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Cervicogenic Vertigo - A Case Report

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Abstract: ***Cervicogenic vertigo is described as a sensation of rotation caused by a change in the upper cervical spine's neck proprioceptive afferents. Patients commonly report a sensation of spinning or falling when turning or flexing and extending their heads as a result of their relationship with the vestibular nucleus. Despite the prevalence of nystagmus, no additional neurological disorders are typically found. Joint constraints, especially in the C1 - C3 motion portions of the upper cervical spine, are frequently noticed. Here, we discuss the case of a 38 - year - old woman who was identified as having Cervicogenic Vertigo (CV) based on episodes of neck discomfort and vertigo that occurred in tandem. With manual therapy and vertigo exercise, both problems got better. Because there are no specific tests to demonstrate its etiology, CV is a fairly straightforward complaint for patients, yet it frequently leads to a challenging diagnosis. No patient should be refused a suitable management in order for CV to be taken into consideration.***

Keywords: cervicogenic vertigo, cervical proprioception

1. Introduction

Many studies refer to a feeling of rotation as "vertigo," however this feeling is infrequent in Cervicogenic Vertigo (CV). An issue in the cervical area is what is referred to as "cervicogenic". [1, 2]For CV to be considered, both neck signs and symptoms consisting of pain, head - on - neck, and neck - on - trunk motion that is limited, uncontrolled, unintended, abnormal, etc. should be present and these neck signs and symptoms ought to temporally overlap with the symptom of vertigo, there need to be a history of neck injury that comes earlier than the symptom of vertigo, or above mentioned bothsign may be present [2 - 4]This aetiology is caused by a dysfunction of the zygapophyseal joints and the musculature of the upper cervical motion segments, which causes a disturbance of the cervical spinal afferents. [3 - 5]

2. Case Report

A 38 - year - old - lady complained of vertigo during neck movements mainly while looking upwards and pain over the nape of the neck. She was having an episodic bout of vertigo that started approximately 10 - 14 years ago. Her symptoms exacerbated with head motions, mainly involves rapid extension of head and head turned to one side and roll from side to side. Complain of vertigo usually lasted for 10 - 15 seconds. No complain of hearing loss, tinnitus or ear pain. She also had a complain of neck pain as well as cervical headache (occasionally) specially in occiput area, which aggravated in the previous one month, that usually increased by evening and relived by rest (sleeping).

History of tingling and heaviness in both upper extremities. No history of trauma. Having a history of hyperthyroidism for the past 3 years. Investigation reports suggesting of loss of Joint space between C2 - C3 with fusion of Spinous Process – congenital. Bilateral Small Cervical ribs with soft tissue swelling at nape of neck.

On Examination, Forward head posture with rounded shoulder was present. Spasm over Bilateral Trapezius muscle. Tenderness present over C1 - C2 Spinous Process. Mild Right side. Continuous dull aching pain was present over the nape of the neck and Bilateral Trapezius. DIX Hall Pike Test was done to rule out BPPV (Benign paroxysmal positional vertigo). On Visual Analogue Scale, it was 9 - 10 before treatment. Her Cervical Range of Motion is restricted due to pain (Table - 1).

Table 1: Cervical Range of Motion

Cervical Movements	Range of Motion
Flexion	60^0
Extension	35^0
Side Flexion (RT)	35^0
Side Flexion (LT)	35^0
Rotation (RT)	45^0
Rotation (LT)	45^0

End feel for cervical region is abnormal tissue stretch. On resisted isometric testing, cervical movements were weak and painful. Hypomobility noted over atlanto - occipital distraction and lateral glide. Reflex for upper extremity was normal. Mild horizontal nystagmus present. Tightness of Pectoralis, Sternocleidomastoid, Levator Scapulae and Scaleni was present on both sides. Cervical compression, distraction, head neutral body movement test, nerve tension test (median) and roos's test was Positive. Head and trunk rotation, cervical quadrant test was negative. Scoring for Neck disability Index (NDI) scale was 25/50 which indicates severe disability. Functional Rating Index for neck was 50%.

Following Management was given based on Impairments

1) To relieve cervicogenic vertigo, exercise prescribed by Revel and co - workers (1994) have been shown to be effective as mention in Table: 2

Table 2: Vertigo Exercise

1	In supine, Passive head movements with eyes fixed on Target.
2	Follow moving target usually alternatively, Slow saccades with free eye head movements.
3	Then Progress to, Active head movements following slow moving Target
4	Active head movements to maintain gaze on fixed target while trunk is passively moved.
5	Fixating on Target and memorising head positions then closing the eyes performing maximum rotation and returning to starting positions and Opening eyes.

Each exercise was performed 5times/day for 2 Weeks.

2) To relieve cervical spasm and Pain,

- 4 Polar Vector 90 IFT was given to the patients for 15 minutes based on Literature.
- Placement: Two electrode on Cervical region and 2 Electrodes over Upper Back region, Frequency 2 KHZ, Base – 20 HZ, Spectrum - 40 HZ, Spectrum mode - Triangular, Duration - 10 days.
- According to Shanahan et. al. (2006), they conclude that IFT is better as compared to TENS in patients with Neck pain.
- Maitland mobilization at C1 and C2 level (PA Glide) was given for cervical spine and facet joint (2 - 3 oscillations/sec) for 1 - 2 minutes.
- According to Susan Reid, Darren Rivett, et. al., They conclude that both manual Therapy including Mulligan and Maitland has same effect on reducing dizziness intensity and frequency.

3) To correct faulty alignment of Posture

- Chin Tuck exercise, Scapular retraction and Shoulder girdle exercise was given in Sitting Position (10 repetition * 3 sets/day)

4) To relieve tightness of the muscle, stretching of Pectoralis Major, Sternocleidomastoid, Levator Scapulae and Scaleni was given (30 sec hold/ 2 repetition)

5) To Improve muscle performance of cervical region

- Isometric neck and Cervical Stabilization exercise in form of craniocervical flexion/axial extension hold for 10 seconds* 10 repetitions was given.

6) To reduce tingling and heaviness, neural mobilization for median nerve was given.

After 2 Weeks treatment, VAS improved from 9 to 2. Her cervical range of motion is full except terminal restriction noted in all direction also there is improvement in NDI Score from 25 to 10. On Resisted Isometric Contraction, cervical movements are strong and Pain free.

3. Discussion

People with neck problems unrelated to whiplash typically complain of vertigo, with most patients describing feeling their muscles tense and sensitive. All cervical levels showed facet joint inflammation, the cervico - thoracic area was typically less flexible, and the majority of patients had poor neck stability and postural instability. [6, 7]

Vertigo in the neck can be brought on by aberrant sensory stimulation in the cervical spine or by inflammation in the cervical discs, which results in inconsistencies between proprioceptive information (position sense) and vestibular system (part of the inner ear). [5]

Patients who just have cervicogenic vertigo may also benefit from deep cervical flexor exercises. Cervicogenic vertigo has been linked to hypertonicity of the Sternocleidomastoid and upper trapezius muscles. [8]

We have incorporated deep cervical flexion exercises, perhaps through reciprocal inhibition. These exercises require the voluntary contraction and holding of the mechanoreceptor. This may improve joint proprioception and thereby positively affect patients with cervicogenic dizziness. [9]

4. Conclusion

Physical therapists must conduct a screening examination before diagnosing and treating dizzy patients to see whether the patient is genuinely appropriate for single PT care or whether a referral for medical - surgical (co) management is necessary. More diagnostic tests are required to establish a precise PT diagnosis and select a course of treatment if it is determined that the patient is suited for PT care. To discover the optimal management strategies for patients with cervicogenic vertigo, more research is required. The impact of sustained adherence to home program recommendations must be monitored, and outcome studies must use responsive, valid, and reliable outcome measures.

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