The Conversance of Cervicogenic Headache with Perspective of **Physiotherapy**

1. Dr. Deepali Patil (Corresponding author), 2. Dr. Vishnu Received: 19- February -2023 Revised: 22- March -2023 Vardhan

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1Associate Professor & Head, Department of Musculoskeletal Physiotherapy, Ravi Nair Physiotherapy College, Datta Meghe Institute of Higher education and research, Wardha, Maharashtra, India. Email ID: dvjphysio@gmail.com Orchid ID: https://orcid.org/0000-0002-8547-3338 2Head of department, Department of Cardiorespiratory Physiotherapy, Ravi Nair Physiotherapy College, Datta Meghe Institute of Higher education and research, Wardha, Maharashtra, India. Email- vishnudiwakarpt@gmail.com Orchid ID: https://orcid.org/0000-0002-3780-2854

Abstract :

Cervicogenic headache is new emerging condition among middle age group people. A persistent headache called a cervicogenic headache (CGH) affects one or more parts of the head, neck, and/or face and is caused by the atlanto-occipital and upper cervical joints. This condition always gets confused with migraine but the actual difference is migraine rooted from brain and, CGH rooted from cervical region or skull's base. Structures such as nerves, bones and muscles present in cervical region causes cervicogenic headache. Many physiotherapeutic approaches given in cervicogenic headache including manual therapy and soft tissue manipulation techniques including exercises. Although the most recent scientific studies have not yet reached a clear conclusion, they do support the use of manual treatments in tension type and CGH. These contradicting results may be a result of the fact that not all manual treatments are effective for treating all types of migraines or that not all headache sufferers would gain from manual therapies. Primary results suggest that individuals with less sensitivity would gain more from manual treatment, while more studies are required. The effects of positional release technique and myofascial release technique on CGH have been examined in soft tissue manipulation. Clinical features of CGH are more related to trigger points and hypomobility in joints so soft tissue manipulation is problem solving and safe techniques for the condition. More research needs to be studied on soft tissue manipulation techniques.

Keywords: Cervicogenic headache (CGH), Migraine, Manipulation technique, Positional release technique (PRT), Active release technique (ART), Myofascial release technique (MFR), Latent Trigger points(LTrPs), Spinal manual therapy (SMT).

Introduction:

Nowadays headaches are a major source of discomfort and impairment. The most frequent types of headaches experienced by healthcare personnel in clinical settings include migraine, CGH, and tension type headache. These headaches come at a great cost in terms of pain and socioeconomic expense. According to The World Health Organization, headaches are a type of stress on people's health worldwide and are particularly common in western civilization (WHO). 2.2-2.5% of people in their middle years get cervicogenic headache. Chronic sign of neck/spine trauma, such as whiplash damage, is a CGH, also known as occipital headaches ¹. Symptoms and physical evidence of neck involvement, include a unilateral headache. Moving the neck, holding an unnatural head posture for longtime, or applying compression on the upper cervical area on the afflicted side externally usually exacerbate it. The cervical spine and the physical components of it, which are largely innervated by the C1, C2, and C3 spinal nerves, are the origin of CGH, a secondary headache categorised by unilateral pain. In 1983, Sjaastad et al. published the first description of it. CGH is hard to detect and manage since it shares a lot of symptoms with migraine and because there aren't many straightforward diagnostics and diagnostic criteria. Diagnostic criteria for CGH have been reviewed and changed according to International Classification of Headache Disorders. CGH is not gender specific in the over-all population, which in between 1% to 4.1%. The best methods for diagnosing CGH are the physical examination and the patient's medical history. Moreover, to check the finding and forecast treatment success, diagnostic cervical nerve and medial branch blocks, zygapophyseal joint injections, and other procedures might be employed. A multidisciplinary treatment strategy must be used because of the condition's complicated aetiology. There is currently little research on the efficiency of pharmaceutical medications and physical treatment, including stretching and manual neck traction ².

Pharmacological treatment

The upper cervical and trigeminal sensory paths intersect, and this causes nociceptive sensations to be bidirectionally referred after the neck to the trigeminal approachable area of the head and face, which causes CGH pain to be sent from the cervical source to the forehead, temple, or orbit. The context for controlling CGH by blocking the GON is provided by this. It has also been discovered that effective anaesthetic blocks of the LON and face nerve. It was noteworthy that upper cervical arthropathy may have contributed to the development of CGH and that both cervical facet joint injections and C2-C3 spinal rami blocks were successful in relieving pain. There were no problems resulting from the therapy. Intraarticular AA steroid injections' ability to temporarily relieve pain. To evaluate its long-term consequences, though, there was not enough information. As pain frequently arises across the distribution of the C2 or C3 spinal nerve roots, a deep cervical plexus block may be helpful for CGH instances that are resistant to other treatments. Immediately following a treatment at the C2/C3 level in conjunction with CGH showed a discernible decrease in pain levels. The pain returns to normal when the medication wears off, which lasts just 3-6 months. Triamcinolone 5 mg once weekly for 3-4 weeks and a nonstop cervical epidural block using lidocaine, dexamethasone, and saline (5 ml/h) were used in CGH's treatment, and they were found to be effective for at least 6 months. The mechanism and validity of this result still need to be clarified by more study. Last option for CGH patients who fails for many interventions had Radiofrequency ablation of the third occipital nerve to address referred pain from the C2-C3 facet joints, and the results showed that 88% of the patients experienced favourable outcomes, through pain-free pauses for about 297 days. For CGH cases that have failed, freezing nerve conduction has been tried to produce a long-lasting analgesic effect. Occipital cryoneurolysis's clinical effectiveness was evaluated, and it was contrasted with local anaesthetic and steroid injections. These findings suggest that the efficacy of occipital cryoneurolysis in the management of CGH may be in doubt, but more research with bigger sample numbers is needed ².

Manual therapy treatment

There are many studies conducted in different countries with cervical spinal manual therapy (SMT). As per the systemic review, SMT was not as effective as pharmacological treatment, but in one study, it was effective with a 12-month follow-up with exercises ³. The systematic review consisted of nine papers altogether. Individuals with CGH were shown to benefit from manual therapy just as much as they did from conservative treatment in terms of lowering pain, disability, and headache frequency. CGH and TTH may be successfully treated with manipulation, mobilisation, and conservative therapy. While MM is not any more effective than most conservative care therapies for reducing pain and headache frequency, the findings of this comprehensive review and meta-analysis suggest that not essentially worse either ⁴. In one study, it was found patients with CGH who received CSMT had suggestively lower levels of headache severity, disability, headache occurrence, headache duration, and medicine use than the group who only received mobilisation and exercise; the effects were also still present at the 3-month follow-up. Future investigations should look at the efficacy of various modification techniques and doses while also include a long-term follow-up⁵. Neck pain is frequently treated using manipulation and mobilisation, either on their own or in combination with other forms of care. Evidence of fair quality showed that cervical mobilisation and manipulation had equivalent effects on pain and function at the halfway point of the follow-up. Poor-quality results reinforced thoracic manipulation for pain reduction and amplified role in severe pain as well as instantaneous pain decrease in chronic neck pain, and revealed cervical manipulation may produce higher pain relief for short period than a control ⁶.

Soft tissue manipulation techniques

Patients with cervicogenic headache are now receiving myofascial release as a novel intervention, although its effectiveness has not been fully tested. Suboccipital myofascial release and consistent exercise increase pain intensity, occurrence, and Pressure Pain Threshold in people with CGH in a rapid and early manner ⁷. Among all chronic and recurrent headaches, which afflict 47% of the world's population, 15% to 20% are cervicogenic headaches. Like with individuals who suffer from migraine and tension-type headaches, people with CGH reported lower assessments of their physical functioning and similar decreases in quality of life. Pain and headache impairment were suggestively less in the group that had Positional release method together with ergonomic therapy. The PRT is a useful method for lowering pain levels and headache-related disabilities, which enhances patients' physical functionality ⁸. Both ART and Joint Mobilisation are efficient in treating individuals with persistent neck pain, however ART showed a tendency towards being more efficient in treating patients whose neck discomfort was caused by soft tissue damage. Consequently, ART would be a superior alternative for treating people with persistent neck discomfort in a medical context. These findings need to be expanded upon by more study including a larger sample size, a wider variety of participants, and a longer time frame ⁹.

Exercises

It was proven in systemic review and meta-analysis that exercises are additional BENIFITED than manual therapy. Adults with cervicogenic headaches may benefit from short-term manual treatment and long-term neck exercises ¹⁰. Headache and arm pain related to neck discomfort have been proven to be successfully treated by strength and endurance workouts when combined with stretching exercises. Also, the study revealed that headaches had no detrimental effects on the outcomes of exercise treatment. Strength training can thus be

suggested to individuals who are having a severe headache coupled with neck discomfort because headache does not appear to be a barrier to it ¹¹. Even though training adherence was typically rather low, stretching alone or strength training and stretching together found to be a long-term beneficial ¹². Since the low quality of the evidence decreases the confidence of these findings, it may be advised to preferentially employ Special Neck Exercise to attain better short- to medium-term benefits ¹³. There has not been agreement on the best kind and amount of exercise for treating non-specific neck discomfort. The outcomes of this study prove the value of exercise as a treatment option and suggest that the impact of an exercise regimen that targets deep cervical muscles on pain relief may be equivalent to that of other vigorous exercise programme as being much more beneficial than other forms of exercise in treating deficits of the Deep Cervical Flexor Muscles in those with tenacious neck discomfort ¹⁵. In clinical treatments for patients with neck discomfort, it is advised to take into account the muscular strength of the deficient scapulothoracic muscles and to employ the appropriate cervical and scapula-focused resistance exercise (CSRE) concurrently ¹⁶.

Discussion:

Physiotherapy plays an important role in treatment of cervicogenic headache with neck pain. Manual therapy techniques given in past 2-3 decades with basic exercises of neck. Nowadays soft tissue manipulation techniques found important treatment part of cervicogenic neck pain. According to study, combining a cervical exercise regimen with a manual therapy method to address the mobility constraint of the upper cervical joints considerably decreased the pain's visual analogue scale and improved pressure pain thresholds in further treatment sessions ¹⁷. Cervical Arterial Dysfunction is a potentially serious disorder that must be taken into consideration in musculoskeletal examination; nevertheless, for manipulation therapist should perform possible clinical tests to identify presence of risk.¹⁸. Treatments for people with headaches and/or neck discomfort that include manipulating and mobilising the cervical spine are well known. Although unlikely, their advantages might come with possible hazards in the form of severe adverse events, such as neurovascular injury to the brain ¹⁹. Thoracic thrust joint manipulation (TTJM) is seen to be quite safe, which has led to an increase in the body of research supporting its usage in clinical settings. Negative reactions (Adverse events) to TTJM, however, have been observed. As a result, support for more research must be based on knowledge of present practise ²⁰. Myofascial trigger points are a clinical sign of muscle pain (TrPs). There is proof that TrPs can start a peripheral nociceptive pathway, changing the central nervous system. Several investigations have shown that persons with tension-type headaches (TTH), migraines, cervicogenic headaches, and, in some circumstances, cluster headaches, are all sensitive to the referred pain induced by TrPs replicating their headache pattern 21. MFR and exercise are efficient treatments for increasing cervical muscle strength, especially in those with CGH who have weak right and left rotators and cervical extensors. Employing any of the treatments depends on the clinician's clinical decision and the patient's morals, but it appears that MFR and exercise are a more successful combination than either of them by themselves ²². Positional release technique is a useful therapeutic intervention for the management of somatic dysfunction, although it does not work for everyone. When used in a comprehensive treatment plan, it works best. As pain is reduced and tissue tension and length are restored, muscle fibres may once more operate normally to promote healing. Strengthening is essential to rehabilitation

because it reduces the risk of weakening if a muscle remains kinked for a long time ²³. Both ART and Joint mobilisation are successful in treating people with persistent neck pain, however ART has shown a tendency to be more successful in treating patients whose neck pain is brought on by soft tissue damage. As a result, ART seems like a preferable alternative for treating individuals with persistent neck pain in a medical context ²⁴. Improved active range of cervical lateral flexion, lower pain intensity on VAS, and decreased thickness of the upper trapezius muscle were the immediate results of Muscle energy technique and ART on patients of each group with Latent Trigger Points in upper trapezius muscles. The upper trapezius symptoms of LTrPs were decreased in the two groups equally by the manual ART and MET procedures, neither of which was better than the other ²⁵. Adults with cervicogenic headaches may benefit from short-term manual treatment and long-term neck exercises. The majority of CGH cases may be treated or avoided by flexing and strengthening the bones, muscles, and tissues in the head and neck. Combining stretching exercises with specific strengthening exercises has been found in clinical investigations to alleviate cervicogenic headache episodes. Craniocervical Flexion (CCF) Exercise, Flexion and Extension Exercise, Rotation Exercise, Lateral Flexion Exercise, Chin Tuck Exercise, Back-Strengthening Exercise, and Shoulder Blade Exercise are a few examples of these exercises ²⁶.

Conclusion:

Overall treatment for CGH includes manual therapy, soft tissue manipulation techniques, and exercises. Manual therapy like cervical and thoracic manipulation techniques reduces pain in CGH, but we need to check its safety to determine if it is necessary. While soft tissue manipulation techniques like ART, PRT, and MFR are safe to use and have a positive effect over CGH, Exercises are an important part of any dysfunction, so it is vital to incorporate exercises in CGH. The exercise protocol is well designed for CGH and well explained ²⁶.

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