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CASE STUDY

A CASE DISCUSSION ON BENIGN PAROXYSMAL POSITIONAL VERTIGO

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ABSTRACT

Vertigo is defined as the sensation of movement of self or environment, often rotary. Vertigo results from a mismatch of the brain's three primary information systems: visual, vestibular, and sensory. Benign paroxysmal positional vertigo is the most common condition that causes recurrent vertigo, with typical paroxysmal nystagmus. Women are more affected than the men. The key physical test finding is observed on Dix-Hallpike testing. This disorder is common, easily treated; correct diagnosis avoids costly and unnecessary testing. Therapy via repositioning maneuvers is non-invasive procedures that have been found to be long term effective for BPPV. The purpose of this case study is to determine the therapy is an effective and safe treatment option that can enhance the speed and degree of recovery, minimal risk and high patient acceptance in preference to other methods of treatment of BPPV.

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INTRODUCTION

Vertigo is characterized by sensation of turning of patient or his environment. It is caused by disease of labyrinth or its connection with the brain. Main causes are Labyrinthitis, Meniere's disease, Benign Paroxysmal Positional vertigo (BPPV), due to refractive error, injury to vestibular nerve, cerebral abscess, and psychogenic vertigo etc. An estimated 35 percent of adults 40 years and older have vestibular dysfunction (Agrawal *et al.,* 2001). Vertigo with hearing loss is usually caused by Meniere disease or labyrinthitis, whereas vertigo without hearing loss is more likely caused by BPPV or vestibular neuritis (Kentala and Rauch, 2003). Benign Paroxysmal Positional Vertigo is defined as a spinning sensation produced by changes in head position relative to gravity. It is characterized by repeated episodes of positional vertigo, with typical paroxysmal nystagmus (Bhattacharayya *et al.,* 2008). It is one of the most prevalent clinical disorders and accounts for approximately 17% of complaints of vertigo (Parnes *et al.,* 2003). It represents the most important peripheral vestibular impairment along the lifespan (Prokopakis *et al.,* 2005; Choung *et al.,* 2006), although the age at onset is commonly between the fifth and seventh decades of life (Koelliker *et al.,* 2001). Women are more affected than the men in a proportion of 1.5 to 2.21 (Neuhauser and Lempert, 2009).

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The key physical test finding is observed on Dix-Hallpike testing (Viirre *et al.,* 2005). Epley maneuver (Epley, 1992) (canalith repositioning) therapy is commonly used to reduce symptoms of acute episodes of vertigo. It is safe and effective as compared with other treatment.

CASE STUDY

The purpose of this case study is to describe the therapy and Canalith repositioning procedures program and long-term outcomes for patient with Vertigo (BPPV). The researcher utilized information from the historical and physical examination to establish an individualized plan of care for the patient.

Patient Description

This 61-year-old female suffered from positional vertigo and lightheadedness for past 7 to 8 years. The initial onset of symptoms started with mild headache, neck pain, dizziness and vertigo with turning head on right side. The neck pain was intermittent, mild and followed by nausea and sometime vomiting also. This patient had not exercised regularly and reported a very sedentary lifestyle. The positional vertigo with turning head on right side, bending down, standing up and looking up was aggravated for past 3 months. This was associated with feeling of falling, sensation of walking on pillows and feeling the ground is moving. Initially the frequency of attacks was often less; it was associated only with cold-water-head-wash, indigestion, abdominal discomfort and

sleep disturbance conditions. Presently the frequency and duration of attack was increased from few seconds to minutes. All active movements were restricted due to the feeling of falling. Past family medical history was non-contributory in this patient.

Other Symptoms

Ear Symptoms- Tinnitus, pressure or fullness in right ear
Eye Symptoms- Feeling of objects moving
Vertibro-basilar Insufficiency (VBI)- Gait disturbances
Neck-head trauma- No history of trauma
Psychiatric illness- Mild depression
Medical illness- Hypothyroidism
Drug history- Thyroxin 50mcg OD

General Physical Examination

Pulse: 82/min
Blood Pressure: Lying-136/90mm Hg
Standing 3 minutes- 148/92mm Hg

Local Examination

External Ears - Pinna, auditory canal and tympanic membrane - Normal
Mastoid - Normal
Presence of fistula sign - No
Mobility of the ear drum - Normal

VIIIth Nerve

Whisper- Negative
Weber's- Normal.
Rinne's -AC>BC, Normal-positive.

Nystagmus

- Present
- Grade II
- Mixed torsional (rotational) damps with fixation & fatigability, latency post maneuver

Dix-Hallpike: In which the patient is rapidly moved from a seated position to lying position with the head 45 degrees turned and extended.

- Positive Test
- Latency of onset, torsional nystagmus, fatiguability and transient.

Neurological Examination

Consciousness - Blackout present
Speech- Normal
Fundus- Normal
Cranial Nerve - Normal
Corneal Reflex - Normal both side.
Pupils - Normal

Co-ordination: Rapid fine movements

Dysdiadochokinesia -Pronation/supination test of upper extremity – Normal.
Heel Knee Shin - Normal
Gait: Tandem walking - Normal
Finger Nose Finger test - Normal
Romberg's Test - Negative

Investigations

Pure tone audiometry - 20 dB HL
CT Scan Head- Normal study

Assessment

Symptom

- Nausea-Absent/Mild/Moderate/Severe
- Imbalance -Absent/Mild/Moderate/Severe
- Hearing loss -Common/Rare
- Tinnitus -Present/Absent
- Oscillopsia -Absent/Mild/Moderate/Severe
- Neurologic -Common/Rare
- Compensation -Rapid/Slow
- Nystagmus -Present/Absent

Treatment Schedule

- *Karnapurana with Bilva taila* (Chakradatta, 1998) for 5 days Oral Medication – *Sarivadi Vati* (Kaviraj Ambikadatta Shastri *et al*., 2005) 1 tab BD for 15 days
- The Epley maneuver/Canalith repositioning procedure on 7th day for 30 seconds each in 4 positions.

Ingredients

- ***Bilva taila –*** *Bilva, Gomutra, Ajaksheera*
- ***Sarivadi Vati*** *– Sariva, Madhuka, Kustha, Chaturjata, Priyangu, Nilotpala, Guduchi, Devapushpa, Triphala, Abhraka bhasma, Loha bhasma, Kesharaja, Partha, Yava, Kakamachi, Gunjamoola*

Precautions after Epley Maneuver

- Wait for half an hour after treatment to avoid quick spins.
- For next three days sleep upright in 45^0 degree angle.
- Avoid sleeping to affected side for next one week.
- Avoid forward bending and keep head in vertical position.

RESULTS

After completion of treatment clinical assessments were made from the interrogation and symptoms of the patients. There was a drastic change in the symptoms as:

Symptoms before treatment after treatment

Nausea-Severe-Absent
Imbalance -Moderate-Mild
Hearing loss -Rare-Rare-Absent
Tinnitus -Present-Absent
Oscillopsia -Mild-Absent
Neurologic -Rare-Rare
Compensation -Rapid-Slow
Nystagmus -Present-Absent

There was improvement in overall functional status after treatment with *Karna purana* with *Bilva taila, Sarivadi vati* and Epley Maneuver procedure. There was reduction in

vertigo, lightheadedness, neck pain, dizziness, nausea and vomiting. The gait imbalance was also improved. Nystagmus, tinnitus and oscillopsia were abolished. There was no side effect observed during the treatment as well as after the completion of treatment.

DISCUSSION

Vertigo is defined as the disorientation with a sensation of movement of self or environment, often rotary. Benign paroxysmal positional vertigo is the most common condition that causes recurrent vertigo. This disorder is common, easily treated without medications, and correct diagnosis avoids costly and unnecessary testing. The common cause of BPPV is trauma, idiopathic, vestibular neuritis and due to degeneration of inner-ear hair cells during the natural process of aging. The key physical exam finding is observed on Dix-Hallpike testing. Therapy via repositioning maneuvers is non-invasive procedures that have been found to be long term effective for BPPV.

Bilva taila is having *Vatahara* property and anti ototoxic property in nature. It is helpful in repositioning of free floating particles of otoliths within a part of the inner ear. Also helpful in regeneration of the inner ear hair cells. *Sarivadi vati* contains drugs like *Sariva, Madhuka, Kustha, Chaturjata, Priyangu, Nilotpala, Guduchi, Devapushpa, Triphala, Abhraka bhasma, Loha bhasma, Kesharaja, Partha, Yava, Kakamachi, Gunjamoola*. Majority of drugs are having *vata-kapha shamak* action. The repositioning maneuver provides quick relief for the patient.

Conclusion

This small case study demonstrates that patient with Benign Proximal Positional Vertigo can make significant gains in symptoms and function in relatively short periods of time. Our intention, however, is to serve as a demonstration of the positive outcomes through the use of a focused, impairment-specific therapy management. It determines the treatments which enhance the speed of recovery, minimal risk associated with maneuver therapy and long term effectiveness for BPPV. Despite the limitations of this case study, conclude that the therapy may be an effective option in the treatment of BPPV.

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