

Opioid Use Reduction in Failed Back Surgery Syndrome Patients at Three Months Utilizing Manual Spinal Decompression Manipulation

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ABSTRACT

Objective: Continued spinal pain and disability following spine surgery frequently results in continued or increased use of opioid pain medication. This study proposes to analyze the usage of opioids in patients with continued or recurring pain after spinal surgery treated with Cox Flexion Distraction Decompression Manipulation.

Design: Analysis of data collected during a multi-center prospective cohort study of Failed Back Surgery Syndrome patients seeking care from field Doctors of Chiropractic certified in Cox Flexion Distraction Decompression Manipulation. This study included patients who had undergone spinal surgery and chose to be treated with chiropractic care for symptoms in the same regions where surgery was performed.

Methods: This multi-center prospective cohort study of 59 Failed Back Surgery Syndrome patients treated by 21 chiropractors was designed to document clinical outcomes of manual spinal decompression manipulation interventions. Eleven of the 59 patients indicated they used opioids for their spinal pain and met the inclusion criteria for this study. Results of spinal pain and opioid use questionnaires administered at initial visits and following 3 months of care were collected and analyzed.

This study was approved by the Institutional Review Board (IRB000OC18MG72) of Keiser University.

Results: Eight of the 11 patients reported a reduction or discontinuation of opioid use for pain control related to the region of surgery; no change in opioid use was reported by 3 patients.

Conclusion: The results of this prospective study revealed a patient-reported reduction or discontinuation of opioid use during their initial three-month course of care.

Keywords: Chiropractic, Manipulation, Failed Back Surgery Syndrome, Post-Surgical Continued Pain, Opioids, Decompression

Trial Registration: ClinicalTrials.gov Identifier: CT05401682

INTRODUCTION

Spinal pain impacts millions of individuals and low back pain (LBP) is the leading cause of years lived with disability globally.¹ There are a variety of conservative and evidence-based treatments and prevention strategies recommended for managing spinal pain including education, exercise, thermotherapy, and manual therapies.² In some cases pharmaceutical interventions including non-steroidal anti-inflammatory drugs and opioids are recommended.³ Utilization of spinal surgical procedures, especially lumbar, have also been trending upwards in recent years.⁴⁻⁶ It is prudent to note that surgical interventions to the spine come with risks, including infection, vascular complications, and death.^{7,8}

One specific complication from spinal surgery is Failed Back Surgery Syndrome (FBSS), also known as post-surgical spine syndrome or persistent spinal pain syndrome.^{9,10} FBSS is defined by the International Association for the Study of Pain as “spinal pain (lumbar or cervical) of unknown origin either persisting despite surgical intervention or appearing after surgical intervention for spinal pain originally in the same topographical location.”¹¹ FBSS pain may begin following the surgical intervention. Surgery may have also exacerbated the pain or it was insufficient in alleviating the original pain.¹² Previous reports state FBSS impacts between 10%-50% of the population undergoing spinal surgery.¹³⁻¹⁵ Incidences of FBSS appears to have a wide range due to various pre-operative, operative, and post-operative factors.¹⁶ The type of surgical intervention also plays a role in FBSS as some interventions, such as microdiscectomy appear to have a lower incidence.¹⁷ FBSS may require additional surgical interventions or revisions, which increases medical costs and risks to the patient.¹⁸

Following surgical interventions a variety of medication may be prescribed including opioids and/or gabapentinoids.¹⁹ More than 1 in 3 patients with chronic and persistent spinal pain continue to use opioids following a spinal fusion.^{20,21} Previous studies have found that undergoing a spinal surgery revision was a predictor for continued opioid use.²²⁻²⁴ Other studies have demonstrated that 77% of patients who were pre-operatively on opioids continued their utilization following lumbar surgery and nearly 40% of individuals who underwent an anterior cervical discectomy and fusion filled an opioid prescription post-

operatively.^{25,26} These types of findings should alert providers and patients of the need for alternative options to achieve pain management post-operatively. Chiropractic interventions and spinal manipulation have demonstrated beneficial outcomes for patients with spinal pain following spinal surgery.^{26,27} Additionally, patients with spinal pain who saw a chiropractor had half the incidence of filling an opioid prescription.^{28,29} Cox Technic Flexion Distraction Decompression (CTFDD) is a form of spinal manipulation that has been shown to benefit post-surgical spine pain cases.^{30,31} The purpose of this brief descriptive analysis of an observational study is to explore the usage of opioids in patients with continued or recurring pain after spinal surgery treated with CTFDD.

METHODS

Opioid use histories were obtained during the initial visit and at the 3-month follow up utilizing a questionnaire administered by the doctor. The form asked patients during the initial visit if they were currently taking any of the following opioid pain killers (yes/no):

Vicodin, Lortab, Norco, Hydrocodone, Codeine, Tylenol #3 or #4, Fentanyl, Duragesic, MS Contin, Percocet, Tylox, OxyContin, Oxycodone, Methadone Tramadol, Ultram, Dilaudid.

At the three-month visit, the patients were asked via a survey form: “Was the use of opioid painkillers diminished or stopped during the duration of chiropractic care?” with “yes” and “no” options available.

RESULTS

Fifty-nine patients from 21 chiropractic clinics recruited between February 1, 2019 and July 31, 2019, who met the inclusion criteria were included in the overall study. Of those, 11 patients reported using opioids to control their pain and are included in this report.

Demographic characteristics of the patients (n=11) in this study are 8 females and 3 males, mean age and standard deviation (SD) of 65.73 (14.6) years old. The mean (SD) height is 168.4 cm (7.5) and mean (SD) weight is 87.5 (22.26) kg.

The patients received a mean (SD) of 15.2 (8.29) treatments during 67.4 (47) days. Questionnaires documented at three months of care a reduction in opioid use in 8 patients, an increase in opioid use in 0 patients, and no change in opioid use in 3 patients.

DISCUSSION

The described findings are consistent with prior reports noting reduced or no increase in opioid use following application of chiropractic care.^{28,29,32} This brief descriptive analysis revealed no increase in opioid use and denoted a reduction or discontinuation of opioid medication in 8 subjects with FBSS receiving chiropractic care over a 3-month period. Although this cohort is a small population, findings are still of interest clinically for individuals that desire to use non-pharmacological approaches to manage spinal pain. Patients with FBSS require a nuanced approach to pain management which may include individual rehabilitation plans, interventions, and a combination of providers in a team, and

vary from person to person. These individuals may have undergone extensive surgical interventions and there may be numerous reasons why their surgery did not lead to a favorable outcome. FBSS patients require a systematic evaluation of common FBSS etiologies, including new-onset stenosis, recurrent disc herniations, epidural fibrosis, and pseudarthrosis.³³ In some cases additional imaging may be utilized to differentiate etiologies such as residual disc herniation versus epidural scar tissue.³⁴ For individuals with FBSS, these diagnoses may be the determining factor that drives the next step of spinal pain management. Once an etiology is determined, a multidisciplinary approach to treatment is most effective.³⁵ A prior retrospective study demonstrated that an intensive, interdisciplinary pain rehabilitation program consisting of cognitive-behavioral therapy and physical reconditioning provided an “effective therapeutic modality for patients with post-laminectomy syndrome who have failed spinal cord stimulation by decreasing pain levels and by increasing functional status and self-efficacy.”³⁴ A multidisciplinary team consisting of psychology, primary care, and manual therapy is also beneficial in management for these cases.^{9,36}

Given that prior chiropractic studies have reported benefit in FBSS cases, it would be prudent to include chiropractic services into these multidisciplinary teams.^{26,27,35} Further investigation into specific chiropractic services, such as flexion distraction versus high velocity manipulation would be of value to better understand spinal pain management in FBSS cases. Larger cohort studies and randomized controlled trials would further evaluate the efficacy of chiropractic care for managing FBSS patients. Previous studies have demonstrated reduced opioid use risk in patients who sought chiropractic interventions.^{31,32} It is the opinion of the authors that investigation into opioid use for individuals with FBSS and the role chiropractic interventions serve to reduce utilization would be a valuable addition to the existing literature. The authors believe that our study provides some promising findings regarding opioid use reduction and chiropractic interventions, specifically with that of CTFDD. A large population study exploring individuals with FBSS, current opioid use, and chiropractic interventions would be valuable for a better understanding of the relationship and the role spinal manipulation may have. Investigation into different approaches of spinal manipulation, such as thrust versus non-thrust, would also be of interest for individuals with FBSS and potential opioid use reduction and add to gaps in current literature that address this particular patient population.

CONCLUSION

Of the 11 patients reporting the use of opioids for FBSS at the onset of care, 8 reported a reduction or discontinuation of opioid use at 3 months of care. The results of this brief descriptive analysis show promise for the potential reduction of opioid use in Failed Back Surgery Syndrome patients, and the need for larger studies.

LIMITATIONS

The authors understand the limitations of this review to include the small cohort, lack of information regarding the type of surgery, length of time before presenting for chiropractic care after surgery, duration and dosage of opioid use, and lack of a control group.

COMPETING INTERESTS

The authors declare they have no competing interests.

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