

CASE STUDY

Resolution of Back Pain & Sleep Disturbance in a Pregnant Patient Following Chiropractic Care Using Webster Technique: A Case Report & Review of Literature

Melissa Porter, DC¹ & Joel Alcantara, DC²

Abstract

Objective: To discuss the chiropractic care of a pregnant patient with low back pain.

Clinical Presentation: A 24-year-old presenting in her 10th week of gestation complaining of low back discomfort that began with her pregnancy along with longstanding upper back pain. The patient's low back pain began 8 weeks prior, correlating to the beginning of her pregnancy. She has had upper back pain and tightness for about two years. Both complaints were indicated as provoked with prolonged standing or sitting, especially with bad posture. Palliative maneuvers were indicated as laying down, resting, and the use of a cold pack.

Treatment and Outcome: The patient was cared for with the Webster Technique and Thompson Technique. Initial care was set at 2 times a week for 3-4 weeks and once a week throughout her pregnancy. In total, the patient attended 16 visits over a 3-month period. As a result of chiropractic care, the patient was able to work without pain with the patient electing to continue her care throughout her pregnancy.

Conclusions: This case report provides supporting evidence on the effectiveness of chiropractic care in pregnant women with disordered sleep as a secondary presenting complaint. We encourage further documentation of similar cases to inform clinical practice.

Keywords: *Chiropractic, vertebral subluxation, adjustment, pregnancy, low back pain, sleep disturbance, Thompson technique, Webster technique*

Introduction

Of the practitioner-based CAM therapies, chiropractic is popular for children and adults.¹ Usage of CAM was most often to treat a variety of musculoskeletal problems such as back pain or problems, neck pain or problems, joint pain or stiffness or other joint condition, arthritis, and other musculoskeletal conditions.

In a study of 10,002 women of childbearing age (i.e., aged 18-49 years) representing 67.2 million women in the United

States, an estimated 38% (approximately 25 million women) were CAM users, regardless of pregnancy status. Twenty-five percent of the pregnant/recently pregnant CAM users were treating a musculoskeletal problem with CAM (compared to 28% of non-pregnant women), particularly for back pain.² Given these circumstances, it stands to reason that chiropractic would be popular during pregnancy.

In addition to massage and acupuncture, chiropractic was the

1. Private Practice of Chiropractic, Louisville, KY
2. Research Director, International Chiropractic Pediatric Association, Media, PA

most common CAM therapy recommended for LBP in pregnancy by the providers of prenatal health care (i.e., nurse educators, nurse midwives, and obstetricians).³

In the interest of evidence-informed practice, we describe the chiropractic care of a pregnant patient presenting with low back and upper back pain.

Case Report

History

This patient was 24-years-old presenting for consultation and possible care in her 10th week of gestation. The patient's chief complaint was low back discomfort that began with her pregnancy and along with longstanding upper back pain and tightness that bothered her while sitting at work. The patient indicated that her low back pain began 8 weeks prior, correlating to the beginning of her pregnancy.

She has had upper back pain and tightness for about 2 years. Both complaints were indicated as provoked with prolonged standing or sitting, especially with bad posture. Palliative maneuvers were indicated as laying down, resting, and the use of a cold pack. According to the patient, she has had difficulty working at a desk for long hours due to pain and discomfort. In addition, she admitted that she had issue with sleeping because it was difficult to get comfortable.

The pain and discomfort was located near her bra line and in the lower part of her back on both sides of the spine. The severity of her pain complaint was ranged from a 4/10-7/10 (0=no pain; 10=maximum pain). In terms of timing, her pain complaints improved in the evening while relaxing and worsened while working. The patient admitted that her pain complaints were getting slowly worse as her pregnancy progressed with greater difficulty with sleeping.

Past history revealed that the patient attended regular yearly check-ups with her primary care physician, but nothing specific for her presenting complaints. The patient had not been to alternative care practitioners and has never seen a chiropractor prior to the scenario described. In terms of self-care, ice packs have been used but no medications or other interventions were indicated.

Examination

On physical examination, the patient had bilateral rounded shoulders and an anterior head carriage. Her left shoulder and right pelvis were elevated compared to the contralateral side. She also had a mild lateral deviations of her spine, indicative of minor scoliosis. A minor right lateral deviation in her cervical spine was also evident as was a minor left lateral deviation in her lumbar spine, associated with a relatively straight thoracic spine. Digital palpation of her paraspinal muscles revealed moderate hypertonicity at the cervical and upper thoracic paraspinal muscles.

Moderate to severe hypertonicity was notable at the left and right lumbar spine and at the left and right sacroiliac (SI) region. Active trigger points were found at the left lumbar, left sacroiliac and left pelvic regions. Restricted motion was

noted at the lower and mid-back regions, mostly concentrated at the L₁-L₄ and T₄-T₉ vertebral bodies.

The examination revealed a decrease of normal ROM on lumbar flexion, lumbar extension, right lateral lumbar flexion and left lateral lumbar flexion. All other ROMs were unremarkable. The following lumbar orthopedic tests were performed: Kemp's, Bechterew's, Tripod, Valsalva, Hibb's, Nachlas', Ely's, Yeoman's, Faber, Passive Straight Leg Raise, Milgram's, and SI Stress Test. Bechterew's was positive bilaterally for tightness in the bilateral low back. Tripod was positive bilaterally for the same tightness as above. Yeoman's Test was positive bilaterally. Faber was positive on the left for pain in the left low back and lateral hip. The SI stress test was positive on the left. Milgram's was positive on the left for tightness in the left low back.

The following cervical orthopedic tests were performed also performed: Jackson compression, shoulder depression, axial compression, cervical spine distraction, and maximal foraminal compression. All of the above cervical tests were unremarkable. Dermatome, myotome, and deep tendon reflex testing was not performed on the patient.

She was diagnosed with vertebral subluxations in the cervical, thoracic, lumbar spine and pelvis.

Intervention & Outcomes

The patient was assessed using the Webster Technique⁴ and presented as a right Webster. The patient was adjusted with the Webster Technique and Diversified. Pregnancy pillows were used for the patient's comfort and fetal safety. Initial care was set at 2 times a week for 3-4 weeks and once a week throughout her pregnancy.

In addition to the Webster Technique, the lumbar spine was adjusted prone with Thompson drop. The thoracic spine was adjusted prone with Diversified Technique. The cervical spine was adjusted with the patient in the supine position with Diversified Technique.

In total, the patient attended 16 visits over a 3-month period. As a result of chiropractic care, the patient started sleeping through the night and getting a restful night's sleep after her 2nd visit. After 4 visits, the patient indicated as having more energy through the day. After the first 3-4 weeks of care, the patient was able to work without pain from sitting so much and noticed that she had better posture. We are maintaining her progress through her pregnancy at this point. This patient elected to continue her care throughout her pregnancy.

Discussion

The 4-week prevalence of LBP, LP, and PGP was 71.3%, 46.2%, and 64.7%, respectively. History of LBP, related or not to previous pregnancy or postpartum, LBP surgery, and anxiety were the factors more strongly associated with pregnancy-related LBP.⁵ Most of the literature reporting prevalence and describing the epidemiological characteristics of pregnancy-related musculoskeletal pain (i.e., pelvic girdle pain or PPGP) has been conducted in Europe. These studies have reported prevalence rates ranging from as low as 7% to

as high as 84%.⁶ Long-term follow up of pelvic girdle pain indicate these pregnant women are at risk of long term pain.⁷

Despite conclusions that limited evidence support the use of general CAM for managing pregnancy-related low back and/or pelvic pain⁸⁻⁹, evidence-informed practice supports the use of chiropractic for pregnant women suffering from pregnancy-related musculoskeletal complaints in terms of its effectiveness based on the published evidence.¹⁰ In addition to case reports, there are clinical trials and cohort studies supporting the effectiveness of chiropractic in this patient population¹¹⁻¹⁵ and the needs and wants of the pregnant patient¹⁶⁻¹⁸ and the clinical expertise of chiropractors in the care of pregnant patients.¹⁹ It is estimated that 76% of chiropractors practicing in the United States provide spinal adjustments to pregnant women

Chiropractic Pregnancy Care

The care of the pregnant woman has a long tradition in the chiropractic profession²⁰ In fact, the State of Oregon allows for chiropractic specialty certification in obstetrics.²¹ Of interest in the case reported is the use of the Webster Technique to address pelvic bowl subluxation concomitant with low back pain during pregnancy without fetal malposition/malpresentation.

A review of the published literature on the use of the Webster Technique from 2008-2017 found a number of case reports describing the chiropractic care of pregnant women presenting with musculoskeletal complaints concomitant with a fetal malposition/malpresentation. We found 9 case reports describing the use of the Webster Technique during pregnancy without a fetal malposition/malpresentation.

Sims and Lee²² described the 23-year-old pregnant patient with LBP and paresthesia of the lower extremities. Initial care plan was 3X/week for the first 2 weeks, twice weekly for one week and then one visit per week for an additional 6 weeks using Diversified Technique. After 2 weeks of care, the technique was changed to the Webster Technique. At 3 ½ months of care, the patient reported experiencing menstruation since she had a history of amenorrhea. After 4 months of care, the patient's LBP resolved and the episodes of numbness originally in both feet, legs, and sacroiliac joints had diminished. After 4 ½ months of care, the patient reported that she had 3 positive over-the-counter pregnancy tests and was going for a urine analysis and ultrasound for confirmation.

Alcantara et al.²³ described the care of 29-year-old pregnant patient with LBP. The patient presented for care in her 34th week of gestation. Her two previous pregnancies were delivered via Caesarean. Chiropractic care utilized the Webster Technique for 4 patient visits. On her 40th week of pregnancy, the patient went into spontaneous labor and delivered naturally (i.e., vaginal birth after Caesarean). Alcantara et al.²⁴ described the care of a 26-yr-old nulliparous female attended to during a home birth delivery with 3 midwives and her chiropractor.

With lack of cervical dilation, descent and diminished uterine contractions along with decreased fetal heart tones at 23 hours

of labor, the Webster Technique was decided upon. The result of using Webster Technique was stronger and more frequent contractions with stabilized fetal heart tones. At 28 hours, the fetus was determined to be asynclitic. The midwives attempted various patient positioning and more homeopathic remedies, performing a surgical rupture of the patient's membranes with recommendation of further chiropractic care.

At 34 hours of labor, the attending chiropractor performed the psoas release and 1/2 hour later, the patient was at complete cervical dilation. The labor progressed rapidly thereafter and a healthy baby girl was born. Siddle et al.²⁵ described the care of a 37-year-old in her 25 weeks gestation with Left sided sciatica of three months duration. At twice a week for two weeks and then weekly for the remainder of her pregnancy.

Chiropractic care consisted of specific chiropractic adjustments to L5/S1, T4/5, C1/2 and sacrum. Myofascial release of the psoas, respiratory diaphragm and piriformis muscles was performed, as well as SOT Category II blocking of the sacroiliac joints. Webster's in-utero constraint technique and the Bagnell Technique were utilized: these involved release of the round ligament and traction releases of the pubic symphysis along with Ice therapy. The patient reported immediate relief after the first treatment. The SIJ strain was resolved after 4 treatments but was aggravated at 30/40 after rotating on the left hip. This also aggravated the pubic symphysis. The patient's symptoms were alleviated and maintained until delivery. She reported a spontaneous labor at 40 weeks lasting 6 hours with no pain relief medication.

Edwards and Alcantara²⁶ described the care of a 28-year-old woman presented for chiropractic care at 14 weeks gestation. She suffered from migraine headaches, hypothyroidism and tachycardia. The patient had a history of prior Caesarean. She sought chiropractic care to improve her chances of a trial of labor and vaginal delivery for her current pregnancy. During care, the patient experienced visual field disturbances and neurological deficits in the face and upper extremities. The patient attended 33 visits of 7 months duration utilizing Diversified Technique and Webster Technique. Throughout the course of treatment, the patient's most common complaints were mild headaches and sacral pain. The patient was able to successfully attempt a trial of labor at 40 weeks plus 4 days and delivered a baby girl.

Edwards and Alcantara²⁷ described a 24-year-old in her 24th week of gestation. The patient presented with severe neck pain extending to both shoulders, migraine headaches, diplopia, and tingling in the right hand which had been constant for a week. The patient received care consisting of Diversified Technique and Webster Technique. During her care the patient indicated a medical diagnosis of swelling of the optic nerve (i.e., papilledema) induced by a pseudotumor of the cerebrum. Spinal fluid (20cm³) was drained from her and prescribed a diuretic to reduce the swelling. The patient completed a total of 14 visits in 5 weeks, and was scheduled for a Caesarean-section delivery at 37 weeks. However, three days after her final chiropractic visit, the patient's water broke and she successfully delivered a 3 lb 3 oz baby vaginally at 30 weeks gestation.

Edwards and Alcantara²⁸ described the care of a 28-year-old at

21 weeks gestation. The patient presented with shoulder and neck pain secondary to scoliosis and pregnancy-related musculoskeletal complaints. The patient's pain complaint was constant and rated at 6/10. The patient's surgical history 7 years prior included insertion of rods from approximately T2 to L3 vertebral bodies, with the last freely movable vertebra at T2 and L5 vertebral bodies. Subluxations were detected in the upper cervical and sacral regions and the T5 rib head. The patient received care using a combination of Gonstead, Diversified and Webster Techniques utilizing a Drop Table.

Each visit resulted in a reduction of her pain rating by 2 points from baseline rating. After completing 13 visits over 6 weeks of care, her pain level rating reduced from 6/10 to 2/10. Her quality of life as measured by PROMIS-29 improved compared to baseline except in the post-partum period. She delivered a 7 lbs., 5 oz, 20" baby vaginally.

In addition to these case reports, Alcantara et al.²⁹ described the quality of life (QoL) of males and females presenting for care in a chiropractic practice-based research network. The main technique utilized was the Webster Technique to address chief complaints of mainly low back pain as a single complaint or in combination with other anatomical regions of pain. Their study population was comprised of 126 subjects (average age = 39.68; 97 females). The majority of respondents presented with musculoskeletal complaints with an average mean duration of 7.188 years.

The mean PROMIS-29 T Scores were: depression (47.80); pain interference (53.49); fatigue (51.02); physical function (49.02); satisfaction with social role (52.10); anxiety (50.14); and sleep disturbance (49.88). These mean T scores reflected a poorer QoL when compared to a representative sample of the US population without or suffering from one chronic condition. To date, this is the 10th case report documenting the use of the Webster Technique in pregnant patients without a presentation of fetal malposition/malpresentation.

We encourage clinicians and chiropractic students alike to examine the case reported and learn from the clinical application of the Webster Technique. The philosophical framework of constructivism is more congruent with providing research evidence to inform clinical practice based on clinical experience. Based on the ontology and epistemology that reality is constructed by individual perception and research emphasizes the meaning due to the human experiences, the findings of this case report should inform chiropractors in the care of patients presenting similarly.

Conclusion

This case report provides supporting evidence on the effectiveness of pregnancy care utilizing the Webster Technique in pregnant patients presenting with musculoskeletal pain complaints without fetal malposition/malpresentation.

References

1. Barnes PM, Bloom B, Nahin RL. Complementary and alternative medicine use among adults and children: United States, 2007. *Natl Health Stat Report*. 2008;(12):1-23.
2. Holden SC, Gardiner P, Birdee G, Davis RB, Yeh GY. Complementary and Alternative Medicine Use Among Women During Pregnancy and Childbearing Years. *Birth*. 2015;42(3):261-9.
3. Wang SM1, DeZinno P, Fermo L, William K, Caldwell-Andrews AA, Bravemen F, Kain ZN. Complementary and alternative medicine for low-back pain in pregnancy: a cross-sectional survey. *J Altern Complement Med*. 2005;11(3):459-564.
4. Ohm J, Alcantara J. The Webster Technique: Definition, application and implications. *J Pediatr Matern & Fam Health - Chiropr*. 2012 Spring;2012(2):49-53.
5. Kovacs FM, Garcia E, Royuela A, González L, Abaira V, Spanish Back Pain Research Network.. Prevalence and factors associated with low back pain and pelvic girdle pain during pregnancy: a multicenter study conducted in the Spanish National Health Service. *Spine (Phila Pa 1976)*. 2012; 37(17):1516-1533.
6. Cęprnja D, Chipchase L, Gupta A. Prevalence of pregnancy-related pelvic girdle pain and associated factors in Australia: a cross-sectional study protocol. *BMJ Open*. 2017;7(11):e018334.
7. Elden H, Gutke A, Kjellby-Wendt G, Fagevik-Olsen M, Ostgaard HC. Predictors and consequences of long-term pregnancy-related pelvic girdle pain: a longitudinal follow-up study. *BMC Musculoskelet Disord*. 2016;17:276.
8. Close C, Sinclair M, Liddle SD, Madden E, McCullough JE, Hughes C. A systematic review investigating the effectiveness of Complementary and Alternative Medicine (CAM) for the management of low back and/or pelvic pain (LBPP) in pregnancy. *J Adv Nurs*. 2014;70(8):1702-1716.
9. Hall H1, Cramer H, Sundberg T, Ward L, Adams J, Moore C, Sibbritt D, Lauche R. The effectiveness of complementary manual therapies for pregnancy-related back and pelvic pain: A systematic review with meta-analysis. *Medicine (Baltimore)*. 2016;95(38):e4723.
10. Oswald C, Higgins CC, Assimakopoulos D. Optimizing pain relief during pregnancy using manual therapy. *Can Fam Physician*. 2013;59(8):841-842.
11. Alcantara J, Ohm J, Kunz K, Alcantara JD, Alcantara J. The characterisation and response to care of pregnant patients receiving chiropractic care within a practice-based research network. *Chiropr J Aust*. 2012;42(2):60-67.
12. Skaggs CD, George JW, Nelson DM, Gross G, Prather H, Thompson PA. Back and pelvic pain in an underserved United States pregnant population: A preliminary descriptive survey. *J Manipulative Physiol Ther*. 2007;30(2):130-134.
13. Murphy DR, Hurwitz EL, McGovern EE. Outcome of pregnancy-related lumbopelvic pain treated according to a diagnosis-based decision rule: a prospective observational cohort study. *J Manipulative Physiol Ther* 2009;32:616-624.

14. George JW, Skaggs CD, Thompson PA, Nelson DM, Gavard JA, Gross GA. A randomized controlled trial comparing a multimodal intervention and standard obstetrics care for low back and pelvic pain in pregnancy. *Am J Obstet Gynecol.* 2013;2008(4):295.e1-7.
15. Peterson CK, Mühlemann D, Humphreys BK. Outcomes of pregnant patients with low back pain undergoing chiropractic treatment: a prospective cohort study with short term, medium term and 1 year follow-up. *Chiropr Man Therap.* 2014;22(1):15.
16. Metcalfe A, Grabowska K, Weller C, Tough SC. Impact of prenatal care provider on the use of ancillary health services during pregnancy. *BMC Pregnancy Childbirth.* 2013;13:62.
17. Hall HG, Griffiths DL, McKenna LG. The use of complementary and alternative medicine by pregnant women: a literature review. *Midwifery.* 2011;27(6):817-824.
18. Hall H, Cramer H, Sundberg T, Ward L, Adams J, Moore C, Sibbritt D, Lauche R. The effectiveness of complementary manual therapies for pregnancy-related back and pelvic pain: A systematic review with meta-analysis. *Medicine (Baltimore).* 2016;95(38):e4723.
19. Gibbons R, Palmer D. Forgotten parameters of general practice: The chiropractic obstetrician. *Chiropr Hist* 1982;2:27-33.
20. Khorsan R, Hawk C, Lisi AJ, Kizhakkeveetil A. Manipulative therapy for pregnancy and related conditions: a systematic review. *Obstet Gynecol Surv.* 2009;64(6):416-427.
21. Oregon: Licenses, Permits and Registrations. Chiropractic Specialty Certification – Obstetrics. Accessed March 2, 2012 at: http://licenseinfo.oregon.gov/index.cfm?fuseaction=license_seng&link_item_id=14155.
22. Sims LA, Lee J. Resolution of infertility in a female undergoing subluxation based chiropractic care: case report & review of literature. *J. Vertebral Subluxation Res.* 2008;2008:1-6.
23. Alcantara J, Hamel I. the chiropractic care of a gravid patient with a history of multiple caesarean births & sacral subluxation. *J Vertebral Subluxation Res.* 2008; 2008:1-5.
24. Alcantara J, Ohm J, Ohm J. Chiropractic care of a patient with dystocia & pelvic subluxation. *J Pediatr Matern & Fam Health - Chiropr.* 2009 Winter;2009(1):1-50.
25. Siddle B, Cullinan T, Morris S, Wallwork K, McNamara C. Grand rounds case #1: Sacroiliac joint dysfunction in pregnancy. *J Clin Chiropr Pediatr.* 2010;11(2):811-815.
26. Edwards J, Alcantara J. Chiropractic care of a pregnant patient with a history of migraine headaches, hypothyroidism, and tachycardia. *J Pediatr Matern & Fam Health - Chiropr.* 2015 Winter;2015(1):71-76 .
27. Edwards J, Alcantara J. Chiropractic Care of a Pregnant Patient Presenting With Pseudotumor of the Cerebrum, Neck Pain, Migraine & Vertebral Subluxation. *J Pediatr Matern & Fam Health - Chiropr.* 2015;2015(3):108-111.
28. Edwards J, Alcantara J. The chiropractic care of a patient with Harrington rods, scoliosis and back pain during pregnancy. *J Pediatr Matern & Fam Health - Chiropr.* 2017 Winter;2017(1):32-39.
29. Alcantara J, Ohm J, Alcantara J. The use of PROMIS and the RAND VSQ9 in chiropractic patients receiving care with the Webster Technique. *Complement Ther Clin Pract.* 2016;23:110-6.