

The Chiropractic Care of a Gravid Patient with a History of Multiple Caesarean Births & Sacral Subluxation

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ABSTRACT

Objective: To demonstrate the role of chiropractic care in the management of a gravid patient with pregnancy-related low back pain and two prior Caesarean births.

Clinical Features: A 29 year old gravid female was provided chiropractic care to alleviate her low back pain. The patient had two surgical Caesarean deliveries for two previous births due to “failure to advance during labor and associated fetal distress.” In addition to the low back complaint, she wanted to undergo a trial of chiropractic care to possibly enable her to have a natural childbirth.

Interventions and Outcomes: The patient was cared for primarily with the Webster Technique, employing a drop-piece

mechanism for the sacral adjustment. The patient’s low back complaints were ameliorated along with a successful vaginal birth.

Conclusion: This case report provides supporting evidence on the effectiveness of chiropractic care in patients with pregnancy-related musculoskeletal complaints, and the possibility for facilitating vaginal birth despite previous Caesareans. We encourage further research into this area of care.

Key Words: *Webster Technique, VBAC, Gravid, Caesarean, Pregnancy, Chiropractic, Sacral Subluxation*

Introduction

Studies report that the use of Complementary and Alternative Medicine (CAM) by women is common, particularly as it pertains to labor and reproductive health.¹ A survey of midwives by Allaire and colleagues² found that over 90% of the responders recommended CAM for their patients. The most common reason indicated was for stimulation of labor or maternal relaxation during labor. In the chiropractic arena, a systematic review by members of the Council on Chiropractic Guidelines and Practice Parameters recently released their draft document entitled, “Literature Synthesis: Chiropractic Management of Prevention and Health Promotion; Non-Musculoskeletal Conditions; and Conditions of the Elderly, Children and Pregnant Women.”³ With respect to the chiropractic care of pregnant women, spinal mobilization/manipulation for Low Back Pain (LBP) of pregnancy and as part of prenatal care for prevention of some complications of labor and delivery was rated as, “Limited evidence to support chiropractic care, and benefits perceived may be due to nonspecific factors.”

In the interest of evidence-based practice and to address the scarcity of data in the scientific literature, we describe in case report format the successful chiropractic care of a patient with pregnancy-related low back pain and discuss the role of chiropractic in facilitating vaginal birth following repeated Caesareans. A recent publication by Belizan and colleagues found that Caesarean deliveries substantially confer greater risk than vaginal deliveries.⁴ This issue and other salient clinical topics will be discussed in the context of chiropractic care.

Case Report

A 29-year-old gravid female in her 34th week of gestation presented for chiropractic consultation and possible care. The patient had a chief complaint of LBP that she related to her current pregnancy. Throughout her pregnancy, she experienced episodes of debilitating pain in her buttocks, more symptomatic on the right side. According to the patient, her pain complaint was exacerbated and provoked by lying supine, performing household chores and being seated for periods of time greater than one hour. During an episode of LBP, she recalled that she could not move until her husband massaged the area of pain, which helped “somewhat.” The patient had

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history of similar pain complaints during the 3rd trimester of her second pregnancy. She further experienced constipation, gas and acidity which she also attributed to her current disposition. The patient could not recall and denied any traumatic events as an alternative cause to her low back complaint. She refused to take any medication for pain due to concerns for her baby.

Past history examination revealed that the patient had two previous Caesarean births. In addition to her low back complaint, she admitted that she was looking for “help” and wanted her lumbopelvic region examined due to concerns of possible contributing factors to her incapacity for natural childbirth. The patient reported that her first labor was “long” but could not recount the number of hours. The attending physician at that time informed her that her baby was under fetal distress and recommended a Caesarean birth, since the baby would not be able to go through the birth canal. Upon further retrospection, the patient admitted that no pelvimetric tests or any other types of tests were performed to confirm the medical doctor’s statement and just accepted it at face value. A Caesarean section was therefore performed with a midline vertical incision.

Two years later, a similar scenario unfolded during her second labor. Again, the patient described a long labor with little or no progression. Her medical doctor reported that labor was not going well and ordered a Caesarean birth. The patient was given a low horizontal incision for this Caesarean. The attending chiropractor found it noteworthy that during the initial consultation, the patient was determined in her desire to have a natural childbirth with her third pregnancy. She intimated that she had great difficulty in finding a medical doctor to agree in taking her case and fulfill her wish for a natural childbirth. During her prenatal care, the patient changed hospitals four times and changed obstetricians seven times. Each doctor thought she was “crazy” for wanting to put herself and her baby at risk and would not agree to be liable for her care. She finally found a doctor in her last weeks of pregnancy that would accompany her during the birthing process, but even this doctor did not claim a positive outlook for a natural childbirth.

Chiropractic examination

At the time of the examination, the patient arrived in a pleasant mood despite being in great pain. She had difficulty in “moving around” during the examination and exhibited a positive Minor’s Sign. Postural examination revealed a right head tilt and normal shoulder and hip (iliac crest) levels. The patient had unremarkable cervical lordotic and thoracic kyphotic curves based on superficial inspection. The patient did, however, have a hyperlordotic lumbopelvic curve insofar as could be visualized. She had bilateral hyperpronation of the feet.

On the first visit, the patient was evaluated using the Webster Technique.⁵ During this procedure, the patient is placed prone on the chiropractic table with pillows to accommodate her pregnancy. Flexing at the knees, the patient’s heels are brought to the buttocks simultaneously while noting for restriction in movement during knee flexion.

The side of relatively greater restriction is interpreted as the side of sacral posteriority (P-L (+ θ Y) or P-R (- θ Y)). The patient was restricted on the right side and therefore had a right side posterior sacrum or P-R (- θ Y). Palpable tenderness and edema was found along the sacral base and at both sacroiliac articulations as indicated by tenderness over the regions of the posterior superior iliac spine (PSIS). Muscle palpation revealed hypertonicity and spasm of the piriformis muscle on the right. Blood pressure reading and pulse were within normal range. Leopold’s maneuver reflected the baby to be in a flexed, vertex position. Fetal heart tones were within normal range and were obtained using a fetoscope. The patient reported that the baby was “moving and kicking a lot.”

Chiropractic care

The patient began care during her 34th week of pregnancy. The patient’s visits were restricted due to the fact that she lived approximately one hour away by car and was not able to drive without great discomfort. The patient was able to attend only four prenatal chiropractic visits. Chiropractic care was concentrated to her sacral region using the Webster technique combined with cranio-sacral techniques.

On the first visit, the patient was cared for using the Webster Technique.⁵ The patient’s sacral subluxation of P-R (- θ Y) was adjusted in the prone position. Specially constructed pregnancy pillows were used to accommodate her stomach and the growing fetus. The patient’s sacrum was adjusted with a contact point lateral to the second sacral tubercle on the right side. A high velocity low amplitude thrust was applied in the posterior to anterior direction and of sufficient magnitude to engage the lumbar drop piece of the chiropractic table. Post-treatment examination using the heel-to-buttocks test demonstrated equal tension on knee flexion indicative of amelioration of the sacral subluxation.

The patient was then instructed to lie in the supine position. The side of interest (referred to as the round ligament contact) is contralateral to the side of sacral posteriority and in this case, the left side. The intersection of two imaginary lines - one from the umbilicus and directed approximately 45⁰ inferior and lateral while the other directed from the anterior superior iliac spine and directed 45⁰ in the inferior and medial direction - is approximately the region overlying the round ligament. At this intersecting point, a sustained thumb contact was made and light pressure was applied and held for 1-3 minutes while gradually and alternately turning (“torqued”) 5⁰ in a clockwise or counterclockwise direction until the round ligament tension is felt to subside. Home instructions were provided to the patient on the use of cryotherapy to be applied to the lumbosacral and sacroiliac regions as needed to reduce the inflammation and help with the pain.

On the second visit, the patient was again cared for with the Webster Technique as described. Trigger point therapy to the buttock region was also applied to address the piriformis muscle spasms. Craniosacral care was also used to address the patient’s cranial dysfunctions.⁶ On the third visit, the examination portion of the Webster Technique demonstrated improvement with decreased tension and greater equality in the heel-to-buttock test.

However, the patient indicated no change in her symptoms of pain. The L5 segment was determined to be subluxated in the posterior direction and adjusted using the lumbar drop mechanism of the chiropractic table. In addition to the Webster technique, the patient was treated with the “buckled sacrum technique” as taught by Carol Phillips, DC.⁷ This brought immediate pain relief to the patient. Home instructions to the patient along with her husband were then provided on how to perform this procedure at home.

On the fourth visit, the patient reported that her low back pain had improved significantly. She was now in the middle of her 38th week of gestation. During this visit, the patient was cared for with the Webster technique, craniosacral therapy and the buckled sacrum procedure. The tenderness over the sacroiliac articulations had greatly abated as indicated by the patient during palpation. She reported being “better able to get around.” During the four visits to the chiropractor, the patient reported no adverse events, due to the chiropractic care she received.

At the end of her 40th week of pregnancy, the patient went into spontaneous labor. She labored 12 hours at home with her husband. Upon arrival at the hospital, her cervix was dilated to 6 centimeters. She kept active during labor as she was advised using the bath, standing, rocking, squatting and swaying to keep her pelvis moving and help with the descent of the baby. The patient reported that the medical team was very nervous about her labor and wanted her to be constantly monitored. She used a side lying position during the pushing stage and gave birth to a healthy baby girl – naturally and without the use of medications or a Caesarean surgical procedure, as had been with prior births.

Discussion

Throughout the 1970s and early 1980s, the rates of Caesarean births in the United States increased. However, by the late 1980s, the rates began to decline. Between 1989 and 1996, the total Caesarean birth rates plummeted due to a decrease in the primary rate and an increase in the rate of vaginal birth after Caesarean births. Yet, from the mid 1990s and onward, the trend began to reverse.⁸ By 2004, approximately 1.2 million women in the United States had a Caesarean birth, representing 29.1% of all births. This made Caesarean delivery the most common major surgical procedure for women in the United States.⁹

The medical indicators for a Caesarean delivery include placenta praevia, HIV infection, a contracted pelvis, breech presentation, dystocia, fetal distress and previous Caesarean births.¹⁰ The purported benefits of a planned Caesarean section include greater safety for the baby, less pelvic floor trauma for the mother, avoidance of labor pain and convenience. We do not disagree with a planned Caesarean delivery nor argue with the medical indicators or the decision of the attending medical doctor and the patient, but rather advocate for further research into alternatives wherein Caesarean delivery is but one option for the expectant mother and not the first option of choice. As part of a profession that advocates for a conservative approach to health, we view the choice of a Caesarean birth for mere convenience—to allow for the delivery at a known time and

avoidance of possibly a prolonged labor and its uncertainties—as having serious consequences.

In a study to examine the prevalence of maternal health problems in the 6 months after birth and the association with method of birth, Thompson et al. found that, compared with unassisted vaginal births, women who had Caesarean sections reported more exhaustion, lack of sleep, bowel problems and were more likely to be re-admitted to the hospital within 8 weeks of the birth.¹¹ Borders, in a review of the literature, showed similar findings.¹² That is, women giving spontaneous vaginal birth experience less short-term and long-term morbidity than women who undergo assisted vaginal birth—the use of forceps and vacuum extraction—or Caesarean births. Hemminki et al. discovered more complication and poorer infant outcome with later and subsequent births if the first births were Caesarean delivery, as compared to a first spontaneous vaginal delivery—even excluding women with persistent problems.¹³

In 1916, Edwin B. Craig made the often quoted statement, “once a Caesarean, always a Caesarean.”¹⁴ The following situations are contraindications to a trial of labor after a Caesarean birth: Previous classical or inverted uterine scar, a previous hysterotomy or myomectomy entering the uterine cavity, previous uterine rupture, presence of a contraindication to labor, such as placenta previa or malpresentation; or the woman declines a trial of labor after Caesarean and requests elective repeat Caesarean delivery.¹⁵

Today, despite the publications of numerous well-designed studies which support the success of vaginal births after Caesarean (VBAC)¹⁶⁻²¹ and two of the national objectives from Healthy People 2010 to promote vaginal births,²² the practice patterns of obstetricians do not support this as demonstrated by the small fraction (12.6%) of women with previous Caesareans giving birth vaginally in the United States.²³

The patient presented in this case report may be representative of such a continuing phenomenon until an overwhelming choice for a natural delivery and sought-after medical providers open to her wishes and incorporate chiropractic care. Keep in mind however that the present medical data suggest that a trial of labor in women with more than one previous Caesarean section is likely to be successful but is also associated with a higher risk of uterine rupture due to its inability to possibly withstand the forces of an expanding uterus and the forces of labor contractions.²⁴ The danger is further increased if the woman’s labor is provoked or augmented with the use of synthetic oxytocin—a drug that stimulates uterine contractions, since the contractions are more intense than those of normal labor. Again, comment is made barring consideration for other interventions that may facilitate vaginal delivery—such as chiropractic—despite previous Caesareans.

Implications for Chiropractic Care

The objectives of chiropractic in care of this patient were to alleviate low back pain complaints as a consequence of pregnancy. When the patient also indicated her motivation for

seeking chiropractic care – that is her determination to have a natural childbirth with her third pregnancy and the possibility that chiropractic may help, the chiropractor agreed to a trial of care. The attending chiropractor felt confident, based on clinical experience with similar patients. The theoretical and clinical framework from which the focus of care was primarily through the use of the Webster Technique.^{5,25}

The Webster Technique is defined as a specific chiropractic analysis and adjustment that reduces interference to the nerve system by facilitating balance in the pelvic and abdominal muscles and ligaments, in turn reducing constraint to the woman's uterus to allow the baby to get into the best possible position for birth. The Webster Technique focuses on alignment and proper biomechanics of the pelvic bowl, the involved articulations and associated ligaments and muscles.

With the patient presented, Webster Technique analysis revealed a right sacral posteriority. Digital palpation of the region of chief complaint further revealed concomitant right piriformis muscle spasms and tenderness over the sacral base and in both SI joint articulations. These findings are not unusual, with due consideration to the developing fetus in the pregnant patient.

The pelvic bowl and surrounding structures must necessarily accommodate the growing fetus. The role of the hormone relaxin in facilitating this change in the pelvic bowl is well established. However, such changes may result in biomechanical dysfunction or instability. One can imagine over a period of time spanning the patient's pregnancy, continued tension in the muscles and ligaments of the pelvic bowl eventually leads to muscle spasms and SI joint dysfunction.

Consider that the pelvic floor muscles such as the levator ani,²⁶ piriformis, coccygeus muscles²⁷⁻²⁸ and the transverse abdominal muscles²⁹ have been demonstrated to increase force closure of the SI joint. A force closure results in increased SI joint stiffness. Achieved by compressive forces on the articulating surfaces through muscular contraction, it directly increases the compressive load on the SI joint surfaces or alteration of the SI joint biomechanics thereby causing improper tension in ligamentous structures. Stiffening of the SI joint and contraction of the muscles of the pelvic bowl may be a response to the instability caused by the growing fetus and accommodating pelvic bowl by creating overall a stiffer pelvic ring and greater stability. This phenomenon is even more relevant in pregnant patients with low back pain and pelvic pain.^{27,29-31}

However, it is well known that a sustained contraction of a muscle may result in alteration of the timing and motor control of the muscle, particularly with the presence of SI joint pain.³²⁻³³ The birthing process necessarily requires a coordinated and properly-timed series of events – one of which would be the well-timed and coordinated contraction of the pelvic bowl muscles. Barring such an event may possibly result in dystocia.

Keep in mind that the patient presented in this case underwent two previous Caesareans due to a failure to advance in labor.

Dysfunctional muscles or sustained contraction have already been related to voiding dysfunction in patients with SI joint pain. How much more for a pregnant patient with pelvic instability? Correction of the sacral posteriority using the Webster Technique may restore proper alignment of the SI joint in addition to alleviating tension and spasm in the involved muscle and ligamentous structures discussed above. DeVocht and colleagues³⁴ as well as Lehman et.al.³⁵ have successfully demonstrated reduction in resting muscle activity through electromyographic examination following spinal manipulation.

Observational studies have been published documenting the use of the Webster Technique in patients with breeched pregnancies.^{24,36-38} However, more research is needed to fully elucidate the role of this technique in choosing the mode of delivery for pregnant patients. As with all case reports, we caution the reader on the generalizability of the case reported in similar patients. There exist competing explanatory variables that require further examination in higher level designed studies. These include:

- a. the natural history of back pain
- b. regression to the mean, and
- c. the result of placebo and non-specific effects.

“Self-fulfilling prophecy” may exist either from:

- d. the demand characteristics of the therapeutic encounter, or
- e. subjective validation may result in incorrect inferences from treatment.

Research incorporating randomization, a control group and manipulation of the independent variable—the active ingredient of the chiropractic adjustment—would assist in delineating the most effective mode of delivery for similar patients. In the meantime, further documentation of other cases or series and higher-level research design studies are needed to fully elucidate the effectiveness and safety of chiropractic care in such patients.

Conclusion

This case report described the successful chiropractic management of a patient with pregnancy-related low back pain and possibly facilitated a successful vaginal birth despite two previous Caesareans. We encourage further research in this field.

References

1. Allaire AD. CAM in labor and delivery suite. *Clin Obst Gynecol* 2001;44:681-691.
2. Allaire AD, Moos MK, Wells SR. Complementary and alternative medicine in pregnancy: a survey of North Carolina certified nurse-midwives. *Obstet Gynecol* 2000;95:19-23.
3. <http://www.ccgpp.org/> Last accessed 12/27/07.
4. Belizán JM, Althabe F, Cafferata ML. Health consequences of the increasing caesarean section rates. *Epidemiology* 2007;18(4):485-486.

5. Forrester J, Anrig C. The prenatal and perinatal period. In: Anrig C, Plaugher G, eds. *Pediatric Chiropractic*. Baltimore, MD: Williams and Wilkins 1998:75-161.
6. Upledger JE, Vredevoogd JD. *Craniosacral Therapy*. Eighth Printing. Eastland Press, 1989.
7. Phillips CJ. *Hands of Love – Seven Steps to the Miracle of Birth*. St-Paul, USA: New Dawn Publishing, 2001.
8. Martin JA, Hamilton BE, Sutton PD, et al. Births: Final Data for 2003. *National Vital Statistics Reports*; vol. 54, no. 2. Hyattsville, MD, National Center for Health Statistics, 2005.
9. DeFrances CJ, Hall MJ, Podgornik MN. 2003 National Hospital Discharge Survey. *Advance Data from Vital and Health Statistics*, no. 359. Hyattsville, MD, National Center for Health Statistics, 2005.
10. Porreco RP, Thorp JA. The cesarean birth epidemic: Trends, causes, and solutions. *Am J Obstet Gynecol* 1996;175:369-374.
11. Thompson JF, Roberts CL, Currie M, Ellwood DA. Prevalence and persistence of health problems after childbirth: associations with parity and method of birth. *Birth* 2002;29(2):83-94.
12. Borders N. After the afterbirth: a critical review of postpartum health relative to method of delivery. *J Midwifery Womens Health* 2006;51:242-28.
13. Hemminki E, Shelley J, Gissler M. Mode of delivery and problems in subsequent births: a register-based study from Finland. *Am J Obstet Gynecol* 2005;193:169-177.
14. Cragin EB. Conservatism in obstetrics. *N Y State J Med* 1916;104:1-3.
15. McMahon MJ. Vaginal birth after cesarean. *Clin Obstet Gynecol* 1998;41:369-381.
16. Fhumm BL, Lim OW, Jones C, Fallon D, Newman LA, Mantis JK. Vaginal birth after cesarean section: results of a multicenter study. *Am J Obstet Gynecol* 1988;158:1079-1084.
17. Gibbs CE. Planned vaginal delivery following cesarean section. *Clin Obstet Gynecol* 1980;23:507-515.
18. Martin JM, Harris BA, Huddleston JF et al. Vaginal delivery following previous cesarean birth. *Am J Obstet Gynecol* 1983;146:255-262.
19. Meier PR, Porte-co RP. Trial of labor following cesarean section: a two year experience. *Am J Obstet Gynecol* 1982;144:671-678.
20. Phelan JP, Clark SL, DiAx F, Paul RH. Vaginal birth after cesarean. *Am J Obstet Gynecol* 1987;157:1510-1515.
21. Stovall TG, Shaver DC, Solomon SK, Anderson GD. Trial of labor in previous cesarean section patients, excluding classical sections. *Obstet Gynecol* 1987;70:713-717.
22. U.S. Department of Health and Human Service. *Healthy People 2010, 2nd ed. With understanding and improving health and objectives of improving health (2 vols)*. Washington, DC: U.S. Department of Health and Human Services, 2000
23. NIH Task Force on Cesarean Childbirth. *Cesarean Childbirth*. Bethesda, MD: US Department of Health and Human Services (NIH), 198 1. Pub No.:82-2067
24. Martel MJ, MacKinnon CJ. Clinical Practice Obstetrics Committee, Society of Obstetricians and Gynaecologists of Canada. Guidelines for vaginal birth after previous Caesarean birth. *J Obstet Gynaecol Can* 2005;27(2):164-188.
25. Pistolese RA. The Webster Technique: a chiropractic technique with obstetric implications. *J Manipulative Physiol Ther* 2002;25(6):E1-9.
26. Pool-Goudzwaard A, van Dijke GH, van Gurp M, Mulder P, Snijders C, Stoeckart R. Contribution of pelvic floor muscles to stiffness of the pelvic ring. *Clin Biomech (Bristol, Avon)* 2004;19(6):564-571.
27. Snijders CJ, Vleemin, A, Stoeckart R. Transfer of lumbosacral load to iliac bones and legs. Part 1: Biomechanics of selfbracing of the sacroiliac joints and its significance for treatment and exercise. *Clin. Biomech* 1993a;8:285-294.
28. Snijders CJ, Vleeming A., Stoeckart R. Transfer of lumbosacral load to iliac bones and legs. Part 2: Loading of the sacroiliac joint when lifting in stooped posture. *Clin. Biomech* 1993b;8:295-301.
29. Richardson CA, Snijders CJ, Hides JA, Damen, L, Pas MS, Stor, J. The relationship between the transversus abdominis muscles, sacroiliac joint mechanics and low backpain. *Spine* 2002;27:399-405.
30. Mens JMA, Vleeming A, Snijders CJ, Stam HJ., Ginai AZ. The active straight leg raising test and mobility of the pelvic joints. *Eur Spine* 1999;8:468-473.
31. Pool-Goudzwaard,AL, Vleeming A, Stoeckart R., Snijders CJ, Mens JM.A. Insufficient lumbopelvic stability—a clinical, anatomical and biomechanical approach to a specific low back pain. *Man Ther* 1998;3:12-20.
32. O’Sullivan P, Beales D, Beetham J, Cripps J, Graf F, Lin, I., et al. Altered motor control strategies in subjects with sacroiliac joint pain during the active straight leg raise test. *Spine* 2002;27, E1-E8.
33. Avery AF, O’Sullivan PB, McCallum MJ. Evidence of pelvic floor muscle dysfunction in subjects with chronic sacro-iliac joint pain syndrome. In: *Proceedings of the 7th Scientific Conference of the IFOMT, 2000, Perth, 35-38*.
34. DeVocht JW, Pickar JG, Wilder DG. Spinal manipulation alters electromyographic activity of paraspinal muscles: a descriptive study. *J Manipulative Physiol Ther* 2005;28(7):465-471.
35. Lehman GJ, Vernon H, McGill SM. Effects of a mechanical pain stimulus on erector spinae activity before and after a spinal manipulation in patients with back pain: a preliminary investigation. *J Manipulative Physiol Ther* 2001;24(6):402-406.
36. Kunau, PL. Application of the Webster In-Utero Constraint Technique: A Case Series. *J Clin Chiro Pedi* 1998;3(1):211-216.
37. Ohm J. Chiropractors and midwives: a look at the Webster Technique. *Midwifery Today Int Midwife* 2001 Summer; (58):42.
38. Alcantara J, Martingano S, Keeler V, Schuster L, Ohm J. The Webster Technique: A Case Series. *J Can Chiro Assoc* [submitted for publication]