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Resolution of headaches, and improvement in energy and mental clarity in a 30-year-old male: A case report

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Background: A thirty-year-old male presented for care with primary concerns relating to worsening headaches. Further investigation revealed neck pain, knee pain and poor posture.

Intervention: The patient commenced a course of chiropractic care using the Advanced Biostructural Correction Technique. (ABC™).

Outcomes: In addition to resolution of his headaches and marked improvements in posture, neck pain and knee pain, the patient also reported an improvement in energy and mental clarity. No other changes had occurred in his routine or care, and hence these were attributed to the impact of chiropractic care.

Conclusion: Chiropractic care is well-established as a care modality that is useful for back and neck pain, as well as headaches. This case report presents the possibility that it should also be considered for mental clarity and increased energy.

Indexing Terms: Chiropractic; Subluxation; Advanced Biostructural Correction Technique; ABC; Headache; mental clarity; Quality of Life.

Introduction

While postural concerns have long been a focus of Chiropractors across the broad spectrum of techniques and practices, the neurological changes that occur when posture is compromised, and the impacts they may have not only on pain but on cognition and performance are yet to be explored.

It has been well established in the literature that Chiropractic is indicated as an effective care modality for headache sufferers. It has also been well-established that forward head posture (thoracic kyphosis) contributes to headaches.

With all this said, the impact of poor posture, especially in the cervical spine, has yet to be fully explored when it comes to non-musculoskeletal pain or issues like mental clarity and human performance. Yet, with such prolific innervation running through the cervical spine, it is reasonable to hypothesise that the impacts could indeed be prolific.

> *... following care delivered as the ABC protocol the patient has the confidence, energy levels and body mechanics to continue embracing new challenges for his body. He described the changes as life-changing ... '*

Initial case report data has begun to elicit indications that Chiropractic care may influence mental clarity. Steinberg (1, 2023) reported the case of a 63-year-old female whose mental clarity improved alongside balance and gait while under subluxation-based chiropractic care. Hawkes (2, 2024) reported on a 26-year-old cancer survivor who presented with musculoskeletal pain but reported an increase in mental acuity alongside his other improvements. A third case reported self-reported improvement in mental processing in a 74-year-old patient who was able to return to meaningful connection with work and community post-chiropractic care (3)

In all three of these cases, the patients had presented for something other than mental clarity. The emergence of recent literature by Haavik et al. (4, 2024) has begun to explore the connection between pain, anxiety and the default mode network of the brain. The default mode network, which is active during periods of rest and quiet wakefulness but suppressed when a person is paying attention to something else, is an emergent area of research but may be involved in self-referential thought, autobiographical memory, social cognition and future planning as well as daydreaming and recalling experiences such as pain and mood.

The research indicating Chiropractic may impact this brain region, thus changing a person's experience of life, may be the beginning of a growing understanding of how Chiropractic may impact mental clarity, among other areas of cognition and performance.

The performance element, in a physiological sense, hails back to research indicating that Chiropractic shortens the cortical silent period, improves cortical drive to the muscles and increases maximal contractions. The latter two have been tested with specific muscles and not generalised to the whole body, yet the mechanisms are likely the same. When we adjust the spine, the brain changes. This impacts how the body responds to stimuli, increasing strength and reducing fatigue. (5 - 9)

This present case report examines an increase in energy and mental clarity concurrent with postural improvements in a 30-year-old athletic male who initially presented with concerns about headaches.

Case details

A 30-year-old male IT professional presented for Chiropractic care with a primary complaint of headaches. He was new to Chiropractic care and maintained a high level of physical activity. He was also a Coeliac Disease sufferer, having been diagnosed at 16 years of age.

Upon presentation to the clinic he reported that he had been suffering from headaches for approximately one year and that they were intermittent but worsening. The headaches were usually exacerbated first thing in the morning or after exercise and were described as a tight band across the suboccipital region and referring across the forehead. They were dull and tight with accompanying blurred vision and light sensitivity. He described them as a 7 out of 10 on the numerical pain scale.

While the headaches were the primary complaint, he also suffered from neck pain and poor posture.

His chiropractic examination included a medical history and physical examination with digital postural analysis (Posture Screen) and EOS micro-dose X-ray. Upon first presentation, numerous clinical findings were detected. Seated tests returned a positive Kemps test on the right cervical area, a negative Valsalva and negative slump test. He was also negative for signs of Vertebral Artery Dissection. A compression test was positive, with a headache triggered when cervical pressure was released.

Standing tests including a Rhomberg's Test showed forward movement of the body after several seconds. A positive Lewins/Adams test was returned on the right upper lumbar area. While prone, a Yeoman's test was negative. Range of motion was restricted in cervical flexion,

right rotation and right lateral flexion, as well as the thoracic spinal region in extension, and the lumbar spine in flexion. There was also restriction in the Suboccipital (C1) in flexion, extension and rotation.

There were no remarkable findings on a neurological examination. However, EOS imaging revealed a scoliosis convex to the right at L2/L3 (with a Cobb Angle of 16°) and to the left at T7/T8 (with a Cobb Angle of 11°). The patient showed a loss of normal cervical lordosis throughout with early kyphotic changes at C3/C4. He also had a loss of normal thoracic kyphosis at T8 - T12 and loss of normal lumbar lordosis from L1 - L4.

Subluxations were assessed, found and treated in accordance with the Advanced Biostructural Correction (ABC™) method at each visit. Tension was observed in the meninges, and subluxations were observed between C7 and L5, Sacrum, and lower limbs.

After the above findings were found, the patient began a care plan in which he was adjusted using ABC protocols. This involved:

- Assessing and Stretching points of meningeal adhesions throughout the spine
- Anterior style adjusting of bones between C7 and L5
- Assessing and correcting sacrum subluxations using the ABC Adjusting Instrument
- Correction of lower limb subluxation such as tarsals, metatarsals, ankle, fibula head and hip joints.

In addition to treatment, advice was given to improve workstation ergonomics as well as correct pillow height for body positioning. The patient was advised to continue exercise (as the patient is a long-distance runner) so that the Chiropractor could monitor his symptoms post-exercise. No other exercises or recommendations were given.

The patient was originally scheduled for three visits per week for the first four weeks, and then two visits per week for another six weeks. The aims of care were to reduce or eliminate headaches, improve posture and improve overall shock absorption in weight-bearing joints involved in long-distance running

Reviews were performed after twelve and twenty-four visits (At four weeks and ten weeks of care respectively).

Outcomes

At the four-week review, a right lateral view of the patient's posture revealed a decrease in anterior head carriage which went from 3.41° extended to 2.46 ° extended. His shoulder anteriority reduced from 1.15° flexed to 0° and his anterior pelvic angle went from 2.98° of flexion to 2.58°. The knee went from 4.39° of flexion to 4.68° of flexion.

On left lateral view of posture, his anterior head carriage went from 6° extended to 1.78° extended. His shoulder position went from 3.61° to 2.35° flexed. In addition, his anterior pelvic angle reduced from 3.39° flexed to 0 and his knee angle improved from 5.67° flexed to 4.56° flexed.

At this point, the patient was noticing approximately a 90% improvement in headache frequency. He also noticed that his energy levels had improved, that his mind felt clearer and less fuzzy, that the quality of sleep had improved and that his overall well-being had changed for the better.

His ten-week review revealed a further decrease in anterior head carriage, which decreased from 3.41° extended to 0° extended. It was now normal. His shoulder position went from 1.15° flexed to 1.22° flexed. His anterior pelvic angle went from 2.98° of flexion to 0° of flexion, which was now normal. His knee position went from 4.39° of flexion to 6.12° of flexion.

The patient's left lateral view of posture showed some significant improvements. His anterior head carriage went from 6° extended to 1.87° extended, and his shoulder went from 3.61° flexed to 1.32° flexed. His anterior Pelvic angle went from 3.39° flexed to 3.38° and his knee angle went from 5.67° flexed to 3.2° flexed. (Further improvements in knee position were noted over the course of further Chiropractic care)

At this point the patient was feeling 100% improvement and no more headaches. His energy levels and overall sense of wellbeing continued to be much higher than prior to starting care, and in addition, he noticed an improvement in the quality of his exercise (long-distance running).

The patient described his Chiropractic care as life-changing and that all conditions that he had sought care for had improved. The patient was able to complete the Sydney Marathon with no pain or headaches in the months following his engagement with Chiropractic. At the time of writing, he was training for an 80km event, and was able to train and compete with confidence.

> He initially described his symptoms as affecting every area of his life and was worried about how his body would cope if he and his wife had children in the future. Now, he has the confidence, energy levels and body mechanics to continue embracing new challenges for his body. He described the changes as life-changing

Discussion

Clinically, the most notable changes in this case are the postural change in the cervical spine and shoulder, as they moved into more neutral positions, thus relieving the abnormal mechanical pressure occurring at the suboccipital region. This mechanical pressure was likely to contribute significantly to the headaches, particularly during sleep and after running. The latter is likely due to the heavy impact of long-distance running and shock absorption through the neck and into the suboccipital region.

With this said, it was noteworthy that the patient did not suffer from other impacts of compromised shock patterns resulting from these faulty posture mechanics. Ordinarily, we would expect to see low back pain, or pain through the knees and hips.

The only change to the patient's routine over the course of care was Chiropractic Treatment using the ABC method. The treatment, coupled with simple changes to sitting and sleeping ergonomics, is more than likely the key contributing factor to their improvement, particularly because the patient's exercise routine was not modified during care.

ABC™ has been anecdotally shown to improve a patient's posture. The objective findings on Posture Screen and the base of evidence on how posture can affect one's health supports this hypothesis.

Conclusion

Recurring headaches are strongly within a Chiropractor's scope of practice. This case supports the hypothesis that biomechanics of an individual's chest, shoulders, cervical and thoracic spine are significant in headache prevention and should not be overlooked when assessing and treating sub-occipital dysfunction. But this alone does not tell the full story, as this case report indicates.

The flow-on effects of improved energy levels, sleep, state of mind, exercise, and overall wellbeing are also worth documenting as potential outcomes for someone under Chiropractic

care, especially as the profession establishes itself further outside mechanical neck and back pain alone.

Further studies examining the holistic and whole-of-person effects of chiropractic care would therefore be of benefit as we serve the wider population.

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About the Chiropractor

Dr Adrienne Leahy completed her Bachelor of Chiropractic Science at *Murdoch University*, Western Australia in 2011 and her Master of Chiropractic at *Macquarie University* in Sydney in 2013. Upon completing her Master Degree Adrienne studied Advanced Biostructural Correction™ through seminars conducted by *Advanced Biostructural Correction Australasia* and their international counterparts. Adrienne is a part of a group practice of Chiropractors in Sydney's Lower North Shore providing ABC Chiropractic care for their patients.