Orthopedic Manual Therapy Techniques in the Diagnosis and Treatment of Cervicogenic Headaches: A Case Report

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ABSTRACT

The purpose of this case report is to reflect the synthesis of extant information of orthopedic manual physical therapy interventions for patients with cervicogenic headache (CGH) that took place with completion of the investigator’s IS.

PURPOSE

The use of manual therapy approaches in the evaluation and treatment for CGH continues to evolve and grow as higher level of evidence is published. The underlying cause of CGH is a mechanical dysfunction of the cervical spine. Recent studies have provided results that support the use of OMPT to the cervical spine, as well as the TMJ, thoracic spine, and first rib, in order to relieve pain, decrease headache intensity and frequency, and increase range of motion (ROM) for patients who suffer from this chronic disorder. This case report provides the clinical reasoning behind the OMPT examination and treatment of a patient with cervicogenic headaches and discusses the outcomes of treatment.

CASE PRESENTATION

The patient was a 35 y/o female referred by her PCP with complaints of chronic neck pain. The patient presented on her initial evaluation with decreased range of motion of the cervical spine, tenderness to palpation of bilateral upper trapezius, sternocleidomastoid, and suboccipital muscles, left transverse process at C2, and right transverse process at C7, headaches into right frontal (supraorbital) region several times/month, multi-level cervical and upper thoracic segmental mobility dysfunction, muscular weakness of scapular stabilizers (middle/lower trapezius) and deep neck flexors, and postural impairments. The Neck Disability Index (NDI – 40% on initial visit) and Numerical Rating Scale (NRS – 7/10 at rest on initial visit) was a validated and reliable outcomes measure tool used to determine progress from treatment.

OUTCOME

The case patient was not seen for a formal discharge appointment during which time more formal and objective measurements could have been recorded. During the one-month follow-up visit, the patient demonstrated:

- Improved NDI score from 40% to 34%
- Improved AROM of C-spine – 75° to left and 55° to right (70 and 54 on 1st visit)
- Improved muscular strength of bilateral longus colli – 3+/5 (3/5 on 1st visit)
- Improved mobility of lower C-spine facet joints – 2+/6 (1+/6 on 1st visit)
- Decreased resting pain level from 3/10 to 2/10
- Reported decreased headache frequency and intensity

DISCUSSION

It is likely that the patient had multiple poor prognostic factors (i.e. longstanding chronic pain, medical comorbidities, and busy schedule) that also played a negative role in the degree of positive outcomes that were made during this plan of care. The mobilization techniques utilized for this case patient included upglides and downglides that utilize cranial or caudal (respectively) glides to promote motion at restricted zygapophyseal joints. The patient reported a decrease in pain overall within the neck region and decreases in headache intensity and frequency which may very well be related to the nociceptive inhibitory effect spinal manipulation therapy is able to produce.

Spinal manipulative therapy has been shown to help activate descending inhibitory pathways from the lateral periaqueductal gray area (PAG) of the midbrain, which is closely related to the behavioral responses to pain. The therapeutic exercises used for this case patient are consistent with the recommendations based on current evidence and involved low load, high repetitions at progressively higher demands. By also including exercises which required the recruitment of deep neck flexors immediately prior to active upper extremity resisted movements (DICE exercises), the patient was able to theoretically facilitate proper coordination of functional motions.

CONCLUSION

This case report illustrates the OMPT diagnosis, interventions, and outcomes of a patient with CGH. The initial patient presentation corresponded with the diagnostic criteria for CGH as outlined by the IHS and CHISG. Treatment was provided for seven visits over three months using OMPT spinal mobilizations, soft tissue manipulation, patient education, and progressive therapeutic exercises to improve strength of deep neck flexors and improve postural impairments. Although outcomes for this case patient were not clinically significant, the progress indicated as supported by current evidence, suggest that a multi-modal PT treatment program approach using OMPT interventions may be effective in the management for CGH. This case report also demonstrates the importance of considering prognostic factors and patient compliance in providing treatment for patients with CGH.

SIGNIFICANCE

From a global epidemiological perspective, it is estimated that 46% of the adult population live with active headache disorder. Studies estimate that 14-18% of chronic headaches occur from musculoskeletal dysfunction in the cervical spine.