

# Case Study

## Management of Post Traumatic Fibromyalgia in a Female Undergoing Subluxation Based Chiropractic Care for 15 Years

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### Abstract

**Objective:** To report on the improvement of fibromyalgia related symptoms in an adult female undergoing chiropractic care to correct vertebral subluxations.

**Clinical Features:** A thirty six year old female presented for chiropractic care due to injuries sustained in a motor vehicle accident three days prior. Objective indicators of vertebral subluxation were identified upon physical examination and radiographs.

**Interventions and Outcomes:** The patient was seen over a 12 week period with varying frequency. She responded well to care; therefore she was placed on a long term maintenance plan. The care plan consisted of a combination of chiropractic adjustments (CMT) and physical therapy.

**Conclusion:** The case of an adult female with fibromyalgia related symptoms is presented following a motor vehicle accident. Dramatic improvement in symptoms related to fibromyalgia is noted following the introduction of chiropractic care concomitant with a reduction in vertebral subluxation. More research on the benefits of chiropractic in those with fibromyalgia is warranted.

**Key Words:** *Fibromyalgia, chiropractic, adjustments, manipulation, vertebral subluxation*

### Introduction

Fibromyalgia is a chronic condition characterized by widespread pain in muscles, tendons, and ligaments of susceptible individuals. The patient may also experience a litany of other associated health conditions, such as, chronic fatigue and/or migraine headaches, to name a few. Fibromyalgia occurs in about 1 to 2 % of the population in

the United States<sup>1,2</sup> and women are more likely to develop the disorder than men.<sup>1,2</sup> Fibromyalgia symptoms have been observed to begin after a physical or emotional trauma, but in many cases there appears to be no triggering event.<sup>3</sup> The diagnostic criteria and developing contributions to the scientific literature has increased considerably within a relatively short period of time.<sup>4-6</sup> The latent interest, in the author's opinion, is probably due to the associated disability and the enormous economic

affect the condition has on business and industry.

Fibromyalgia was once ignored by a large segment of the traditional health care system and was generally dismissed and assumed to be the result of female hormonal imbalances or hysteria.<sup>7-9</sup> The prevailing attitudes in health care at that time made it difficult to provide care and to manage this condition.<sup>7</sup> In 1990, the American College of Rheumatology set up criteria defining fibromyalgia as widespread pain of more than three months duration in combination with tenderness at 11 or more of 18 specific sites.<sup>5</sup> Widespread pain is defined as pain on the left and right side of the body; as well as, pain above and below the waist.<sup>5</sup>

The purpose of this case report is to discuss successful chiropractic care in a female with fibromyalgia related symptoms developing after a motor vehicle accident.

## Case Report

### *Clinical Features*

A 36 year old, African American female presented for chiropractic care following a severe soft tissue injury to her neck, upper back, mid back and lower back. She was the driver of an automobile that pulled out into traffic from a shopping center. She was struck on the driver's side door by an on-coming vehicle, reported to be traveling 40 to 50 miles per hour. The patient was transported by ambulance to a local hospital emergency room (ER) where x-rays and treatment for her injuries were provided.

Radiography ruled out fractures, dislocations, and pathologies. The patient was prescribed 800 mg of Ibuprofen, a cervical collar, lumbar support, and was released from the hospital after a 7 hour observation period. Upon release, the ER doctor advised the patient to use ice on the sore areas for two days and to follow-up with a private physician if the symptoms persisted.

The patient presented to a chiropractic office for examination and care of her injuries three days following the accident. She was ambulatory but in severe pain. Her cervical range of motion (ROM) was minimal and lifting, bending and twisting of her neck and back increased the severity of the pain. The pain was most severe at night which prevented her from getting adequate sleep.

Past history included childhood rheumatic fever secondary to a streptococcal infection (strep throat) at the age of 5. The symptoms included fever, sore throat, muscle pain, joint pain, nausea, fatigue and headaches. Penicillin was administered as a prophylactic.

She had suffered with constant widespread pain most of her childhood and all of her adult life. The patient described the pain intensity level, during that time, as 2 on a pain intensity scale of 0 to 10, 10 being the most severe level. The patient indicated that the true pain level was probably higher but she had become accustomed to the

pain. At age 20, she was diagnosed with mitral valve prolapsed. She denied any history of corrective surgery.

Her immediate family history was unremarkable, except for her mother who has a history of rheumatoid arthritis, chronic fatigue, migraine headaches and depression.

### *Examination*

The physical examination included orthopedic, neurological, and chiropractic evaluations; all of which were performed on the initial visit. Physical examination findings were as follows: Decreased lumbar range of motion with pain and decreased cervical ROM with <5 degrees of flexion; extension; right and left lateral flexion and left rotation. Right cervical rotation was 15 degrees with pain. Positive orthopedic findings are as follows: Valsalva's; Jackson compression on left; maximum cervical compression on the left; shoulder depression on the right; bilateral straight leg raise < 10 degrees; Lasegue's and Braggard's on the left side. Spinal alignment was assessed using static and motion palpation, leg length inequalities, and radiographs. Fixations and misalignments were detected in all spinal regions, most noticeable between C1/C2; C5/C6, T3/T4 and L4/L5. A functional 2 inch left short leg was also apparent. The diagnosis given was cervical, thoracic, and lumbar subluxations and sprain/strain resulting from motor vehicular trauma (MVT).

### *Intervention & Outcomes*

The care plan consisted of a combination of chiropractic adjustments and physical therapy for 5 consecutive days for the first two weeks. The first two visits consisted of application of cold packs and stretching of tight muscles between adjacent spinal segments (intersegmental traction) to reduce swelling, decrease pain and restore ROM. High voltage galvanic (HVG) stimulation was added on the third visit. On the fourth visit, cold therapy was discontinued and replaced with heat (hydrocolator packs) to reduce pain, decrease muscle spasms, and improve local blood flow.

Adjustments were initiated during the third week of care. The patient continued to experience severe pain and was apprehensive so a low force technique (Activator) was used. As the pain intensity decreased manual spinal adjustive techniques were applied. The patient responded well to spinal adjustments, so therapy and alignment were continued as needed. The aim was to restore proper vertebral alignment and motion, reduce swelling, and muscle spasms. In addition, ischemic compression was applied to decrease pain associated with local muscle trigger points.

The patient was reevaluated every 10<sup>th</sup> visit to determine if additional care was necessary. As symptoms improved, the number of visits per week was decreased. After the first two weeks the frequency was decreased to 3 times per week. This schedule was continued for 6 weeks, at which time the patient's symptoms had improved. In an

effort to continue restoration of ROM, reduce pain, and improve mobility, an additional four weeks of care was recommended. The frequency was reduced to two times per week.

Overall, during a 12 week period, she reported improvements in gait. She also reported cervical and lumbar ROM returning to normal limits. Her pain and discomfort were minimal. (Fig 1) She was released from care and returned in distress five weeks later. Many of the symptoms were the same or similar to the initial complaints, with the exception of stiffness and decreased ROM. She received care for two weeks, during which time she had some relief but the pain persisted.

The patient was referred to an orthopedic physician for a follow-up evaluation. The orthopedist recommended six weeks of rest, physical therapy, and anti-inflammatory medications. After completing the physical therapy she remained in severe pain, so she was examined and treated by a family physician. After three months of medical treatment, the patient returned for chiropractic care with the same complaints and some new symptoms not previously recorded.

The new symptoms consisted of depression, disturbances in moods, lack of concentration, sleep disturbance, severe migraine headaches, and chronic fatigue. It was recommended that she be evaluated by a rheumatologist to rule out other conditions with similar symptoms. The rheumatologist performed a variety of laboratory and physical tests, which all deemed negative results. Post traumatic fibromyalgia was the final diagnosis made by the rheumatologist.

The patient returned for chiropractic care and was placed on a long term maintenance care program. The maintenance plan consisted of a frequency of 3 times per week and reassessments twice per month. The patient was given a self report form and asked to report the pain level at each reassessment. In addition, the patient was asked to record the number of migraine headaches she experienced during that time period and to also report an overall fatigue level. It was based on a scale between 0 to 10 with 0 being no fatigue and 10 being the most extreme fatigued level. The number of migraine headaches and fatigue levels were averaged for each month.

The frequency of office visits was decreased as the patient felt better. Table 1 shows the three major symptoms experienced by this patient and the average values obtained for each year of care. Body pain and migraine headaches followed a similar course throughout the years of chiropractic care. (Fig 2) After being under chiropractic care for 13 years, the patient's pain level dropped to pre-traumatic range. This continued to decrease through the 14<sup>th</sup> year, at which time she was 50 years old.

#### *Data Analysis*

Analysis of grouped symptoms was completed with the Student's T-test in Excel (Microsoft Corp., Redmond WA).

In addition, correlations are completed using Pearson's product moment coefficient test also performed in Excel, to assess linear association between the groups.

The data obtained in the study are normally distributed as indicated by the skew which equals less or more than (+2/-2). The t-test between body pain and migraine headaches show no significant difference ( $t = 0.21$ ) whereas, there are significant differences observed between body pain and chronic fatigue ( $t = 0.002$ ) and migraine headaches and chronic fatigue ( $t = 0.00$ ). The Pearson's product moment coefficient was completed to assess linearity between the symptoms. A strong positive correlation was seen between body pain and migraine headaches ( $r = 0.81$   $p = 0.0004$ ). Also, weakly positive correlations were seen between body pain and chronic fatigue ( $r = 0.13$   $p = 0.68$ ) and migraine headaches and chronic fatigue ( $r = 0.16$   $p = 0.58$ ).

The most debilitating symptom in this case was chronic fatigue. As noted, it changed after 3 to 4 years but the average level remained near 6; which was the initial level at the start of maintenance. (Fig 2) It is not clear if the chronic fatigue is part of this syndrome or if it is a separate and distinct condition.

#### **Discussion**

Fibromyalgia (also called fibrositis or fibromyositis) is a syndrome that causes widespread chronic debilitating nonspecific muscle and joint pain.<sup>8</sup> Fibromyalgia symptoms may occur or become more intense following a traumatic event such as a motor vehicle accident (MVA).<sup>8</sup> Today doctors of chiropractic see a relatively large number of patients that are injured in MVA's, as well as, other types of traumatic occurrences,<sup>3</sup> so it is important to investigate conditions that may lead to or trigger fibromyalgia symptoms. In addition, if fibromyalgia is suspected prior to trauma, a complete history and differential diagnosis should be initiated, which may have some medico-legal implications.<sup>3</sup>

In the present case, for nine months following the automobile accident the patient was totally unable to perform her occupation and incurred difficulty with functions of daily living. Gradually, near the end of the first year, when pain levels and associated symptoms were near 6 on the pain and discomfort scale, she was able to resume some of her normal activity. (Fig 2)

Decreased pain and stiffness in response to the adjustments, during the acute period, were probably due to reduced inflammation to soft tissues (i.e.; joints, ligaments and muscle) damaged during the traumatic event. The healing process usually takes 8 to 15 weeks due to inadequate blood supply to spinal ligaments and tendons. On-the-other-hand, muscle which has a good blood supply, usually heals relatively quickly, substantiated by decreased tension and spasms, as well as, maintenance of an improved ROM observed when the patient returned to our care after relapse.

The reemergence of the pain was probably due to her fibromyalgia which is believed to be due to general reduction of pain thresholds.<sup>7</sup> The pain experienced by this patient in the chronic phase of care was described by the patient as being different from the acute phase. Pain from trauma according to the patient was localized to joints and muscles and affected a specific point of injury. This type of pain would come and go and was related to the type and amount of physical activity she performed.

Fibromyalgia was described as constant, unrelenting; non-stop pain that affected all aspects of the patient's life, at all time. The patient remained under chiropractic care because the pain intensity was lowered to levels that allowed her to continue to maintain employment and perform other physical demands of daily living. There are other symptoms that are associated with the patient's fibromyalgia (i.e., coldness of extremities, sleep disturbance, depression, and mental insufficiency)<sup>8,9</sup> which were not predictable so have not been included in this assessment. The diagnosis of post traumatic fibromyalgia is not a problem if fibromyalgia pain symptoms develop rapidly, has a clear clinical picture, and involves other medical specialists.<sup>3</sup>

## Conclusion

When vehicular trauma is associated with fibromyalgia an evaluation can be complicated because of the similarity of symptoms between the two conditions. When a thorough history and physical examination are performed, the chiropractor is in a better position to determine whether the patient potentially has fibromyalgia, myofascial pain syndrome, or a combination of both. An important criterion for differential diagnosis is the presence of tender spots associated with widespread nonspecific soft tissue pain, usually accompanied by other morbid symptoms in fibromyalgia vs. regional characteristic referred pain, with discrete muscular trigger points and taut bands of skeletal muscle, seen in myofascial pain syndrome. They are two different clinical conditions that may be confused or exaggerated in the medico-legal domain.<sup>3</sup>

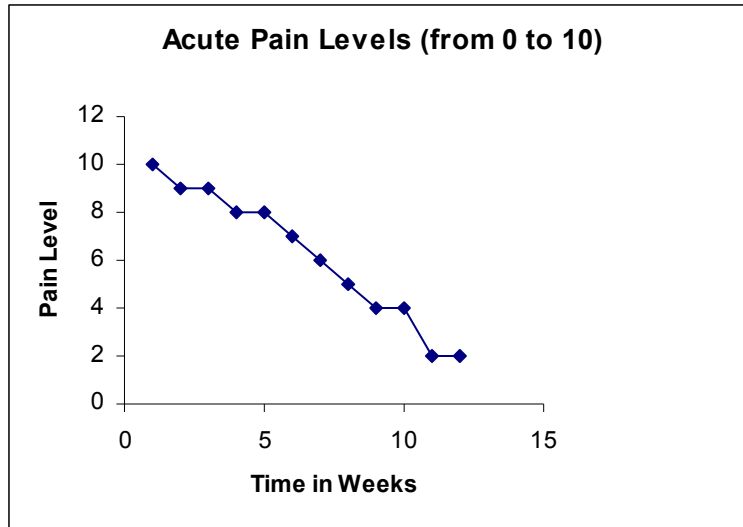
Clinical observations in this case span a period of 15 years and are presented to emphasize the importance of patience when treating patients with problems that develop into chronic health conditions. Chiropractic may be thought of as the most effective method of treatment for reducing pain and some other symptoms in this case but more research is needed to substantiate this claim.

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**Figure 1-- Acute Pain Levels** – This graph displays the pain levels during the acute period following an automobile collision of a patient diagnosed with fibromyalgia. This phase of care was over a 12 week period.



**Table 1** -- This table reports the three major symptoms experienced by the patient and the average values obtained for each year of chiropractic care. Yearly averages are composites of the monthly data. Statistical values for the T-test and Pearson's product moment coefficient is shown.

Year	Pain Level	Number of migraine	Chronic Fatigue
1994	5	7	6
1995	5	8	7
1996	5	6	6
1997	4	5	5
1998	3	4	6
1999	4	3	7
2000	3	2	8
2001	3	2	7
2002	3	3	6
2003	4	4	5
2004	3	3	6
2005	3	2	7
2006	2	3	6
2007	1	2	5
Average	3.43	3.86	6.21
Skew	-0.32	1.02	0.28
F-test	0.07	0.36	0.01
T-test	0.21	0.00	0.002
SD	1.16	1.96	0.89
Pearson's	0.81	0.12	-0.16

**Figure 2 - Patient Self Report of Symptoms** -- The graph displays the average frequency of major symptoms during each year of chiropractic maintenance care. The patient was under care for a total of 15 years.

### Patient Self Report of Symptoms

