

Case Study

Remission of Fibromyalgia & Resolution of Depression in a 48-Year-Old Female Following Chiropractic Care to Reduce Vertebral Subluxation: A Case Study & Review of Literature

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Abstract

Objective: To report on the positive health outcomes and resolution of fibromyalgia and depression in a forty-eight-year-old female undergoing chiropractic care.

Clinical Features: A forty-eight-year-old female suffering from mid-back pain, shoulder pain, neck pain, and depression due to fibromyalgia sought chiropractic care as an alternative method of pain control and to improve her quality of life. Multiple drugs had failed to resolve her problems.

Intervention and Outcomes: After performing a case history, physical examination, and chiropractic examination, it was revealed the patient had subluxations at C1, and C5-T1. The patient was analyzed at each visit and adjusted using diversified chiropractic technique along with instrument adjusting. Her fibromyalgia has gone into remission and her overall quality of life has improved.

Conclusion: The findings in this case study suggest chiropractic adjustments to reduce vertebral subluxation may benefit patients who suffer from fibromyalgia.

Key words: *Chiropractic, diversified technique, fibromyalgia, subluxation, adjustment, spinal manipulation*

Introduction

Fibromyalgia has a distinct clinical presentation with no distinct characteristics beyond the presence of 11 or more tender points and chronic pain in all four quadrants of the body; it represents one extreme of a normal distribution of pain states. This condition is the most common non-articular soft tissue condition in all fields of musculoskeletal medicine.¹ It is important to note that these tender points fail to show any soft tissue inflammation or other abnormality and are differentiated from trigger points as their etiology is unknown.² The etiology and pathology overall are still unknown for fibromyalgia.

In 1990, the American College of Rheumatology (ACR) published the classification criteria for fibromyalgia. These criteria standardized classification of the syndrome, changed its definition slightly, and provided a methodology for epidemiologic investigations. The 1990 criteria of widespread pain and the presence of tenderness in at least 11 of 18 sites

(tender points) also allowed for a two-stage classification process, suitable for epidemiologic studies, in which only those with widespread pain would be required to undergo the tender point examination.

Both of the following criteria must be met to be considered a patient with fibromyalgia. 1) Chronic widespread pain in each of the four quadrants (above and below the waist, bilaterally, in the axial skeleton) that has been present for at least three months. 2) Pain evoked upon palpation of less than four kilograms of pressure in at least 11 of 18 tender points, commonly referred to as allodynia (perception of pain to a non-painful stimuli).³⁻⁵

Fibromyalgia is chronic and most of the time debilitating in nature with comorbidities of stiffness, fatigue, numbness, migraine, tension headaches, irritable bowel syndrome, temporomandibular joint (TMJ) syndrome, swollen lymphatic tissue, carpal tunnel syndrome, intolerance to cold weather,

anxiety, depression, mental fogging, sleep disorders, Raynaud syndrome, and exercise intolerance.^{1,6,7} This disease more commonly affects women with a 9:1 ratio and is present in all ethnic groups, climates, and cultures.⁶ This syndrome affects approximately 2-7% of the United States population. It is the second most common disorder that is seen by rheumatologists, behind osteoarthritis, and twice as common as rheumatoid arthritis.⁵ Chronic pain conditions are the most common reason for disability leave from work. In addition, these conditions account for the highest indirect costs for society and account for an individual's economic, social, educational, and vocational burden.⁶

Pharmacological treatments have not been very effective. Most systematic reviews and guidelines recommend 3 interventions as having the strongest evidence support. These recommendations are: (1) 2 low-dose antidepressant medications, (2) light aerobic exercise, and (3) CBT (cognitive behavioral therapy). There is moderate evidence that supports the use of massage, muscle strength training, acupuncture, and spa therapy, and limited evidence supports spinal manipulation.⁸

Fibromyalgia is a complex disorder that is thought to have more than one single cause. The Central Nervous System (CNS) and the breakdown of its normal function is thought to be the primary cause. Fibromyalgia patients are known to have increased pain sensations that tend to occur in the peripheral tissue, but the problems actually stem from the spine.^{6,9}

Case Report

History

A 48-year-old female presented with a previous diagnosis of fibromyalgia. The diagnosis was made 13 years prior to her visit to the chiropractor. Additional complaints include neck, shoulder, and upper mid-back pain. Upon further questioning she also had complaints of low back pain that occasionally radiated down both legs. She also had complaints of headaches at the back of the head and nape of the neck two times a week at least. She also had episodes of dizziness and Meniere's disease. She complained of loss of sleep by at least 50% along with painful menses for over 10 years.

The patient was on three medications before care. She was taking Flexeril three times daily for fibromyalgia for over five years. She stated that she thought it was only somewhat effective. She was also taking Catapres for hot flashes one time daily and was on the medication for over a year along with Lexapro for depression attributed to fibromyalgia for six months prior to care. She also took Aldactone for fluid retention, Singulair for allergies, and over the counter Melatonin at night to help her sleep.

Examination

The examination included a posture analysis, motion and static palpation, and x-rays. The chiropractic exam first utilized x-rays of a cervical, thoracic, lumbar, and pelvic series. The x-rays revealed a loss of cervical curve, degenerative disc disease, rotational malposition of C1 and hypo-mobility at C1 and C5-T1. The postural examination revealed a right head

tilt and rotation. The patient also had a left high shoulder and high ilium.

The patient's back pain was very severe; she could not sit in a chair longer than an hour or stand more than 30 minutes without her pain increasing. The patient could not walk without severe pain. She also could not do normal activities of daily living like washing, dressing, and lifting household objects without added pain. Changing her habits in the attempt to avoid pain only added to it. She noted that the pain was neither getting better or worse but it did alter her social life by not allowing her to go out often. Her Back Pain Index (BPI) score was a 64 and her Neck Pain Index (NPI) score was a 46 prior to care.

The physical examination revealed that she had very severe thoracic and lumbar myospasms and tender nodules throughout her entire thoracic and lumbar spine. The examination also revealed a lack of range of motion in her cervical spine. Her right lateral flexion was 10 degrees on the left and 20 degrees on the right when the normal range is 40. Her rotation to the left and to the right was 60 degrees when the normal range is 70-90.

The chiropractor also observed a leg length inequality in the prone position; the left leg was half an inch short. Analysis of leg length inequality is accepted as a convenient tool by chiropractors for assessing dysfunction within the spine. It is a commonly used criteria among chiropractors for the detection of vertebral subluxation, as the data suggests that an unequal leg length asymmetry is a different phenomenon than an anatomic leg-length inequality, rather indicating neurological interference to the suprapubic muscles.^{10,11} The use of prone leg length analysis has been shown to have good inter-examiner reliability.¹²

Intervention

Each office visit, the patient was checked for the presence of vertebral subluxations using leg length inequality, motion palpation of the spine, and x-ray measurements. When it was determined that the patient did have a subluxation, they were addressed using high velocity, low amplitude adjustments, or the "diversified" technique, or the Laney instrument depending on the segment.

The diversified technique is based on a static model of joint alignment. In this technique, the main tools used for diagnostic assessment of subluxations are static palpation, x-ray, postural analysis, and possibly the neurocalometer.¹³ If the patient had a cervical subluxation a tool called the Laney Instrument was utilized with the replacement of the doctor's hands using high-velocity, low amplitude force to correct subluxations. The Laney instrument is a handheld instant fire instrument, with a blunt stylus tip that is interchangeable, mostly used for upper cervical spine adjusting.¹⁴

In most manual techniques the actual thrust is a long lever action but with the diversified technique the adjustment is short lever. The main objective of the diversified technique is the importance of (1) the specific diagnosis of the active neurological lesion; and (2) the structural environment of the lesion within the patient. In this technique, the angle of the

thrust is more consistent with the plane lines of the specific joints, the rotational axis, and the direction of the fibers in the muscles and ligaments.¹³

The cervical spine was adjusted with the patient in a supine position. The adjustment was performed by the doctor contacting the lamina-pedicle junction (LPJ) of the involved cervical vertebrae with the Laney full spine instrument. With this instrument a force was introduced to the LPJ in the line of correction for the subluxation. This supine cervical adjustment was performed from C1 to C7, depending on the findings present at each visit. The thoracic spine subluxations that were detected from T1-T12 were adjusted using a single hand, double thenar adjustment, or a supine anterior adjustment. The lumbar subluxations at L1, L3, or L5 were adjusted using a single hand adjustment with a drop assist from the drop component on the adjusting table.

Outcomes

Her original treatment plan was 12 weeks 3 times a week. After the initial intensive care plan the patient's BPI score went from a 64 to an 18. Her NPI went from a 46 to a 32. The patient was experiencing relief even after the first adjustment. Her rotation increased on the left to 80 degrees, which is normal. Her legs also balanced upon her first re-physical. She also described her back pain as "minor" whereas before she labeled it as severe. The care plan was decreased after her first re-physical to 4 weeks of 2 times weekly and 8 weeks 1 time weekly. Her BPI went from an 18 to a 0. Her NPI went from a 32 to a 12.

After 6 months of care she experienced over 75% relief in symptoms. Her medical doctor changed her diagnosis to remission of fibromyalgia. She is still under chiropractic care once a week.

Discussion

There are a few models and theories in which the mechanism of subluxation correction can help to manage fibromyalgia symptomatology. With the removal of vertebral subluxations the interference in the transmission of mental impulse between brain and body are restored and therefore proper physiology is returned. The mechanism by which correction of subluxation aids in the reduction of these symptoms is not well understood.⁷

The proposed dysafferentation model of subluxation may be helpful in understanding the mechanisms through which subluxation correction helps to manage fibromyalgia symptomatology.¹⁵ The dysafferentation model is based on the principle that a subluxation will alter the afferent stimuli being relayed to integrating centers of the brain. Being that the cervical vertebrae are richly innervated with mechanoreceptors, alteration of position and or motion of these vertebra can lead to abnormal signaling being relayed to the cerebral cortex.¹⁵

A subluxation will cause distortion of neuronal activity in the cerebral cortex and the brain stem. This is recognized as a common theory of the etiology of fibromyalgia.^{1,5,6,8,9} With relieving mechanical pressure by correction of a subluxation

through chiropractic care, one can theoretically improve the state of well-being in fibromyalgia patients by removing neuronal irritation that is causing dysfunction of the processing pathways.

The vertebral subluxation complex is a condition of malposition of a vertebra in relation to the one above, below, or both which, occluding a foramen, impinges a nerve and interferes with the transmission of mental impulse.¹⁶ A subluxation of a vertebra places tensile stresses on the spinal cord through attachments of the dentate ligament. This ligament has 21 attachments per side which attach it to the arachnoid and dura mater. Abnormal shifts in the spinal cord may produce neurological irritation, separate from direct compression from the atlas vertebra itself.¹⁷

The purpose of this case study was to document the relationship between full spine diversified chiropractic care and the changes that occurred in a patient with fibromyalgia syndrome. The data shows a reduction of symptoms in fibromyalgia associated with diversified technique chiropractic through the correction of vertebral subluxations related to it.

The reduction in symptoms occurred over a six-month period without any other significant treatment or lifestyle changes, other than her medication previously noted. There is a variety of options for management of fibromyalgia. Because of the unknown etiology of the syndrome there are various treatments that include both non-pharmacological and pharmacological interventions. 90% of patients with fibromyalgia use at least one drug for management of the syndrome, many utilize several over the course of time, which could be years to decades. The pharmacological guidelines are set by the American Pain Society (APS). These guidelines were set in the year 2005. These guidelines stated that tricyclics, selective serotonin reuptake inhibitors, anxiolytics, and pain medication for improving sleep, reducing anxiety/depression, and decreasing pain are recommended. The APS did warn against the use of opioids, corticosteroids, nonsteroidal anti-inflammatories, benzodiazepines, and tender or trigger point injections for the treatment of fibromyalgia due to a lack of evidence of efficiency.¹ Even though these numbers are high for the use of pharmacological drugs 90% of patients prefer non-pharmacological methods to also help manage their fibromyalgia.²

Currently, there is a very limited amount of research relating to chiropractic adjustments and their role in fibromyalgia. All cases studies in the literature did show improvement. One of the cases described an adult female who ended up with posttraumatic fibromyalgia who underwent chiropractic care for 15 years. Both vehicular accidents and fibromyalgia can have similar symptoms. Her overall pain levels decreased significantly from a 10 to a 2 and over time her injuries and fibromyalgia were not debilitating.¹⁸

A 32-year-old female with fibromyalgia for two years experienced 100% improvement in four months of Upper Cervical Chiropractic care.¹⁷ Another case showed 100% improvement in a 45-year-old woman who presented with an 11-year history of fibromyalgia. The study presented within six months after the first knee chest upper cervical adjustment.

She no longer needed wheelchair assistance. During this time, it is also important to note that the patient no longer needed any medication, and the only residual complaint was right hip pain.⁷

In one case study the patient improved 40% in the first adjustment. Over all the patients' well-being drastically improved on her SF-36.¹⁶ In another case, a 64-year-old woman diagnosed with fibromyalgia sought chiropractic care. After three months of knee chest upper cervical chiropractic care, her symptoms were improved 80%, and a notable increase in energy levels was also reported.¹⁹ It is evident from the above case reports that chiropractic care may be a beneficial alternative method for reducing symptoms associated with fibromyalgia syndrome.

Conclusion

The study of fibromyalgia is a complex disorder that has an array of different complications. Although recent evidence suggests that fibromyalgia results from a central nervous system disorder rather than a dysfunction at the level of peripheral tissue, only one thing is certain; patients with fibromyalgia experience pain much differently than the general population in the absence of disease.^{5,19}

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