PT: The patient continued enrollment in physical therapy but with a focus on central vestibular dysfunction, fall prevention, and habituation of symptoms.



PCP: The team recommended further consultation with a neurologist for ongoing central signs as well as some new symptoms (memory issues and losing words mid-sentence).



Audiologist: The team also recommended a hearing evaluation.



SLP: The SLP evaluated the patient's word-finding and memory issues through weekly sessions.

Treatment Outcomes

(Discuss results of treatment)

The patient showed improvement in her balance and reduced positional vertigo symptoms with habituation exercises. She participated in four speech-language therapy sessions and progressed to a home therapy program focused on cognition and memory. She is followed by her neurologist as needed and completes yearly checkups with her PCP.

Acknowledgement

ASHA extends its gratitude to the subject matter expert(s) who was involved in the development of the original version of this IPP case:

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Citations

American Speech-Language-Hearing Association. (n.d.). *Vestibular team helps to resolve BPPV dilemma*. <https://www.asha.org/practice/ipe-ipp/case-studies/case-study-25/>

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