

Improvement in memory, balance and hearing in a 91-year-old male under chiropractic care: A Case Report

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Abstract: A 91-year-old male presented for chiropractic care following recent weight loss and worsening memory loss. It was reported that his vocabulary was roughly 50-60% of its prior capacity.

Objective/Clinical Features: abnormal cervical spine, ligamentous instability at C4-C5 and C5-C6, abnormal calcifications in the thyroid tissues, low blood oxygenation (at 92%), abnormal weight distribution, and abnormal balance and falls risk.

Intervention/Outcomes: He received chiropractic care via the *Functional Neurological Technique* which uses a friction plate and a friction coefficient in order to determine subluxation, line of drive, completion of treatment and order or adjustment. The adjustment is accomplished with 2-18 pounds of force in sustained contact.

Clinical improvements included noted structural improvement in the structural spine, with improved stability in the cervical spine. The calcifications in the thyroid tissue were no longer evident, and regeneration was now beginning in his disc tissues at C3-C4 vertebra. The patient's blood pressure was now in normal limits (having gone from 138/78 to 120/82), and his bloody oxygen level was now at 100%

Conclusion: Further research is required to confirm and explain this effect, as well as to investigate any inflammatory-brain connections involved in memory loss in older adults without a diagnosis of neurodegenerative conditions under chiropractic care.

Indexing Terms: Chiropractic; Subluxation; balance; memory.

Background

As people age, it is often accepted that loss of balance, and loss of memory are par for the course. However, chiropractic research emerging from New Zealand has indicated that falls risk (which involves balance) may be mitigated by chiropractic care. (1) Given the severity of falls in older adulthood, and the burden of care lengthened recovery places on the health system as well as friends and family, the mitigation of this risk is a worthy consideration in older adulthood.

... An elderly male has the same rights to Quality of Life as all others. This report shows that a caring, gentle chiropractic approach can produce positive subjective and quantitative change and improvement ...'



Increasingly, chiropractic research is offering up evidence that the chiropractic adjustment may increase sensorimotor integration, which is important for mobility and coordination among other things. We are also seeing evidence that cerebellar processing and cortical drive can be positively impacted by chiropractic. (2) Recent research has indicated that spinal manipulation may impact sensorimotor integration in the prefrontal cortex - an area of the brain that influences memory. Just how this may impact memory loss or neurodegeneration is yet to be fully explored. (3)

Within the traditional medical community nervous system inflammation is increasingly thought to have impacts on cognitive issues in the elderly population. (4) Currently, this is thought to co-occur most frequently with neurodegenerative disorders such as *Alzheimer's Disease* and *Dementia*, as well as in conditions such as depression. When the patient is otherwise healthy and has no such diagnoses, memory loss is most often attributed to ageing. But does that always need to be the case?

History and Examination

A 91-year-old male presented for chiropractic care following recent weight loss and worsening memory loss, the latter of which began at approximately age 65. It was reported that his vocabulary was roughly 50-60% of its prior capacity. He was also experiencing balance issues, a history of falls which were increasing in frequency, and was also experiencing hearing loss that was chronic and worse on the right.

He maintained a high-level of fitness for his age. He was a long-term athlete who still enjoyed running two to three times per week. An ex-military man with a full schedule of vaccines from his time in service, he reported that he '*did not like doctors*' and '*did not like drugs*.' He reported chemical sensitivities to IVP Tetracycline and a history of mould exposure.

He had a medical history of anemia, dizziness, low blood pressure and had been fitted with a pacemaker. His only medications were occasional tums (antacid-like medications) and NSAIDS.

Upon presentation to the Institute, a thorough history and examination was undertaken. During this, the following clinical findings were noted: abnormal cervical spine, ligamentous instability at C4-C5 and C5-C6, abnormal calcifications in the thyroid tissues, low blood oxygenation (at 92%), abnormal weight distribution, and abnormal balance and falls risk. His attending chiropractor was unable to perform a body composition test due the patient's low weight and dehydration.

Typically, a patient needs to weigh at least 120 pounds and have body water of 40% to be able to get a reading through the Tanita body composition scale (which measures body fat / water / visceral fat / bone mass). This patient weighed in at 119 pounds (54 kg) at the beginning of the first week of concentrated care and it was not possible to perform a body composition test. After the first week of concentrated care we were able to get a body composition ready of 51.8% body water with the patient's weight 119.6.

Treatment

Upon commencement of his treatment plan, the patient underwent a concentrated care week. This care week is intensive, customised, and neurologically focused accompanied by customised modalities, therapies, and hands-on work tailored towards regenerating individual health. He received chiropractic care via the *Functional Neurological Technique* developed by Avery Martin. This technique uses a friction plate and assessment uses friction coefficient in order to determine subluxation, line of drive, completion of treatment and order or adjustment. The adjustment is accomplished with 2-18 pounds of force in sustained contact.

This is combined with rest, education and gentle (outdoor walking) type exercise over the course of a Monday to Friday week. During this week, he received 49 low level force chiropractic adjustments, multiple active and passive motion therapies, multiple cryotherapy and photo-biomodulation sessions. Four months later, he commenced the second week of concentrated care during which he received 30 low level force chiropractic adjustments in addition to the other therapies as noted above. Following the second week of care, the patient's weight was 123.6 lbs (56.06 kg) and his body water was 55%.

Outcomes

Upon re-evaluation, clinical improvements included noted structural improvement in the structural spine, with improved stability in the cervical spine. It was also noted that the calcifications in the thyroid tissue had gone, and that regeneration was now beginning in his disc tissues at C3-C4 vertebra. The patient's height had changed from 4'11 to 5'2¾" (from an original height of 5'6"). His blood pressure was now in normal limits (having gone from 138/78 to 120/82), and his bloody oxygen level was now at 100%. He had gained 4.6 pounds and his visceral fat had improved from 17 to 15 (where normal is 10).

The patient self-reported improvements in balance, memory, weight gain, and hearing.

Discussion

This case presents numerous considerations and complexities given the patient's state when he presented for care. While the structural spinal improvements and stability in the cervical spine are perhaps expected under chiropractic care, the regeneration of disc tissue and the resolution of the thyroid calcifications present novel findings. While previous studies have pointed to blood pressure improvements under chiropractic care, and the self-reported improvements in balance tie directly to previous work on chiropractic care in the decrease of falls risk, the improvements in memory in the absence of a neurodegenerative diagnosis represents a novel and significant finding. (1, 5)

The latter is significant given research into sensorimotor function and its impact on the prefrontal cortex. (3) In light of this, the present case report may provide some clinical evidence that chiropractic care can assist in memory in older adulthood as well as decreasing falls risk.

Further research is required to confirm and explain this effect, as well as to investigate any inflammatory-brain connections involved in memory loss in older adults without a diagnosis of neurodegenerative conditions under chiropractic care.

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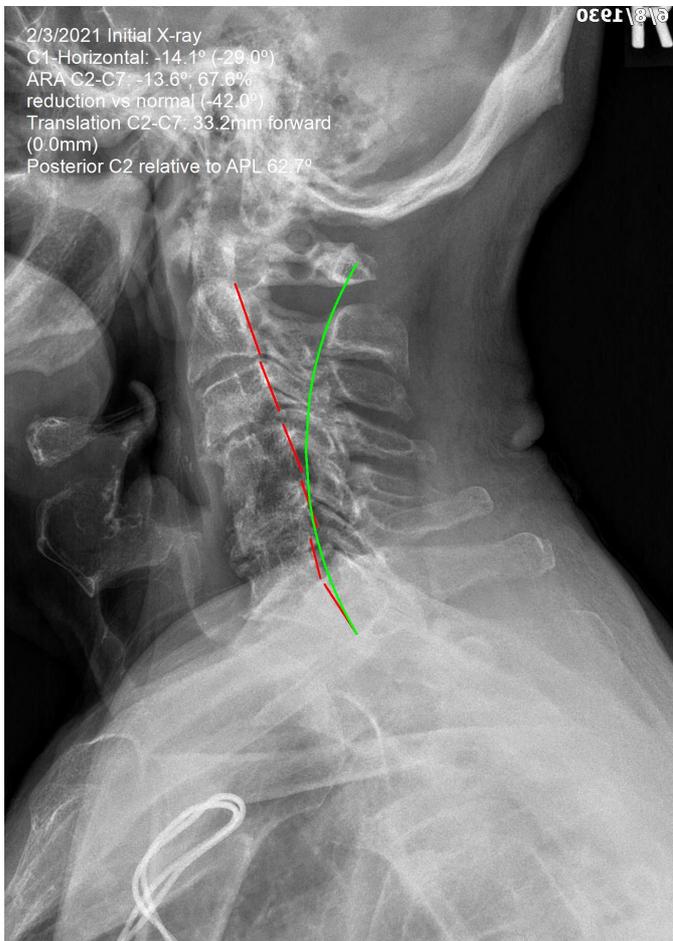
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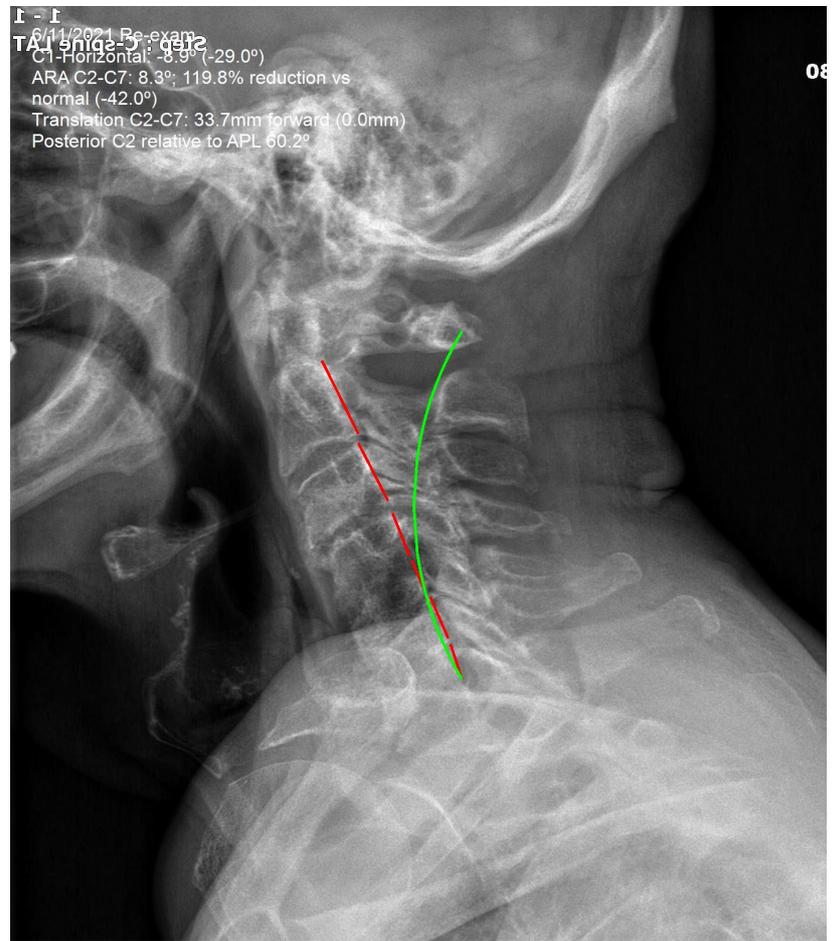
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Images

On admission



On reassessment



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Also by these authors

Kolterman S, Martin A, Postlethwaite R, McIvor C. Chiropractic Management of an 18-year old female with lupus: A Case Report. Asia-Pac Chiropr J. 2021;2.3. URL apcj.net/paper-issue-2-5/#AverioLupus

About the Institute

The *Averio Institute* is a neurologically focused, multimodal health care facility that offers regenerative therapies alongside chiropractic care, nutritional support, rest, exercise and other functional neurological interventions in a five day concentrated care program tailored to individual guests.

About the Case Report project

This Case Report is a part of the *ASRF Case Report Project 2021*, 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. This project was made possible by the generous fundraising and contributions of ASRF supporters.

ASRF definition of subluxation

'A vertebral subluxation is a diminished state of being, comprising a state of reduced coherence, altered biomechanical function, altered neurological function and altered adaptability.'

