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ASRF CASE REPORT PROJECT

Resolution of persistent sleepwalking (somnambulism) in 41-year-old female: A case report

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Background: A 41-year-old female presented for Chiropractic care with a primary complaint of headaches and neck pain. While the headaches and neck pain were the initial reasons for presentation, her intake assessment revealed that the major disruptive issue in her life was that of somnambulism.

Intervention: The patient was managed primarily using Modified Activator Methods and cranial adjusting, with the clinical focus on correcting upper cervical and cranial subluxations while promoting vagus nerve regulation.

Outcomes: Within one year of care, the patient's sleepwalking had completely ceased. She achieved her goal of sleeping alongside her husband, and long-term neck pain and headaches had remained absent for the past year. Frequency of care was reduced, and cranial subluxations were fully corrected.

Conclusion: This case illustrates the potential for chiropractic care to address complex and multifaceted health concerns where other interventions have been unsuccessful.

Indexing Terms: Chiropractic; Subluxation; sleep walking; somnambulism; cranial adjusting; Quality of Life.

Introduction

Getting a good night of sleep, particularly after a period of disrupted sleep, can feel refreshing, rejuvenating the body and the mind. It is also vitally important for development, recovery, and learning. Sleep is a process that is fundamental to our health and yet so much of the Australian population struggles to achieve an adequate quality and quantity of sleep. (1)

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Insufficient sleep is associated with adverse health outcomes, both in the short- and long-term. In the short-term, poor sleep can impact work performance and safety, cognition, and emotional resilience. Long-term outcomes include an increased risk of many conditions, such as hypertension, cardiovascular disease, and colorectal cancer. (2)

Recent research illustrated significant neuroplastic responses to chiropractic care, with one notable impact of the study being improved sleep, though specific

mechanisms were not individually addressed. (3) Three case reports have featured improvements in sleep concomitant with subluxation-based chiropractic care. (4, 5, 6) In all three cases, improved sleep contributed to an improvement in Quality of Life.

Thus far, no Chiropractic research into sleep-walking has been published. Chiropractic literature examining parasomnia is similarly limited. Research indicates that sleep walking usually occurs during slow-wave (deep non-REM) sleep. Here the brain is in a state of partial arousal, in which the motor cortex and brainstem remain active for basic life functions, while the prefrontal cortex remains largely offline. A neurological dysregulation may lead to difficulty transitioning from sleep state to sleep state which may lead to sleep walking. (7) Factors like stress, tiredness or other biological factors may impact this. How nervous system care may impact this condition has not yet been elucidated.

The following case report is therefore novel in terms of our understanding of parasomnia in general and somnambulism in particular.

Case details

A 41-year-old female presented for Chiropractic care with a primary complaint of headaches and neck pain. She reported having a moderate activity level and was irregular but not novice to Chiropractic care. While the headaches and neck pain were the initial reasons for presentation, her intake assessment revealed that the major disruptive issue in her life was that of somnambulism, sleepwalking.

For the last six months she got up every night, once or twice, and proceeded to punch her husband while still asleep and having no residual memory of the event or fatigue in the morning. Her husband had moved to a guest room and she wished to have normal sleep and have her husband sleep with her again. The situation made her uptight and anxious.

The only trauma reported was that she fell on her head as a child. She had an MRI of her head to rule out mass, infection and inflammation in January 2023. The results of this MRI stated that she was '*Negative for infarcts. Empty Sella, slightly tortuous optic nerves and bilateral transverse sinus stenosis could be sequela of idiopathic intracranial hypertension*'.

The patient then consulted an ear nose and throat specialist, an endocrinologist, neurologist, and ophthalmologist. At the time of presentation, she was wearing a CPAP at night and had been prescribed diuretics (Diamox).

In addition to her primary complaints and medical history, the patient described chronic neck pain of several years duration. She described it as a constant ache, which reached 7/10 on the numerical pain scale at worst. Her headaches had been present for as long as she could remember, but had worsened in the six months leading up to her presentation. She also suffered from peri-ocular numbness on the left side, and was aware of pressure on the pituitary gland as well as anaemia and hair loss.

Clinical findings

Her initial chiropractic examination provided the baseline before commencing a care plan. During this examination, her vital signs were taken with her temperature recorded at 96.6 F 35.8°C with a SpO2 reading of 99% and Blood Pressure of 130/82. Her pulse was 87 beats per minute. Examination revealed pain with cervical extension, right rotation, and left lateral flexion, but her range of motion was within normal ranges both here and in the lumbar spine.

The examination included x-rays, posture analysis, palpation, orthopaedic and neurological tests, and revealed a mixed set of findings. Cervical compression testing provoked neck pain on the left but was negative on the right. Neurological assessments, including RAPS (Rapid

Alternating Precision Sequencing), eye convergence, Romberg, one-leg stand, eye movements, and smooth pursuit, were all near normal.

Deep tendon reflexes of the bilateral *biceps*, *triceps*, and *brachioradialis* were graded 2+, and light touch sensation in the upper extremities was symmetrical. Manual muscle testing demonstrated full strength (5/5) across all bilateral upper extremity muscle groups.

Postural and leg checks revealed a forward head carriage and a prone right leg short by 1 cm, with a positive Derefield finding. Palpation and analysis identified subluxations at C1 right, C2 left, C5 left, L5 left, and the right posterior-inferior ilium. Additional cranial findings noted the sphenoid as sunken in and posterior bilaterally.

Radiographic evaluation further detailed structural concerns. Penning's analysis of the cervical spine demonstrated fixations at C1 in extension, C3 in flexion, C5 in extension, and C6 in both flexion and extension. Imaging also revealed a loss of cervical lordosis, forward head posture, left head translation, and a right anterior-inferior sacrum. An enlarged sella turcica was additionally observed, supporting the presence of significant postural and spinal imbalance.

Subluxations were found at C1 (right), C2 (left), C5 (left), L5 (left), right posterior interior ilium and Right anterior-inferior sacrum. Fixations were noted at C1-extension, C3-flexion, C5-extension, C6-flexion and extension.

Management

The patient was managed primarily using Modified Activator Methods and cranial adjusting, with the clinical focus on correcting upper cervical and cranial subluxations while promoting vagus nerve regulation.

Additional care included trigger point therapy following the Bonnie Pruden model. The patient was recommended at home cervical range of motion stretches via Webexercises, as well as use of a cervical orthotic (the Denneroll) daily 15-20 minutes based on tolerance starting after two weeks of care.

The patient was also introduced to multiple at-home vagus nerve stimulation exercises such as gargling, singing, and laughing.

The initial care plan involved treatment three times per week for 12 weeks, after which a cervical motion study was scheduled for reassessment. Following this, care frequency was reduced to twice weekly for six months, with subsequent visits occurring every two weeks up to the present. The patient's primary goals were prioritised sequentially: to sleep alongside her husband, reduce headache frequency, normalise ocular comfort, and achieve neck pain relief.

Progress was reviewed through scheduled examinations on 27 March 2023, 24 April 2023, and 1 June 2023, with follow-up cervical radiographs obtained on 1 June 2023. Throughout care, attention remained focused on structural correction of upper cervical and cranial subluxations, as well as the up-regulation of the vagus nerve, to support both musculoskeletal and autonomic nervous system function.

Outcomes

By 1 June 2023, the patient demonstrated significant clinical improvement. All previously positive orthopaedic and neurological tests had returned to normal, and she reported an 80% reduction in neck pain. Headaches were fully resolved, left eye numbness had subsided, and sleep disturbances, including sleepwalking, had notably improved with a 25% reduction in sleepwalking episodes.

Follow-up Penning's analysis revealed fixations at C1 in extension, C4 in flexion, and C5 in extension, indicating residual, localised cervical restrictions while other areas had stabilised.

Approximately one year into care, the patient reported that sleepwalking had completely ceased and had not recurred. She achieved her goal of again sleeping alongside her husband, and long-term neck pain and headaches had remained absent for the past year. Frequency of care was reduced, and cranial subluxations were fully corrected. Penning's analysis continued to show structural improvement, although cervical lordosis had not yet fully normalised at the time of re-imaging. All cranial subluxations had been sustainably corrected.

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> 'I feel almost perfect now. A year and a half ago, I felt like everything in my body was not working right. Now, I sleep well and have no headaches, only the occasional neck stiffness. The changes have been dramatic'

These outcomes reflect both objective improvements in spinal function and subjective enhancements in quality of life, highlighting the effectiveness of the care plan in addressing her primary concerns.

Discussion

The patient initially presented with considerable anxiety related to chronic sleepwalking, which had placed stress on her personal relationships and caused ongoing worry after multiple consultations with various specialists had failed to provide either relief or clear answers. The resolution of her sleepwalking not only reduced her discomfort but also alleviated a major psychological burden, allowing her to regain a sense of control and stability in her life.

The patient's progress was closely linked to the specific and sustained Chiropractic care she received. Over the course of care, from February 2023 to July 2024, she was checked and adjusted 96 times. This frequency was necessary to support the gradual neurological and structural changes required for her body to optimise healing. Her high level of compliance with care recommendations was a critical factor in her success. Positive changes were noted as early as three months into care, enabling a transition to follow-up care with increased confidence and hope for long-term resolution.

An important aspect of this case is its implication for understanding the relationship between subluxations and neuropsychological states. While the exact pathophysiology of sleepwalking remains poorly understood and lacks objective diagnostic measures beyond symptom resolution, the improvements seen here suggest that correcting subluxations may influence neurological processes related to sleep and anxiety. The patient's ongoing engagement with care was supported by early improvements in other health concerns, which helped maintain motivation through the longer timeframe required for full resolution of her sleepwalking.

Conclusion

From a clinical perspective, what stands out most is not only the elimination of sleepwalking but also the transformation in the patient's emotional state. The initial anxiety, sense of loss, and lack of control have been replaced with calmness, confidence, and a renewed ability to move forward with her health and family life.

This case illustrates the potential for Chiropractic care to address complex and multifaceted health concerns where other interventions have been unsuccessful.

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About the Chiropractor

Dr Jean-Marc graduated from Life Chiropractic in 1984 with a Doctor of Chiropractic, before pursing further chiropractic study in Paris, France, and serving in the French Army for one year. Since then, he has been in family chiropractic practice, and served on several boards such as the Massachusetts Board of Registration, and the Massachusetts Chiropractic Society. He has a history in Military chiropractic care, and civic service through community volunteer work. He has extensive experience in chiropractic paediatrics, Thompson Technique, Activator Methods, and Applied Kinesiology. He and his wife Linda, also a chiropractor, share two children.

About the Case Report project

This Case Report is a part of the ASRF Case Report Project, a project designed to gather client studies from chiropractors and transform them into much-needed case reports, focused on the effects of chiropractic care on clinical presentations highly relevant to chiropractic, such as stress, immunity and adaptability.

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