CASE STUDY

Resolution of Fibromyalgia Following Upper Cervical Chiropractic Care: A Case Study

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ABSTRACT

Objective: The purpose of the paper is to describe the care of a patient with fibromyalgia and an upper cervical subluxation.

Clinical Features: A 45 year old female presented for chiropractic care. Her history included two major traumas and 10 car accidents leading to complaints of an 11 year history of fibromyalgia. Other complaints included migraine headaches, chronic neck pain, upper and lower back pain, numbness in fingers, sciatica, right knee pain, depression, and duodenal ulcer.

Intervention and Outcomes: Upon examination the patient had an upper cervical subluxation determined by x-ray and pattern analysis. Upon correction of the upper cervical subluxation utilizing a specific knee chest technique, the patient experienced resolution of fibromyalgia as well as most of the concurrent complaints.

Conclusions: This paper described successful upper cervical chiropractic care in the case of a patient with fibromyalgia. More research is warranted on upper cervical chiropractic management of those with fibromyalgia.

Key words: *Fibromyalgia, chiropractic, upper cervical, subluxation, knee chest, pattern analysis*

Introduction

Fibromyalgia is a chronic condition affecting 4-6 million people in the United States.[1] It is characterized by chronic, widespread pain of the entire body for more than three months.[2] It is diagnosed by the presence of 11 out of 18 tender points that elicit a painful response to less than 4 kg of manual pressure.[3]

Ninety percent of fibromyalgia sufferers are women, who begin to experience symptoms between the age of 40 and 50.[2] Concurrent symptoms associated with fibromyalgia include numbness, stiffness, generalized fatigue, headaches, irritable bowel symptoms, swollen feelings in the tissues, as well as anxiety, depression, and mental fogginess.[1,2,4] After much research and repeated scientific inquiries, the etiology of fibromyalgia remains unknown.[4]

Many forms of treatment have been used to reduce the symptomatology of fibromyalgia. Changes in nutrition, diet, exercise, as well as acupuncture and manipulative therapy have been investigated, either with or without the use of pharmacological treatments.[5]

Pharmacological treatment has shown to achieve symptom relief in less than 50% of the fibromyalgia population[1] while stress-management techniques were shown to have some success.[6] Trends in chiropractic research include chiropractic correction of subluxation in addition to soft tissue massage,

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stretching, resistance training, stress-management techniques and education.[1,2,6,7]

The purpose of this paper is to describe successful upper cervical chiropractic care of a patient with fibromyalgia.

Case Report

History

The patient was a 45-year-old female who presented for chiropractic care with complaints of migraine headaches, chronic pain in the neck, upper and lower back, fibromyalgia, numbness in fingers, sciatica, right knee pain, depression, and duodenal ulcer. She attributes the following history to her condition.

She sustained a traumatic injury from diving head first into a shallow pool at the age of 15. This caused stabbing pain in her neck and back, as well as the inability to continue participating on the swim team. She was given Tylenol with Codeine for pain and attended physical therapy. The patient was also in 10 car accidents over 25 years. The car accidents brought about right leg pain.

She experienced stabbing, tingling and numbness in her legs and back from her pregnancies. The patient was given cortisone injections in the groin to relieve the pain. She was diagnosed with fibromyalgia by her medical doctor. Five years after the diagnosis, she had another traumatic head injury, when she fell head first down a flight of stairs. This increased her sciatica, neck, and back pain.

The patient had been to five chiropractors over 12 years, who provided temporary relief of her symptoms. She was in chronic pain and suffered from depression. She was given Vicodin, Flexeril, or Soma at different times for her pain and soft tissue injuries. Her activity levels were limited in that she could not use stairs, swim, or walk further than 20 feet. She used a wheelchair as it helped her complete her daily routine and limit her tiredness.

Examination

Upon examination of the patient had anterior head carriage, forward rolled shoulders, and anterior pelvic tilt. Range of motion of the cervical spine showed restricted motion on extension and right and left rotation. The patient also had decreased extension and right and left lateral flexion on lumbar range of motion.

Orthopedic testing was positive on Kemp's and Adson's bilaterally. Cervical compression and shoulder depression were positive in all ranges of motion. Lower extremity testing showed Nachlas and Ely's tests were also positive bilaterally. Neurological findings presented with weakness and pain in the thigh on the left during heel and toe walking. The patient's upper extremity reflexes were all 2+; however Achilles reflex was 1+ bilaterally on Wexler's Scale. Muscle strength of the upper extremity showed left deltoid weakness rated at 3/5 on the Oxford or Van Allen's Scale. She also had positive findings on sharp/dull sensation.

Palpation was performed to assess for subluxations. Taut and tender fibers, fixation, and hypertonic muscles were noted from occiput to C2. Taut and tender fibers, along with hypertonicity were also noted from C6-T1, T6-T8, and L3 to the SI joints. Edema was also noted from L3 to the SI joint.

TyTron C-4000 instrumentation was used to perform cervical and full spine skin temperature differential scans. A subluxation pattern was established by conducting three full spine scans and three cervical scans on the first visit, followed by another cervical scan at the report of findings. (Figure 1)

This pattern was used to identify upper cervical subluxation in the patient. All adjustments were administered based on the existence of pattern and in accordance with the listing found on the chiropractic radiological exam.

The radiological examination performed on the patient included a neutral lateral cervical, AP open mouth, AP open mouth in right and left lateral flexion, and base posterior films. The x-rays were taken and analyzed for upper cervical biomechanical dysfunction. (Figure 2)

Once the misalignment was determined by radiological findings, and neurological changes were noted through skin temperature differentials, it was determined that the patient had an upper cervical subluxation. The patient had biomechanical dysfunction at both atlas and axis, denoted by the listings ASLP (anterior-superior-left-posterior) and B-R (body right) respectively.

Intervention

The patient was treated using specific knee chest upper cervical care. The doctor's position for this adjustment was a fencer's stance with the doctor arched in the body drop position, on the side of the listing. The patient was in the knee chest position with her upper cervical spine resting in the floating neck of the table, with her head rotated toward the side of the listing.

The contact point used for the correction was a hard pisiform and the segmental contact point is the body or posterior arch for axis or atlas, respectively. No tissue pull was performed, and the line of drive was the line of correction determined by the base posterior film. The adjustment was performed by completing a body drop and triceps extension perpendicular to the table. After the adjustment, the patient was rescanned for comparision. (Figure 3)

Upon arrival for all other visits, the patient would sit in the waiting room to acclimate. A pre-adjustment scan was performed and compared to the established subluxation pattern. If she presented with a clear scan, indicating the absence of an upper cervical subluxation revealed by thermal symmetry, she was allowed to go home for the day.

If she presented "in pattern," indicating fixed thermal asymmetry, then she was adjusted. A post-adjustment scan was used to determine if adjustment was successful revealed by a return to thermal symmetry.

She was checked a total of 79 times over 17 months. During

this time it was necessary to perform 47 adjustments. After 9 months of care, the patient began to receive adjustments to the atlas vertebra, as adjustments to axis were no longer producing thermal symmetry.

She was re-evaluated using standard orthopedic and neurological testing five times over the course of her care. She completed a Recovery Progress Questionnaire, in which she described improved symptoms, changes in general feelings such as better sleep, more energy, and less pain. She also reported tasks such as walking, standing, sitting, and bending that have become easier.

After completion of the questionnaire, she was re-evaluated by assessing her vital signs, performing a full spine skin temperature heat differential scan, cervical and lumbar spine range of motion, spinal evaluation which included tenderness, muscle tightness, edema, and fixation from occiput to coccyx, as well as repetition of any previous positive orthopedic and neurological tests from the initial physical.

Outcome

Within six months of the first upper cervical correction, the patient revealed that she no longer needed wheelchair assistance. At the first re-evaluation, she reported that her fibromyalgia and left leg sciatica had resolved. She was able to move and perform basic daily functions and sleep in any position. She was feeling more relaxed and had more energy throughout the day. She stated that the sciatica in her right leg improved by 60% and was no longer on any medications.

At second re-evaluation, she stated that her chronic back pain and headaches had resolved. She only continued to have minor right sciatica. By the fifth re-evaluation, 6months into care, her knee tenderness had also resolved. Her sciatica on the right had 98% improvement.

She stated she was able to perform house and yard work. She was also able to swim, walk distances, and stand for long periods of time without taking Tylenol or Advil. The only complaint she had at this point was right hip pain.

Discussion

The theory of subluxation was first described in Stephenson's Chiropractic Textbook.[8] It described the subluxation as misalignment of a vertebra with the one above, below or both, occlusion of an opening, pressure on a nerve, and interference with the transmission of mental impulses.[8]

In 1934, Palmer updated the definition of subluxation to include a fifth element in which he described, "the ONLY place in spinal column where we can have a THREE direction, torqued, "locked" permanent SUBLUXATION is in the occipital, atlas, and axis combination relationship articulations. No other place in spinal column is it possible to have a THREE direction, torqued, "locked" PERMANENT misalignment."[9]

Since this time, many other theories of subluxation have been defined and redefined to include 5 and 9 component models as well as degeneration, nerve root compression, dysafferentiation theory, and others.[10] The commonality between all theories of subluxation have always and will always include a structural and neurological component to the subluxation.

O'Malley discussed the chiropractic healing model which suggests that the chiropractic adjustment must be specific if it is to achieve a positive outcome.[11] He further stated that the biomechanical component of the subluxation is characterized by aberrant motion through which the primary tool of choice used by many chiropractors is palpation.[11] It has been found that most studies on motion palpation of the lumbar spine demonstrate marginal to poor inter-examiner reliability and good to moderate intra-examiner reliability has generally been shown.[12]

This discussion continued to explain how chiropractors internalize their palpatory finding which in turn provides a biased picture; then leading to a lack of actual findings, but findings which fit predetermined "listings". He concluded by stating that our solution does not lie in abandoning the chiropractic subluxation, but rather to find a reliable external measure that is less subject to cultural biases as those embedded in the palpation process.[11]

In the upper cervical subluxation complex, as defined by Palmer, the first two elements can be determined through the use of spinographs. The last three elements must be determined through the use of instrumentation. In modern upper cervical chiropractic, x-rays are still used to find the location of the misalignment, where new and improved forms of instrumentation are being used to determine paraspinal skin temperature differentials to indirectly measure function of the autonomic nervous system.

Pattern analysis is used by upper cervical chiropractors to find consistent scans which demonstrate Palmer's fifth element of permanency, indicating an upper cervical subluxation. Studies have been performed to find the stability of thermal patterns as well as inter- and intra-examiner reliability.

In a study by Hart and Owens, scans taken on patients became more stable after a 16 minute acclimation period.[13] Reliability of the TyTron was found to be very high, with Intraclass Correlation Coefficient values between 0.918 and 0.984. This suggests that changes seen in thermal scans were likely due to actual physiological changes rather than equipment error.[14] This method of subluxation analysis, could and should be the reliable external measure O'Malley describes in determining the presence of subluxation.

There have been many proposed mechanisms underlying thermal dysfunction. Grostic, in his 1988 Dentate ligament-cord distortion hypothesis, stated that the dentate ligament is strong enough to deform the cord slightly in normal flexion, however compounded abnormal movement along with upper cervical misalignment had yet to be discussed.[15]

It is feasible to suggest that if normal movement of the upper cervical spine can cause cord deformation, even the smallest misalignment can increase the amount of deformation possible in this location.

Nijs discussed central sensitization and the application of manual therapy in management and prevention of chronicity of those with fibromyalgia or chronic widespread pain. He stated that it encompassed altered sensory processing in the brain and malfunctioning of pain-inhibitory mechanisms.[16] Bell et al stated that elevated central nervous system reactivity inhibits functioning of regulatory pathways for the autonomic, endocrine, and immune system.[17]

Nijs further described activation of certain regions of the midbrain activates extremely powerful descending pain-modulating pathways that project, via the medulla, to neurons in the dorsal horn that control the ascending information in the nociceptive system.

In addition, stress and anxiety, which are symptoms noted along with fibromyalgia may be due to a deficiency of the hypothalamic-pituitary-adrenal (HPA) axis. This, according to Raison and Miller may foster pathological immune activation with release of pro-inflammatory cytokines.[18] The mechanism of thermal alterations due to sympathetic vasoconstriction was described by Hamilton in 1985. It shows that the temperature of the skin, measured by superficial perfusion, is largely under control of sympathetic vasoconstrictors.[19]

The author proposes that thermal dysfunction may be linked to a hyper-sympathetic state of being in a patient with a persistent upper cervical subluxation. Without correction, the patient would continue to show thermal dysfunction or asymmetry and be unable to adapt to changes in the environment.

Correction of the upper cervical subluxation should improve thermal dysfunction by producing thermal symmetry and removing cord deformation. This would restore the body's ability to regulate the central nervous system by creating a sense of balance, and adapt to a changing internal and external environment. Symmetry and balance in physiological function can then result in the body's ability to restore itself to normal function, resulting in the absence of disease.

Conclusion

This case demonstrated the location and correction of an upper cervical subluxation in a patient with an 11 year history of fibromyalgia, as well as other concurrent conditions. It outlined a proposed mechanism for determining the upper cervical subluxation as the cause of the fibromyalgia. It also described resolution of the fibromyalgia and most concurrent conditions and symptoms utilizing solely a specific knee chest upper cervical adjustment. More research should be conducted to support this research on fibromyalgia as well as performing research on upper cervical subluxation as the cause of other common conditions and disease presentations.

The author further requests more studies to be performed in the following traditional chiropractic model described by Leboeuf-Yde. The five basic tenets being that subluxations can exist in the human spine, the presence of subluxation may cause disease, subluxations can be detected, subluxations can be removed by spinal adjustments, and that their removal results in reversal of the disease process.[20] The author firmly believes that if more studies are conducted in this manner, that chiropractic can and will be deemed a more credible health care profession.

Acknowledgements

The author would like to thank Drs. Shawn Dill, Director of the Institute for Advanced Care in Chiropractic and Paige Van Slooten, at The Specific Chiropractic Center - Dublin, CA for their assistance in compiling all the case information for use in this study and answering any questions necessary to provide accurate information

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Figures

Figure 1. Established pattern after four cervical scans demonstrating thermal asymmetry.

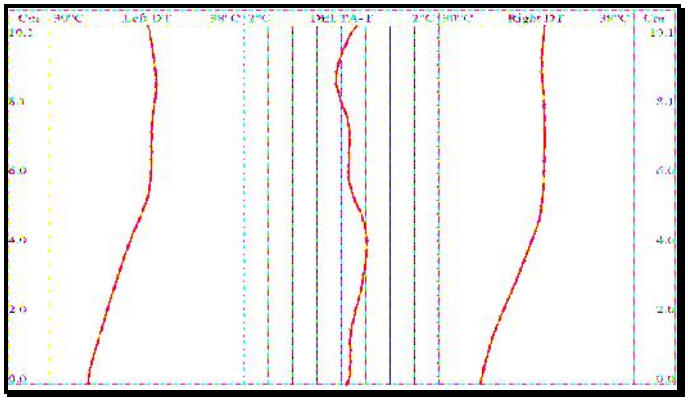

Figure 3. Thermal scan "post" first knee chest adjustment demonstrating thermal symmetry.

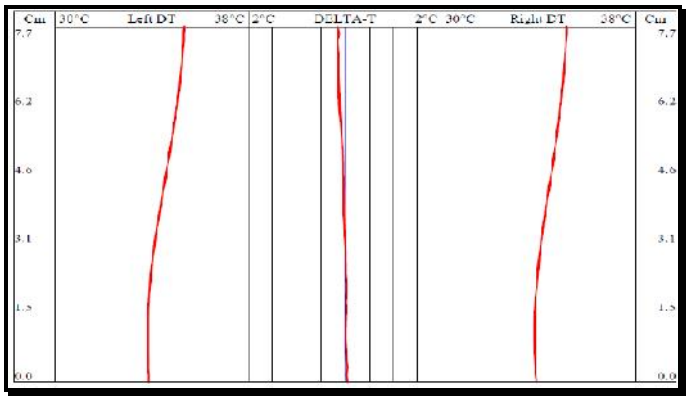

Figure 2. X-ray views taken to locate biomechanical misalignment of atlas and axis.

Neutral Lateral Cervical

A-P Open Mouth

Left Lateral Flexion A-P Open Mouth

Right Lateral Flexion A-P Open Mouth

Base Posterior