

# Vertigo, Can It Be Redefined?

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## ABSTRACT

### Background & Objectives

Vertigo, a clinical symptom complex is not infrequent in our patients. Its diagnosis too is controversial. Majority of these cases run from hospital to clinics, some times to Otolaryngologists to get rid of this bizarre experience. Sometimes they get benefit but otherwise they experience a destitute life.

Our aim was to treat them by Physical Therapy in the light of Cervical Spondylosis that is commonly associated with vertigo.

### Material & Methods

This is a prospective case study done in PMR department (OPD) of a teaching institute over a period of 6 months time period. 20 OPD patients of both sexes (14 ladies and 6 gents) with definite Cervical Spondylosis (CS) along with complain of vertigo or dizziness, pain at cervical spine were accounted for the study. Only extreme aged persons or patients with other major co-morbidity were excluded. These 20 patients were treated with conventional Physical Therapy for CS. Medications were prescribed as and when required.

### Results

After Physical Therapy, that included lifestyle modification, isometric cervical exercise, intermittent cervical traction, application of Ultrasonic Therapy (UST) to cervical region and proper posture care of cervical spine along with use of cervical orthosis (where needed), majority of the patients become symptom free.

### Conclusion

Physical Therapy may be considered as an alternative method of treatment of Vertigo patients, who are otherwise not responding satisfactorily to pharmaceutical agents.

### Keywords

Vertigo; Dizziness; Spondylosis; Cervical Vertebrae; Vertebral Artery; Physical and Rehabilitation Medicine; Exercise Therapy; Ultrasonic Therapy; Traction; Life Style.

Cervicogenic Dizziness or Vertigo is an infrequent human manifestation. Sometimes confusion arises- are these two terms synonymous? More or less they are almost similar but commonly we often use the term "Dizziness".

Cervicogenic Vertigo or Dizziness tends to be a controversial diagnosis, because there are no definite diagnostic tests to confirm that vertigo or dizziness is solely due to the presence of any pathology at the Cervical Spine.

Normally it is a diagnosis that is linked to the persons who have trauma to Cervical Spine along with pain and dizziness, in which other common causes of dizziness have been ruled out. Definitely the numbers of such cases are less but now-a-days in clinics and hospitals it is in vogue.

Cervical Vertigo or Dizziness that is provoked by a particular neck posture no matter what the orientation of

the head is to the gravity as it occurs by turning the head about the vertical axis while sitting upright. Seventy years ago Ryan and Cope postulated about the same. When Cervical Vertigo or Dizziness is diagnosed, the usual symptoms are vertigo or dizziness associated with neck movements, contrary to BPPV. There should not be any aura, tinnitus, hearing loss or otalgia etc.

Brandt (1996) had reviewed this topic from a diagnostic perspective.<sup>1</sup> Several other authors like Wisely (2000) reviewed the Physical Therapy approach towards its management.<sup>2</sup> Brandt (1996) have extensively worked on it. Unfortunately, there is still no consensus judgment

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how does one come to the diagnosis of Cervical Vertigo. Literatures too show poorly carried out studies regarding the diagnosis as well as the necessary management.

Cervical Spondylosis or the commonly known degenerative condition of the cervical spine (Here I would like to spare the term Osteoarthritis of Cervical Spine) is common feature of middle aged or pretty aged persons. Now it is becoming common among young men and women especially in those who work at IT sector or BPO offices. In this degenerative state, the cervical vertebrae become soft, deformed of their normal shape and subsequently new bony out growth or osteophytes appear on the vertebral bodies. Ultimately the normal height of each involved vertebra is reduced so also the total height of cervical vertebral column. In addition to the above changes the corresponding facet joints can also be involved. As a result the vertebral arteries passing through the vertebrae will be effected i.e. reduction in the length of the arteries or compression by the osteophytes as in Bow-Hunter syndrome. This results into either neurological or vascular symptoms. A vascular manifestation turns into transient insufficient flow of blood to the cerebral cortex, resulting to dizziness or vertigo.

Vertigo is presently considered a problem when there is mechanical compression during head rotation along with musculo-tendinous insertions and osteophytes starting from C1 to C6 level. Dynamic cerebral angiography is the preferred method of documenting this but it is seldom done due to the associated hazards and minimum positive findings. It is to mention here that Subclavian Artery Syndrome is not always a likely cause of cervical dizziness, though enlarged Cervical Rib as in Thoracic Outlet Syndrome may cause pressure upon Subclavian Artery which feeds the vertebral artery that may lead to Vertigo. Nystagmus along with vertigo occurring during turning of trunk, in relation to head, clearly points to wards a cervical origin of vestibular vertigo.

#### Non-vestibular causes of Dizziness

Dizziness or vertigo can be linked to a wide array of conditions linked to blood flow irregularities. Dizziness may appear from an aneurism, arrhythmia,

atherosclerosis, carotid sinus reflex and persons with degenerative arthritis of the spine with or without bony spurs pressing on the vertebral arteries and interfere with blood supply to the brain. Many poorly informed persons hold that cervical vertigo does not exist. But the incidence is not very low rather it is estimated that 20% -58% of patients who sustain closed head injuries or whiplash, experience late onset symptoms of dizziness, vertigo and disequilibrium. According to Takasaki, Jhonston et al. (2011), Whiplash Associated Vertigo (WAV) occurs in 73% persons having vertigo or dizziness.<sup>3</sup>

Different views on causation are there like kinking of vertebral artery by osteophytes, proprioceptive loss of facet joints etc for the initiation of dizziness or vertigo in persons having cervical spondylosis resulting into vertebro-basilar ischemia.

Therefore Cervical Vertigo is a matter of considerable concern. When it is diagnosed, the usual symptoms are dizziness associated with neck movement but there should not be any hearing disturbance or hearing loss (other than tinnitus) but there may be otalgia. So scientists like Wrisely (2000)<sup>2</sup> reviewed Physical Therapy approach as a modality for treatment of vertigo.

#### Diagnosis of Cervical Vertigo

Before going for investigations, it is always necessary to carry out a clinical examination at the cervical spine. Active as well as passive range of movement (ROM) in all direction at the cervical spine is carried out. Tenderness along the para-spinal area is elicited.

In order to establish cervical vertigo it is always necessary to go for plain Roentgenography of cervical spine with antero-posterior and lateral view. Some times right or left oblique views are necessary. Presence of degenerative changes in cervical vertebrae, osteophyte formation and change in cervical curvature are prominent features of cervical spondylosis. It is necessary to rule out presence of cervical ribs, hypertension and hypothyroidism.

Once diagnosis is made that cervical spondylosis is the probable cause of vertigo or dizziness, necessary therapeutic management is planned. The mainstay of management is Physical Therapy.

## Material and Methods

20 patients which included 14 ladies and 6 gents were selected from the OPD patients attending Physical Medicine & Rehabilitation department having vertigo as the chief complain with or without pain along cervical spine. This study was conducted for duration of six months.

Each patient's problem was noted and they were clinically examined meticulously as described above. Radiological investigations, computerized tomography of cervical spine were also done to establish cervical spondylosis. Anatomical curvatures of cervical spine were also noted.

### Management - Physical Therapy (Physiotherapy)

Physical Therapy incorporates Therapeutic Exercises, Postural Care for Cervical Spine, Intermittent Cervical Traction, use of Therapeutic Ultrasound and use of neck immobilizer such as Cervical Orthosis commonly known as Collars.

Commonly therapeutic exercises include isometric or static cervical exercises. It is done for 10 repetitions for 10 seconds each in flexion, extension, right and left rotations and right and left lateral tilt. Side by side shoulder girdle exercises are to be performed.

Posture care is the proper anatomical position of cervical spine. And such use of low height pillow during sleep is advised to the patient. Nowadays, orthopedic pillows are available in the market. Besides deep breathing exercise also help in adequate oxygenation in the circulation.

In addition to exercise therapy cervical traction is a modality of Physical Therapy. It is usually applied in lying position with a traction force of 2 kg in intermittent manner i.e. 8 seconds of distraction along with 2 seconds of relaxation for a time period of 10 to 15 minutes preferably two times daily for 5 days a week for 2 weeks. Along with therapeutic exercises and intermittent cervical traction therapeutic Ultra-Sound is applied to cervical area. This therapy acts as micro massage to the soft tissues at the cervical spine thereby it increases the blood supply to the local area as well as to the cerebral cortex.

For minimizing cervical spine movement it is sometimes necessary to use cervical orthoses known as collars. But it should be used as and when necessitates.

## Results

Out of 20 patients, 17 patients were relieved of their problems of reeling head. Their symptoms reduced gradually over a period of about three weeks. Pain around cervical spine also diminished significantly in persons having pain as additional symptoms. This was a subjective observation as no tool is available to measure objectively.

These patients were advised to continue therapeutic cervical exercises for long time and maintain cervical curvature by postural care. Some of the patients had been advised for lifestyle modification and physical ergonomics.

## Conclusion

Earlier view of "Cervicogenic Vertigo" a myth has now been observed as reality. Time has come that we have to think otherwise beyond internal ear i.e. vestibular problems.

So it is to be seen that a fairly good number of patients having Cervical Spondylosis, may present vertigo or dizziness as major complainant before the family physicians or the specialists. Treatment with conventional Physical Therapy for cervical spondylosis along with co-medications like Cinnarizine, Prochlorperazine Betahistine, Meclizine etc may be incorporated in order to make the patients symptom-free. Hence now onwards we would like to rethink the other way of management, for these few persons suffering from such uncomfortable condition.

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