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# Vertigo Management Through Physiotherapy for A 43-Year-Old Woman: A Case Study

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**ABSTRACT**

The illusion of motion, typically circular motion, called vertigo. Vertigo is a presenting complaint that people experience more frequently as they get older. Benign paroxysmal positional vertigo, acute vestibular neuronitis or labyrinthitis, Ménière's disease, migraine, and anxiety disorders are the most frequent causes of this syndrome. Retrocochlear tumors and vertebrobasilar ischemia are less frequent causes. Clinical judgments are frequently guided by the distinction between peripheral and central vertigo. The majority of vertigo patients can receive treatment in a primary care setting and don't need significant diagnostic testing. A canalith repositioning operation frequently improves benign paroxysmal positional vertigo. Vestibular rehabilitation activities are recommended after early stabilizing treatments and vestibular suppression medicines have been used to treat acute vestibular neuronitis or labyrinthitis.

**Keywords:** vertigo, BPPV, Physiotherapy, Case Study, Management

## INTRODUCTION

Vertigo is a multisensory and sensorimotor syndrome with a variety of etiologies and pathogeneses, rather than a distinct disease process. At 20% to 30% lifetime prevalence, it is one of the most prevalent complaints that physicians see. Patients frequently see several doctors before a diagnosis is established and treatment is started. The term "dizziness" refers either to an unpleasant disturbance of spatial orientation or to the erroneous perception of movement, which is more specifically called "vertigo." Vertigo involves a perceived movement either of one's own body, such as swaying or rotation, or of the environment, or both. Alongside headache, dizziness and vertigo are among the more common symptoms with which patients present to physicians in general, not just to neurologists. Their lifetime prevalence is approximately 20% to 30%[1]. Experience has shown that before the proper diagnosis and course of treatment are established, patients with this condition frequently embark on a whirlwind tour of different speciality doctors, starting with their family doctors and moving on to ENT specialists, neurologists, ophthalmologists, internists, and orthopedists. Stated differently, these patients frequently get lost in the gaps between different medical disciplines. Treatment options for vertigo and dizziness include medication, physical therapy, and psychotherapy; in a small number of cases, surgery may be necessary. The prognosis for many of these conditions is favorable, both because peripheral vestibular dysfunction tends to improve and because there is central vestibular compensation for asymmetrical peripheral vestibular tone. This should be explained to the patient before treatment starts. Furthermore, the majority of these illnesses respond well to treatment.

There are two main divisions of the vestibular system: peripheral and central. The otolithic organs (saccule and utricle) and the three semicircular canals (posterior, superior, and lateral) make up the bilateral peripheral system. The utricle reacts to linear acceleration, while the saccule responds to gravity. The semicircular canals detect movement of the head rotated. When stimulated, the symmetrically tonic activity of these vestibular organs activates the central vestibular system. Our sense of balance and location is maintained by the central vestibular pathways (such as vestibular nuclei), which process this information in conjunction with proprioceptive and ocular input.

A primary complaint of dizziness accounts for 5.6 million clinic visits in the United States per year, and between 17 and 42 percent of patients with vertigo ultimately receive a diagnosis of benign paroxysmal positional vertigo (BPPV).[2-4] BPPV is a form of positional vertigo.

- Positional vertigo is defined as a spinning sensation produced by changes in head position relative to gravity.
- Benign paroxysmal positional vertigo is defined as a disorder of the inner ear characterized by repeated episodes of positional vertigo.

Traditionally, the terms benign and paroxysmal have been used to characterize this particular form of positional vertigo. In this context, the descriptor benign historically implies that BPPV was a form of positional vertigo not due to any serious CNS disorder and that the overall prognosis for recovery was favorable.[5] BPPV may not, however, have "benign" effects on functioning, health, and quality of life if it remains misdiagnosed and untreated. In this context, the quick and abrupt onset of vertigo that is linked to a BPPV episode is referred to as paroxysmal. Other names for BPPV include benign paroxysmal nystagmus, positional vertigo, paroxysmal positional vertigo, and benign paroxysmal nystagmus.

Overall, the prevalence of BPPV has been reported to range from 10.7 to 64 per 100,000 population9,10 with a lifetime prevalence of 2.4 percent.[6] BPPV is also the most common vestibular disorder across the lifespan[7-9], although the age of onset is most commonly between the fifth and seventh decades of life.4 Given the noteworthy prevalence of BPPV, its health care and societal impacts are tremendous.

The costs to the health care system and the indirect costs of BPPV are also significant. It is estimated that it costs approximately $2000 to arrive at the diagnosis of BPPV, and that 86 percent of patients suffer some interrupted daily activities and lost days at work because of BPPV.[6,10] Therefore, health care costs associated with the diagnosis of BPPV alone approach $2 billion per year. Furthermore, BPPV is more common in older individuals with a correspondingly more pronounced health and quality-of-life impact. It has been estimated that 9 percent of elderly patients undergoing comprehensive geriatric assessment for non–balance-related complaints have unrecognized BPPV.[11]

The most common usage of medications is for the short-term (a few hours to several days) acute vertigo. Since vertiginous episodes in patients with benign paroxysmal positional vertigo typically last less than a minute, their benefits are limited. If dizziness persists for more than a few days, it may indicate a permanent vestibular lesion (such as a stroke), and medication should be discontinued to give the brain time to adjust to the new vestibular information.

Treatment options for vertigo, which often coexists with nausea and emesis, are many. These drugs show different combinations of antagonistic interactions between acetylcholine, dopamine, and histamine receptors. Anticholinergics and antihistamines are advised by the American Gastroenterological Association for the management of nausea brought on by vertigo or motion sickness. In the vestibular system, gamma-aminobutyric acid (GABA) is an inhibitory neurotransmitter.6

Benzodiazepines are useful in treating anxiety and vertigo because they improve the central nervous system's (CNS) ability to use GABA.
Vestibular suppressant adverse effects, including as drowsiness, an increased risk of falls, and urine retention, are more common in older people. Additionally, there is a higher chance of medication interactions (i.e., additive effects with other CNS depressants) in these patients.
Treatment for vertigo frequently includes vestibular rehabilitation activities. Through these activities, the brain is trained to maintain balance and walk by using alternative visual and proprioceptive cues. Regaining vertigo is essential for the brain to adjust to a new baseline of vestibular function in a patient. Reducing the amount of time a patient takes vestibular suppression drugs after their vertigo has been acutely stabilized will help the brain adjust to the new vestibular input.

**CASE STUDY**
**DEMOGRAPHIC DETAILS:**
**Name**: *****
**Age**: 43 Years
**Gender**: Female
**Address**: ******
**Contact:** **********
**Occupation**: Housewife

**CHIEF COMPLAINT**:
Dizziness during Head Movement

**HISTORY:**
- **PRESENT:**
  A Week Ago, The Patient Experienced Vertigo After Neck Movement. She Also Suffered Dizziness and Vomiting As The Room Spun Around Her While She Was Getting Out Of Bed, Cause Vertigo When Moving Your Head
- **PAST:**
  Fall From Stairs A Month Ago
- **MEDICAL:**
  - H/O T2DM, Medication X 2 Years
  - H/O Thyroid X 7years
  - H/O HTN X 1year
- **SURGICAL**:
  Not Relevant
- **PERSONAL**:
  - Appetite -Normal
  - Sleep Disturbed -Yes
  - Non-Smoker
  - Non-Alcoholic

**ON OBSERVATION:**

- **Facial Grimace**: Present During Diagnosis
- **MOA**: Independent
- **Body Built**: Mesomorphic
- **Gait**: Normal
- **Posture**: Normal
- **Eye Movement**: Nystagmus During Test Perform

**ON PALPATION:**

- **Tenderness**: Absent
- **Edema**: Absent
- **Trigger Point**: Absent

**ON EXAMINATION**

- **DHI**:
  16-34 [Mild Handicap]
- **AGGRAVATING FACTOR:**
  While Transfer From Lying To Sitting
- **RELEVING FACTOR:**
  Stable Head (At Rest) No Movement Of Head

**SPECIAL TESTS:**

- Dix Hallpike [Positive-Right Side]
- VAS -6/10
- Supine Head Hanging [Negative]
- Supine Roll [Negative]
- Romberg Test [Positive During Eye Close ]
- Gait Pattern [Normal]

**PHYSIOTHERAPY MANAGEMENT**

| SI No. | INTERVENTION | DOSIMETRY |
|---|---|---|
| 1. | Epley's Maneuver | 6 reps*3 sets |
| 2. | Gaze Stabilization Exercises | 5 reps*2 sets |
| 3. | Balance Exercises | 10 reps*3 sets |
| 4. | Cawthrone Cooksey Exercises | 6 reps*3 sets |
| 5. | Brandt Daroff Exercises | 5 reps*2 sets |

**DISCUSSION**

Vestibular rehabilitation exercises reduced nystagmus, postural control, movement-provoked dizziness, and subjective indexes of symptoms and discomfort in 143 primary care patients with dizziness and vertigo, according to a randomized, controlled study (RCT). In a different RCT, individuals with peripheral vestibular etiology of chronic vertigo were assessed for the efficacy of home vestibular therapy.

Vertigo significantly decreased during this trial, and the subjects' capacity to carry out everyday tasks on their own increased. The effectiveness of physical treatment was evaluated in a retrospective case series involving individuals with vestibular and balance abnormalities, regardless of whether they had a history of migraines. Significant improvement in balance and gait was observed in both groups, along with a reduction in dizziness. In the first month following acute unilateral vestibular lesions brought on by vestibular neuronitis, vestibular exercises have also been demonstrated to enhance postural control.

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