CASE STUDY

Resolution of Pain and Breech Presentation Following Subluxation Based Chiropractic Care: A Case Report and Update of the Literature

Tiffany Juergens Clark, D.C.[1] & Joel Alcantara, D.C.[2]

Abstract

Objective: To describe the chiropractic care of a pregnant woman with low back pain and leg pain concomitant with a breeched fetus.

Clinical Features: A 24-year-old, multi-gravid female sought chiropractic care at 37 weeks gestation with a chief complaint of low back pain and left leg pain as well as the desire for a natural childbirth. The breech fetus was diagnosed at 36 weeks gestation via ultrasound imaging.

Intervention and Outcomes: Chiropractic care administered over 2 visits using the Webster Technique resulted in the baby assuming the vertex position as imaged on ultrasound. The patient continued chiropractic care with the Webster Technique to address pelvic bowl dysfunctions over a total of 9 visits with positive outcomes.

Conclusion: This case report provides supporting evidence that pregnant patients may derive benefits from chiropractic care with and beyond their pregnancy-related musculoskeletal complaints.

Key words: *Webster Technique, vertebral subluxation, breech, pregnancy,chiropractic, low back pain*

Introduction

Acknowledging the heterogeneity in research methodology that examined the use of complementary and alternative medicine (CAM) by pregnant women, studies conducted report a range of CAM use from 1% to 87% in those surveyed.[1-2] Motivation for CAM use by pregnant women may be generalized to two major reasons: to address a specific pregnancy-related morbidity and to promote general health and wellbeing. Specific problems addressed by CAM therapy include pregnancy-related musculoskeletal complaints, nausea and vomiting, labor stimulation and induction, cervical ripening, perineal discomfort, lactation disorders, postpartum depression, preterm labor, postpartum hemorrhage, labor analgesia, and malpresentation.[3-4] CAM use is motivated in part to the thinking that CAM offers a safer alternative to pharmaceuticals, allows for greater choice and control over their childbearing experiences, with a care approach that is congruent with their holistic health beliefs.[2]

With respect to the use of specific CAM therapies, chiropractic is popular and highly utilized by women of childbearing age.[1,5-6] Among pregnant women, chiropractic's attractiveness as a care option is due to its holistic and patient-centered approach[7] and its effectiveness in addressing musculoskeletal complaints,[8-9] Given chiropractic's eclectic scope of practice, a number of adjunctive therapies involving both naturopathic and homeopathic remedies, exercise and

1. Private Practice of Chiropractic, Arlington, IL
2. Chair of Pediatric Research, Life Chiropractic College West, Hayward, CA and Research Director, the International Chiropractic Pediatric Association, Media, PA, USA

rehabilitation techniques, and yoga to list a few provide attractive alternatives to usual medical care.[10]

With chiropractors involved in the care of pregnant patients, the use of the Webster Technique is a popular approach to patient care.[11] To further contribute to evidence-informed practice, we describe the chiropractic care of a patient with pregnancy-related low back pain concomitant with a breech presentation using this technique.

Case Report

Patient History

A 24-year-old, multi-gravid female sought chiropractic care at 37 weeks gestation with a chief complaint of low back pain and left leg pain and the desire for a natural childbirth. At the time of clinical presentation, the patient's fetus was breeched as advised by her Obstetrician/Gynecologist. The breech fetus was diagnosed at 36 weeks gestation and a Caesarean birth was scheduled for the birthing.

Examination

With respect to the patient's low back and left leg pain complaints, onset occurred at 29 weeks of pregnancy after a long car ride. The patient characterized her pain complaint as constant, burning, sharp, and tingling. She rated her low back pain as mild and the left leg pain as moderate. On the verbal analog scale, her overall pain complaints was rated as 5 out of 10, with 10 being the worst pain the patient has ever experienced. The patient indicated that her pain complaints were somewhat relieved by stretching, but was worse with sitting, standing, lifting, sleeping, and walking.

Intervention

The attending chiropractor offered the patient a trial of chiropractic care utilizing the Webster Technique[11] to address sites of pelvic bowl dysfunction/subluxation. The patient was positioned prone on the adjusting table for evaluation with the use of an abdominal pregnancy pillow to accommodate the growing fetus and for comfort. In keeping with the analysis portion of the Webster Technique, both legs were flexed bilaterally in the heel-to-buttocks maneuver. Relative resistance was noted on the left leg compared to the right and a left sacral subluxation was strongly indicated. Motion palpation of the patient's left sacrum and sacroiliac joint confirmed a left sacral subluxation (i.e., P-L or sacral +Θy).

With the patient in the prone position as previously described, three posterior to anterior thrusts were made to the left posterior aspect of the patient's sacrum were made using the "cock-and-drop" mechanism of the chiropractic table (Heritage 5, Thomas Table Company, Davenport). The heel-to-buttock maneuver was performed again and the sacral dysfunction was found to be addressed based on an equal resistance in both legs. The patient was repositioned in the supine position to examine the integrity of her round ligaments. Trigger points were palpated along the left and right round ligaments. A slight inferior to superior bilateral contact was made with the thumbs on the round ligaments and a sustained pressure was applied until a "release" was palpable by the attending chiropractor.

Outcome

The Webster Technique was administered once a day for two days as described above. According to the patient, her fetus shifted from the breech to vertex position following the second visit as confirmed by ultrasound imaging. The patient continued with her chiropractic care resulting in a total of 9 visits with the Webster Technique applied at each visit.

Spinal subluxations were noted at the C_2, C_5, T_4, L_5, vertebral bodies and sacrum, associated with local hypertonicity, tenderness and decreased intersegmental motion. Muscular hypertonicity was noted at the cervical, thoracic, and lumbar paraspinal region. Cervical, thoracic, lumbar, and sacral adjustments were provided using Diversified Technique characterized as high velocity, low amplitude thrusts to address sites of vertebral subluxations. Commonly adjusted spinal segments were C_2 (i.e., PR), T_4 (i.e., PR), L_5 (PR), and sacrum (P-R). The patient's low back and leg pain complaints were improved by 50% on the 5th visit. Continued care resulted in continued improvement.

Discussion

Practice Activity

In the most recent practice analysis released by the National Board of Chiropractic Examiners, chiropractor responders indicated as rarely seeing pregnant patients within the past year.[12] When they did care for a pregnant patient, 72% indicated managing the patient in a co-management environment with 40% indicating as referring the majority of patients for consultation, further diagnostics, or treatment. Given this information, the chiropractic care of pregnant would seem to be developing as a specialty practice.

To date, the most comprehensive characterization of chiropractors and their pregnant patients is the study by Alcantara and colleagues.[13] In a practice-based research network (PBRN), 126 pregnant patients were characterized. The average patient age was 30.56 years with an average gestational age of 29.42 weeks at chiropractic presentation. Approximately 25% of the patients indicated presenting for "wellness care." A total of 241 presenting complaints were indicated by the patient population with low back pain localized to the lumbar spine as the most common site of complaint. A majority of the patients reported a high perceived effectiveness in the chiropractic care they were receiving. In the PBRN study by Alcantara and colleagues[13], response to inquiries on the specific effects of the chiropractic adjustment were categorized to 2 main domains consisting of decreased pain and improved function with "other" as the 3rd category due to heterogeneity of indicated responses.

Recently, Stuber and colleagues[14] conducted a literature review for possible adverse events from spinal manipulation in the pregnant and postpartum periods. The databases PubMed, CINAHL and the Index to Chiropractic Literature were examined for articles published in English and French in the peer-reviewed literature on the stated topic. The authors found

5 articles identifying adverse events in seven subjects following spinal manipulation along with two systematic reviews. The articles were published between 1978 and 2009. Two articles described adverse effects from spinal manipulation on two postpartum patients while three articles on five patients with adverse effects involved spinal manipulation in pregnant patients. Injury severity ranged from minor injury such as increasing pain after treatment that resolved within a few days to more severe injuries including fracture, stroke, and epidural hematoma. SIGN scoring of the prospective observational cohort study and systematic reviews indicated acceptable quality.

Stuber and his co-authors.[14] also commented on the possibility that SMT may be contraindicated in pregnant and postpartum patients given their hormonal and hypercoagulability status. The brothers Alcantara[15] critiqued this paper and cautioned that such an admonishment must be examined with caution given that SMT performed by various practitioners of manual therapy are not the same and aspects of what constitutes absolute and relative contraindications to SMT and overall safety need to be further characterized in the pregnant population.

The brothers Alcantara[15] noted that SMT is the primary mode of care approach for chiropractors and arguably, chiropractors are the best trained and have the most experience in delivering this type of patient care. The array of SMT techniques performed by chiropractors are varied and span the spectrum from low to high with respect to the velocity and amplitude of force applied, with or without the assistance of a mechanical device. Despite the popularity of the high velocity, low amplitude (HVLA) thrust type SMT in many chiropractic clinical studies, many more “techniques” are utilized by chiropractors (and other manual therapists) in clinical practice and specifically in the care of pregnant patients.

This flexibility in technique must be acknowledged as a consideration in the indications, contraindications and judicious application of SMT in patients during pregnancy and the postpartum period. Furthermore, if one examines the prevalence or incidence of stroke in the pregnant population compared to the general female population; pregnancy alone (barring specific etiologies), does not confer an increase in the prevalence or incidence of stroke.[16]

The effectiveness of chiropractic for pregnancy-related low back pain has been examined in only a handful of studies. The reviews by Stuber and Smith[17], Khorsan at al.[18] and Zerdecki and Passmore[19] have been examined by Alcantara and colleagues. [13] Although some measure of support on the effectiveness in the treatment of pregnancy-related low back pain have been provided by the 3 reviews[17-19], the evidence for chiropractic’s effectiveness was best described as emergent. Recently, Sadr et al.[20] utilized a qualitative research design to examine the treatment experience or clinical impressions with low back pain in 11 pregnant chiropractic patients and 10 chiropractors, respectively.

Five themes emerged out of the chiropractor and patient interviews. The themes involved treatment and effectiveness, chiropractor-patient communication, pregnant patient presentation and the chiropractic approach to pregnancy care, safety considerations and self-care. In terms of effectiveness, both the chiropractors and their patients indicated effectiveness on the part of chiropractic.

Murphy and colleagues[21] examined prospectively the response of pregnant patients with pregnancy-related lumbopelvic pain. Data on 115 patients were collected at baseline and on 78 patients at the end of the active treatment. Disability was measured using the Bournemouth Disability Questionnaire (BDQ). Pain intensity was measured using the Numerical Rating Scale for pain (NRS). Patients were also asked to self-rate their improvement. Care was provided by a chiropractic physician/physical therapist team. Fifty-seven patients (73%) reported their improvement as either "excellent" or "good."

The mean patient-rated improvement was 61.5%. The mean improvement in BDQ was 17.8 points. The mean percentage of improvement in BDQ was 39% and the median was 48%. Mean improvement in pain was 2.9 points. Fifty-one percent of the patients had experienced clinically significant improvement in disability and 67% patients had experienced clinically significant improvement in pain. Patients were seen an average 6.8 visits. Follow-up data for an average of 11 months after the end of treatment were collected on 61 patients. Upon follow-up, 85.5% of patients rated their improvement as either "excellent" or "good." The mean patient-rated improvement was 83.2%. The mean improvement in BDQ was 28.1 points.

The mean percentage of improvement in BDQ was 68% and the median was 87.5%. Mean improvement in pain was 3.5 points. Seventy-three percent of the patients had experienced clinically significant improvement in disability and 82% patients had experienced clinically significant improvement in pain. Peterson and colleagues[22] performed a pilot randomized controlled trial to compare the efficacy of exercise, spinal manipulation, and a mind-body therapy called Neuro Emotional Technique for the treatment of pregnancy-related low back pain. The women were randomly allocated into one of three treatment groups using which paralleled their prenatal care schedule.

The primary outcome measure was the Roland Morris Disability Questionnaire and the secondary outcome measure was the Numeric Pain Rating Scale. Intention to treat analysis was conducted. Fifty-seven participants were randomized into the exercise (n = 22), spinal manipulation (n = 15), and Neuro Emotional Technique (n =20). At least 50% of participants in each treatment group experienced clinically meaningful improvement in symptoms based on the Roland Morris Disability Questionnaire. At least 50% of the exercise and spinal manipulation participants also experienced clinically meaningful improvement for the Numeric Pain Rating Scale. There were no clinically meaningful or statistically significant differences between groups in any analysis.

The authors concluded that a pilot study as described was feasible for recruitment, compliance, safety, and affordability for a larger trial. Spinal manipulation and exercise generally performed slightly better than did Neuro Emotional Technique for improving function and decreasing pain. However, this must be examined with caution since the study was not adequately powered to detect the between-group differences as statistically significant. Since the review by Alcantara and

colleagues[13], a number of articles have been published on the success of chiropractic care in pregnant patients. We examined the literature using Pubmed [2009-2012] and Index to chiropractic Literature [2009-2012] for this update. Primary investigation reports in the English language involving pregnancy and chiropractic were included for review.

Hwang[23] described the successful care of a 28-year-old female at 32 weeks gestation with sharp, stabbing pain starting at the left sacroiliac joint and radiating into the posterior left thigh. The patient experienced 50% relief from the frequency and intensity of pain within two weeks of chiropractic care using drop table mechanisms and 90% improvement in function and decrease in pain occurred by the 6th week, despite re-aggravation of her condition from a fall during her 4th week of care.

Alcantara and Cossette[24] described the successful care of a pregnant patient with intractable migraine headaches during pregnancy. Ohm and colleagues[25] described 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, a consensus was reached to initiate chiropractic care with the Webster Technique. The result of care 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 a ½ hour later, the patient was at complete cervical dilation. The labor progressed rapidly thereafter and a healthy baby girl was born. Sipko and colleagues[26] examined 30 women in their eighth month of pregnancy and through 3 months after childbirth and found that the most frequently irritated ligaments in the lumbar region were the interspinous (60%), iliolumbar (40%), and sacroiliac (36%) ligaments.

Grand rounds format examining sacroiliac joint dysfunction[27] and multi-disciplinary management of pelvic girdle instability[28] during pregnancy has been reported. Phillips[29]reported that musculoskeletal and radicular pain can be successfully treated by a concurrent protocol of spinal manipulative therapy, craniosacral therapy, and dynamic body balancing techniques. Two patients were primiparous, three were gravid 3 para 2. All paragravida patients had similar histories of extreme radiculitis and prolonged first and second stage labors.

Marriott[30] provided an overview of diabetes and gestational diabetes mellitus, including their classifications, diagnosis, and management. Andrew[31] examined the concept of Non-Optimal Fetal Positioning in relationship to pelvic dysfunction in pregnancy to inform clinical practice. Van Loon[32] addressed intercostal neuralgia. Browning[33] explored the current evidence base on low back and pelvic girdle pain of pregnancy with recommendations for diagnosis and clinical management. Aas-Jakobsen and colleague[34] characterized pregnant women who sought chiropractic care in Norway.

Nightingale[35] reviewed the nutritional factors that affect post-partum depression. Cohn and Minnich[36] described the effects of care during two pregnancies – the first after five weeks of care, which was nonviable and the second at thirteen weeks of care, which was a successful conception. The second pregnancy was carried to term with no complications.

Gregory and Rowell[37] described the successful care of a 33-year-old, 3-month postpartum female with pelvic girdle dysfunction and low back pain which she had suffered from since the birth of her daughter. Peterson and Peterson[38] evaluated the use of manual muscle testing to identify fetal sex in women in a prospective case series of 27 sequential pregnant patients who did not know the sex of their fetus. Fourteen girl babies and 13 boy babies were born. Manual muscle testing accurately predicted the sex 13 times.

Howell[39] reported the successful care of two patients with Symphysis Pubis Dysfunction (SPD). Stone-McCoy and Abbott[40] described the care of a 29 year old female with polycystic ovary syndrome. After 4 months of care, the patient was able to conceive and deliver a healthy child. Wolcott and Hughes[41] described the care of a 28 year old woman with a two year history of subfertility following ovarian cancer and subsequent laparoscopy. The patient was able to conceive following 14 chiropractic visits. Peterson[42] described the successful care of a pregnant patient with heartburn.

The patient in the case reported presented with pregnancy-related low back pain and leg pain. In addition, she intimated that her fetus was in a breech position as determined by ultrasound imaging with a Caesarean birth planned by her Ob/Gyn. The patient indicated to her chiropractor that she would have preferred to have a natural childbirth. Historically, pregnant women with breech presentations have turned to chiropractors in the hopes of facilitating a natural childbirth. A popular approach to patient care in such patients is the Webster Technique.

Ohm and Alcantara[11] recently clarified in this *Journal* the philosophical, theoretical and clinical framework of the Webster Technique through a historical perspective with clarification of its clinical utility. We encourage the reader to access this article for details. Since the narrative systematic review by Alcantara and colleagues[13] on pregnancy care and chiropractic, a number of publications describe the continued success of the Webster Technique in pregnant patients. To the best of our knowledge, the largest cohort of pregnant women under Webster care examined prospectively was performed by Alcantara and colleagues.[43]

In a practice-based research network, a convenience sample of 81 pregnant women (ave. age =32.4 years) were monitored . Of the 81 subject, 63 (70%) reported a correction to the vertex position. Unfortunately, previous or concurrent care included external cephalic version, slant board, acupuncture, moxabustion, homeopathy and various forms of exercises. These confounders are reflective of the limitations of performing research in a practice-base setting. The rest of the literature involved case reports.

Stone-McCoy and colleagues[44] described a 33-year old expectant mother with a breech presentation. Following 9

visits with Webster care, the fetus presented vertex and a normal vaginal birth proceeded. Alcantara and colleagues[45] described the successful chiropractic care of five women during pregnancy with breech presentations using the Webster Technique.

Stone-McCoy and Slikwa[46] described a 37 year old woman pregnant 35 weeks with her third child in breech position. The Webster Technique were administered, as well as light effleurage trigger point therapy and home exercises. After five Webster Technique adjustments, the fetus turned from a frank breech position to a vertex, head-down position. Rubin[47] used the Activator Adjusting Instrument (AAI) in conjunction with the Webster's Protocol in 3 women with breech presentations. Each fetus successfully turned within 4 visits. Of the three, two went on to have normal vaginal deliveries while one developed other complications during delivery and required an emergency C-section.

As with all case reports, we caution the reader the generalizability of the case reported. The lack a control group, spontaneous remission, self-limiting course and natural history of the disorder, subjective validation, and expectations for clinical resolution on the part of the patient make cause and effect inferences challenging. Nonetheless, case reports provide measure of evidence, describe the clinical encounter and inform the design of higher level research designs.

Conclusion

We described the successful care of a pregnant patient presenting with pregnancy-related low back pain and leg pain concomitant with a breech presentation. This and other publications reviewed provide some measure of chiropractic effectiveness in the care of pregnant patients. We encourage continued research with this patient population under chiropractic care.

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