CASE STUDY

Resolution of Vertigo, Migraines and Neck Pain in a 12 Year Old Boy Receiving Chiropractic Care – A Case Study

David D. Kelly, BSc Chiro, BSc[1] & Kelly Holt, BSc (Chiro), PGDipHSc[2]

Abstract

Objective: This article describes and discusses changes in vertigo, migraine and neck pain symptoms in a 12 year old boy receiving chiropractic care.

Clinical Features: A twelve year old boy with a long history of routine, recurrent dizziness, chronic neck pain and migraines presented for chiropractic care. These symptoms resulted in him being absent from school more than half of the time for the previous seven years

Intervention and Outcome: The patient received high velocity low amplitude thrust chiropractic adjustments for the reduction of vertebral subluxations over a twelve month period. The C2 and C6 spinal segments were regularly adjusted over this timeframe, as well as mid-thoracic vertebrae and the sacrum. The initial frequency of care was three chiropractic visits per week for four weeks. Visit frequency was then gradually reduced over the next 12 months to one visit per month. Besides the chiropractic adjustments the patient was also advised to perform cervical stretches (lateral flexion, rotation and flexion/extension) twice daily. After the first week of chiropractic care the patient reported a cessation of his headaches and neck ache. His vertigo attacks decreased in frequency and became less severe, then ceased altogether. His attendance improved dramatically at school and dropped from 223 half days absent the previous year to 56 half days absent for the 12 months after beginning chiropractic care.

Conclusion: This case report describes a child who reported a cessation in symptoms of vertigo, neck pain and headaches after beginning chiropractic care. There are a growing number of case reports that suggest chiropractic care may be beneficial for patients suffering from vertigo. Further study is required to investigate the role chiropractors may play in caring for people with vertigo.

Key Words: *Vertigo; Chiropractic; Migraine; Case Reports; Manipulation, Chiropractic; Vertebral Subluxation; Adjustment*

Introduction

Vertigo is generally experienced as a sensation of spinning that is often described as 'dizziness' unsteadiness or giddiness.[1] The symptoms can range from mild dizziness of short duration through to severe symptoms including nausea and vomiting through to an inability to stand or walk. The nature of symptoms associated with vertigo tends to be related to its aetiology.[1] Vertigo is often categorized by the neuroanatomic site of origin and is generally classified into either central or peripheral vertigo.

1. Private Practice of Chiropractic, Wellington, New Zealand
2. Assistant Director of Research, New Zealand College of Chiropractic, Auckland, New Zealand

Central origins include the central vestibular apparatus including the brainstem vestibular nuclei and their central connections. The causes of central vertigo are demyelinating diseases, arteriovenous malformations, intracranial and extracranial tumors of the brainstem and cerebellum, cerebral hemorrhage, and brainstem vascular disease.[1]

Peripheral origins of vertigo are the peripheral vestibular apparatus (namely the internal ear labyrinth and the vestibular portion of the acoustic nerve) or the proprioceptive sense organs of the cervical spine. The most common type of peripheral vertigo is benign paroxysmal positional vertigo (BPPV) which is thought to be related to displaced otoconia floating in the semicircular canals.[1,2] Other causes of peripheral vertigo include Menieres syndrome, Lermoyez syndrome, labyrinthitis, vestibular neuronitis, acoustic neuroma, direct trauma to or infection of the semi-circular canals, vestibule-toxic substances or cervical dysfunction.[1,3]

Cervicogenic (or cervical) vertigo refers to dizziness or episodes of dizziness associated with neck pain or dysfunction.[3] It is a controversial diagnosis that may be due to altered proprioceptive feedback from mechanoreceptors in the neck causing sensorial deficits to the process of orientation.[3]

Cervical dysfunction may also be a cause of migraine. The theoretical mechanism to explain this phenomenon is that primary afferents in the upper cervical spine converge on trigeminal afferents which creates the potential for pain to be misperceived by higher order centrs.[4] Human studies are yet to provide good evidence for this mechanism,[4] but a number of trials that have utilised chiropractic care or other treatment modalities in an attempt to improve cervical dysfunction have provided promising results in people suffering from migraines.[3,5,6]

A growing body of evidence supports the use of chiropractic by patients suffering from conditions such as cervicogenic vertigo or migraines.[5-7] The purpose of this case report is to add to this growing body of evidence and provide further support for more clinical trials to be conducted to investigate this potential relationship more thoroughly.

Case Report

Clinical Features

A 12-year old boy presented to a private chiropractic practice in Wellington, New Zealand with recurrent vertigo, headaches and neck pain. The vertigo had begun when he was 3-years old and had been getting progressively worse in intensity and recurrence over recent years. The clusters of dizziness would begin every 3 months, predictable to within 1-2 days.

The clusters were characterized by 5-20 seconds of extreme dizziness, every 15-30min. They would start around 5am in the morning and usually last for a few hours. No particular movements or other causes were identified that triggered the attacks. This pattern would be repeated daily for 3-5 days until they ceased, until the next 3-monthly bout. The duration of each episode increased to the stage where he would be experiencing symptoms for 2-months, then symptom-free for 1-month.

When he was 3 years old he would wake with the dizziness, nausea and occasional vomiting, with associated screaming and distress. Neck ache began at age 8, associated with headaches that would occur 2-3 times per week. At the times when he was not having an episode of dizziness his headaches would occur once per week. When he was not having these attacks he was a happy, positive boy who enjoyed school, with no auditory symptoms, balance or neurological symptoms.

The vertigo was sufficiently debilitating to prevent him from going to school. He had consistently missed between half and two-thirds of his scheduled school days since beginning school at age 5. Table 1 summarizes his absences from school over the previous seven years.

The boys' mother could not remember any trauma that precipitated the symptoms except that the patient did develop torticollis at age 4 weeks which lasted for 2-years.

Examination

On presentation to the chiropractor, physical examination was unremarkable. No nystagmus or balance problems were evident. Decreased rotation and lateral flexion were found upon cervical spine range of motion testing. Palpation of the cervical spine revealed upper cervical and cervico-thoracic segmental vertebral subluxations.

Besides numerous visits to his GP, in the previous five years the boy had been assessed once by an otolaryngologist, three times by a neurologist, twice by a pediatric neurologist, and once by a senior medical lecturer. The diagnoses provided by the physicians were 'benign paroxysmal vertigo of childhood', 'recurrent nocturnal and at times positional vertigo', 'recurrent vertigo preceded by migraine', and finally 'migraine with vertigo'.

Intervention

A working diagnosis of cervicogenic vertigo and cervicogenic migraine was made. A plan of chiropractic care utilizing high-velocity, low-amplitude adjustments of vertebral subluxations was recommended. The initial frequency of care was three times per week for four weeks. Following that period, frequency of adjustments decreased to two visits per week for seven weeks, then weekly for 16 weeks, once per fortnight for eight months and then ongoing monthly care. Segments of the spine that were routinely adjusted were C1-2 and C6-7. Besides the chiropractic adjustments, cervical stretches (lateral flexion, rotation and flexion/extension) were recommended to be performed twice daily.

Outcome

After the first week of chiropractic care the patient reported a cessation of his headaches and neck pain. His cluster of vertigo that was due to develop four weeks after the commencement of chiropractic care did not eventuate. This was the first time in nine years it had not occurred with the predictable regularity.

Two months after starting chiropractic care he had a mild episode of vertigo for 3 days. He had another 3-day episode eight months later. After two years of regular chiropractic care these two brief episodes remain the only symptoms the child has experienced. During this time he has not reported any further headaches or neck pain.

Since beginning chiropractic care he was able to go to his first school camp and has been regularly attending school. In 2008 the boy had 54 half days absent from school compared to 223 in 2007. Before beginning chiropractic care he had stopped playing sports because he felt frustrated that he missed so many trainings due to the vertigo, but he has subsequently taken up a variety of sports again as he can now regularly attend training and games.

Discussion

This case report describes a 12 year old boy who experienced cessation in his long term vertigo, headaches and neck pain after beginning chiropractic care. The immediate resolution of these complaints following the initiation of chiropractic care suggest that they may have been cervicogenic in nature and that the chiropractic care provided improved cervical function.

Mechanisms have been described previously that suggest that cervical dysfunction alters mechanorecptor function in the cervical spine which then causes inappropriate proprioceptive feedback into the central nervous system which may then result in symptoms of headache, migraines and vertigo.[3,4,8]

Chiropractors are primarily concerned with locating, analyzing and correcting vertebral subluxations which are described as "a complex of functional and/or structural and/or pathological articular changes that compromise neural integrity and may influence organ system function and general health."[9] Correction of vertebral subluxations or spinal manipulation has been associated with reduction in altered mechanical receptor activity in the spine and altered sensorimotor integration in the cortex.[8,10-12]

It is possible that in this case study chiropractic adjustments to the patient's spine improved cervical function in a manner that resulted in improved proprioceptive input and therefore sensorimotor integration which then resulted in improvements to the symptoms the patient was exhibiting.

Conclusion

This case study adds to the growing body of evidence that exists that provides support for the efficacy of chiropractic care for people suffering from cervicogenic vertigo or headaches/migraines.[5-7]

It is important that the chiropractic profession continues to investigate this relationship utilizing well designed clinical trials. It is also important that the profession continues to utilize quality basic science experiments to study the potential mechanisms that may explain why chiropractic care may be beneficial for people suffering from these conditions.

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Table 1: School days missed for seven years prior to beginning chiropractic care

Year	2001	2002	2003	2004	2005	2006	2007	2008
Half-days absent from school	287	205	287	287	192	207	223	56
Total half-days of school	394	394	394	394	394	392	386	394
Absent half-days as a percentage of total half days	73%	52%	73%	73%	49%	53%	57%	14%