

CASE STUDY

Resolution of Breech Presentation Confirmed by Ultrasound & Successful Vaginal Birth Following Webster Technique in a Pregnant Female: A Case Study & Review of Literature

Pamela Stone-McCoy, DC, DACCP¹ & Baley White, DC²

Abstract

Objective: The purpose of this case study is to discuss the positive health outcomes and resolution of breech presentation in a pregnant female undergoing chiropractic care utilizing Webster Technique.

Clinical Features: A 28-year-old first time pregnant mother presented to the chiropractor at 33 weeks pregnant with breech presentation and hip pain.

Intervention and Outcomes: Over the course of one month the patient was managed utilizing Webster Technique to determine sacral subluxations. After 7 visits, her hip pain decreased and the fetus was found to be in the vertex position which was confirmed by ultrasound. The patient continued chiropractic care until the successful vaginal delivery of the baby.

Conclusions: This case discusses the result of the Webster Technique and chiropractic adjustments to relieve hip pain and sacral alignment. The patient was able to have a successful vaginal birth with no reported complications.

Key Words: *Breech, Webster Technique, chiropractic, vertebral subluxation, adjustment, manipulation, pregnancy, fetal malposition*

Introduction

There are 4 key terms related to the position of the fetus. These include: lie (relation between the fetal and maternal longitudinal axis), presentation (the fetal part being offered to the pelvic inlet), attitude (position of the head in regard to the fetal spine), and position (an anatomical reference point and its localization to the maternal axis).¹ Longitudinal lie is required to achieve a vaginal delivery. Both vertex and breech presentations are considered to be a longitudinal lie but the success rate of vaginal delivery differs.^{1,2}

The presentation of the fetus prior to the birth is greatly

influential on the ease of delivery. The optimal fetal presentation is vertex, when the head is facing down and the occiput is facing anterior.² The most common fetal malposition is breech.³ About 30% of all fetuses will present as breech before 28 weeks of gestation, but by the 34th week a majority will flip to vertex presentation, the ideal position for delivery.^{2,4} After 34 weeks, approximately 9% of breech presentations will spontaneously convert to vertex position.⁵ According to research, a 4-time higher risk of perinatal mortality is found in a fetus with breech presentation over vertex presentation.⁵ Approximately 3-4% of singleton fetuses

1. Private Practice of Chiropractic, Kennesaw, GA
2. Private Practice of Chiropractic, Hiram, GA

present breech at term delivery.⁶ About 10-12% of singleton fetuses are breech in preterm delivery.⁷

The predisposing factors of breech pregnancy have been analyzed. The predisposing factors can be separated into maternal, placental, liquid, cord and fetal factors. The most common breech predisposing factors would be a primiparity, maternal anticonvulsant therapy, older maternal age, with fetal growth restriction and previous breech presentation. A higher incidence of perinatal morbidity and mortality is found in breech delivery with low birth weight and prematurity.³

A study from New South Wales determined only 0.4% of babies in the breech presentation were born vaginally. Typically, the vaginally born breech babies are more common in higher income areas throughout the world.⁶ Cesarean section (C-section) is the most used delivery method for breech presentation, and the most effective delivery method before the onset of labor.^{6,7} There are still multiple risks associated with the C-section procedure including: hemorrhage, cardiac arrest, venous thromboembolism and major infection. The complications are not common with uncomplicated vaginal delivery.⁸ The United States has some of the highest Cesarean rates worldwide, with approximately 31.9% of all births being cesarean section deliveries.⁹

Vaginal delivery is possible in a breech presentation of the fetus, but a skilled and experienced clinician is necessary for the delivery. The number of clinicians with expertise in vaginal breech delivery has a declining trend, indicating a higher use of the C-section in breech delivery.⁶ With 1 in 3 breech presentations requiring C-section over vaginal delivery, the next concern of the pregnant mother is the option of induction. In a meta-analysis, it was found that when breech labor was induced there was an increased C-section and NICU admission rate when compared to spontaneous delivery.¹⁰

Other options when confronted with breech presentation is to initiate techniques suggested to turn or assist in the turning of the fetus. A medical model to turn a breech fetus to vertex presentation is external cephalic version (ECV). ECV typically has a low success rate, with studies stating a success rate ranging from 35% to 86% after 37 weeks gestation. Although, ECV is higher than the 22% rate of spontaneous version.¹¹ The success rate is thought to increase with a larger use of tocolytics to relax the uterus. ECV has been suggested to benefit the mother in birth but benefit to the fetus has been shown to be uncertain.⁷

Other techniques sometimes suggested to encourage cephalic version include: moxibustion, ginger paste, homeopathic remedies, fetal acoustic stimulation, hypnosis, acupuncture, chiropractic and yoga. These techniques do not suggest to directly turn the fetus, but instead aim to improve the ease of pregnancy and help reduce the chances of complications.^{11,12} Studies have found chiropractic and acupuncture can influence breech presentation in 92% and 75% of cases respectively, without suggesting to directly turn the breech fetus.¹²

The most common chiropractic technique used in pregnancy is the Webster Technique. The Webster technique is a specific chiropractic analysis and diversified adjustment. The goal of the adjustment is to reduce subluxation and/or SI joint

dysfunction. In so doing neurobiomechanical function in the sacral/pelvic region is improved.¹³

In this clinical and theoretical framework, it is proposed that sacral misalignment may contribute to these three primary causes of dystocia via uterine nerve interference, pelvic misalignment and the tightening and torsion of specific pelvic muscles and ligaments. The resulting tense muscles and ligaments and their aberrant effect on the uterus may prevent the baby from comfortably assuming the best possible position for birth.¹³

Case Report

Patient History

A 28-year-old female presented to the chiropractic office at 33 weeks pregnant. The patient was monitored by her midwife throughout the pregnancy and presented to the chiropractic office with the child in breech presentation. The patient had not experienced chiropractic care previously and this was her first pregnancy. The patient had a chief complaint of bilateral hip pain in conjunction with the breech presentation.

Examination

Examination revealed decreased range of motion in the lumbar regions along with muscle spasms and point tenderness in the low back. Postural analysis revealed a high left shoulder and a high right ilium. The heel to buttock test revealed a leg lag on the right, indicating the left side of the sacrum had moved anterior and inferior, and the right side of the sacrum had rotated posterior. A round ligament contact, and right piriformis sweep was also indicated.^{2,5,13} Bilateral paraspinal thermal scanning and surface electromyography (sEMG) was also conducted at the initial visit.

Thermal scanning determines the presence of temperature asymmetries on either side of the spine. These asymmetries between corresponding sites on opposing sides of the spine is highly suggestive of nerve impairment.¹⁴ A rolling thermal scan was conducted revealing mild temperature differentials at T3, T6, L4 on the right, moderate temperature differentials at C2, C5, C6, C7, T1, T2 also on the right and severe temperature differentials at C1 on the left. (see figure 1)

Surface electromyography (sEMG) is used to measure paraspinal muscle tone.¹⁵ The sEMG performed on the initial visit demonstrated multiple areas of muscle asymmetry. The sEMG revealed severe muscle tension at C1, C3, C5, C7 bilaterally and T1 and S1 on the right, moderate muscle tension on the left at T1, T2 and T4, and mild muscle tension at T2 and T4 on the right and at L3 and S1 on the left. (See Figure 2)

Intervention and Outcome

The patient was analyzed utilizing Webster Technique. The patient would lie prone using a pregnancy pillow and a drop away pelvic piece. In the Webster Technique, leg lag is used to determine the side of sacral subluxation. To test for leg lag, the patient's heels are approximated to the buttocks to determine a side with greater resistance. The leg lag was

assessed each visit and the sacral subluxation that correlated with the side of leg lag was corrected.^{2,13}

To adjust the sacrum, the patient remained in the prone position utilizing the pelvic drop to correct the subluxation. After the thrust was delivered, leg lag was reassessed to confirm the subluxation resolution. Step two of the Webster Technique is a soft tissue assessment of the round ligament. With the patient supine, the round ligament is palpated to assess for trigger points and taut muscle fibers. To release the tension a sustained pressure is applied to the ligament in an inferior to superior direction. Additional soft tissue work was performed on the piriformis muscle and psoas muscle.

In addition to chiropractic care the patient received a one-hour massage on her third visit. On the 2nd, 3rd and 7th visits, diversified adjustments were given to other spinal regions including lumbar and cervical. Another reoccurring manual therapy in her care plan was the piriformis sweep and left psoas, performed on visits 1, 4, 5, 6, and 7.

The patient was scheduled for care at three times per week for four weeks. On the 8th visit the patient reported the baby was head down, determined with ultrasound performed three days prior. The patient continued her care plan until the delivery of her child, reducing the visits to 1 time per week. The child was born after 11 chiropractic adjustments. The patient went on to have a vaginal hospital delivery with no birthing complications noted during the 9-hour labor.

Discussion

Allopathic Approach

The current medical model for breech presentation is ECV and if that is unsuccessful then Cesarean delivery.¹¹ Studies have shown ECV at term can reduce the necessity for cesarean delivery. ECV is a manual technique delivered by the obstetrician that applies pressure on the mother's belly to force the baby to flip to a vertex presentation.¹⁶ Although, few studies of large size have been conducted on the effects of ECV in breech pregnancies.⁷ ECV was suggested to have a success rate of less than 50% especially in nulliparous women.⁷

When the ECV is unsuccessful, the next approach is delivery by Cesarean section. Cesarean section is considered to be a safer option than vaginal delivery in preterm breech, but can have an increased risk for neonatal respiratory distress syndrome in future pregnancies.¹⁶ Cesarean section is a surgical procedure that includes multiple risks to the mother when compared to a vaginal birth. Many women are choosing to look into alternative approaches in conjunction with or over the allopathic approach when pregnancy is involved.¹⁷

Complementary and Alternative Medicine Approach

Complementary and alternative medicine (CAM) is becoming more widely used upon the pregnant population. Nowadays, women in pregnancy are open to many CAM options even though there is little research to support the techniques.¹⁸ Studies have found that 69% of Americans utilize CAM during pregnancy.¹⁸ CAM includes: acupuncturists,

homeopaths, naturopaths and chiropractors. Many women reported they did not disclose the use of CAM to their obstetricians and midwives.¹⁸

Without the full disclosure between the OB/midwife and CAM practitioner, health risks and a therapeutic relationship can be undermined. With CAM becoming increasingly popular, it is important for patients to disclose this information and for all parties involved to be supportive of ongoing treatment. The collaboration between all practitioners could improve the woman's pregnancy experience and provide optimal care throughout. It must be reiterated that CAM techniques do not imply to directly turn the fetus, but instead aim to improve the ease of pregnancy and help reduce the chances of complications.^{11,12} Chiropractic research has been expanding and it has become a well accepted approach to improve the pregnancy experience.

Vertebral Subluxation

Chiropractic has a history of benefit to the pregnant woman. Chiropractic adjustments are intended to remove or reduce vertebral subluxations from the spine. The vertebral subluxation model, according to Kent, is made of three components. The components include dyskinesia, dysponesis and dysautonomia. Dyskinesia is the decrease in normal voluntary movement, dysponesis is a decrease in involuntary muscle activity and dysautonomia and a decrease in the autonomic nervous system function.¹⁹

Chiropractors determine the subluxations through appropriate instrumentation, objective and subjective analysis. Chiropractic subluxations can have health alterations present with and without symptoms.²⁰ It is through the three components of the vertebral subluxation that health is analyzed, and health restored. By removing the subluxation in the patients, proper tone is restored throughout the nervous system.^{19,20} According to DD Palmer, health is dependent upon the nervous system tone.¹⁹ The Webster Technique is a specific analysis to determine the presence of vertebral subluxation in the pelvis and restore proper biomechanics.

Webster Technique

The Webster Technique was created by Dr. Larry Webster to assess the sacrum and related soft tissue structures in all weight bearing individuals.^{2,5} Dr. Webster went on to create the International Chiropractic Pediatric Association (ICPA) which is now the only organization to certify chiropractors in the Webster Technique.¹³ This technique initially was used on many breech fetal pregnancy patients who reported the correction to vertex position following chiropractic care.

Further research revealed through the delivery of the sacral adjustments and soft tissue work, the Webster Technique, restores the optimal amount of space in the pelvis and restores normal neurobiomechanical function.^{2,13} When the pelvis is in proper alignment and moving properly and when ligament and muscle tone is restored, this allows the fetus a better environment and a better chance to comfortably assume the best possible birthing position. Multiple studies have shown the benefits of Webster Technique during pregnancy.

In a study by Pistolese, a survey was used to determine the efficacy of the Webster Technique from a larger sample size. Data was collected on 112 patients undergoing chiropractic care during pregnancy with a breech presentation. The doctors delivering the chiropractic care were all ICPA certified in the Webster Technique. The results determined a high success rate of 82% of babies converting from breech to vertex presentation when under the utilization of the Webster Technique.⁵

Alcantara et al. surveyed a sample of 81 patients with breech presentation, in a practice-based research network study. The patients were treated using Webster Technique in the hopes of the fetal malposition correcting to vertex presentation. Of the sample, it was reported 70% of the subjects corrected to vertex presentation, determined by palpation, ultrasound or both.²

Falk and Stinson reported a case of a 26-year-old patient at 27 weeks gestation with her 2nd child. After 29 visits utilizing Webster Technique the fetus converted from breech position to vertex. The vertex position was confirmed by ultrasound. The patient had a normal vaginal birth with no complications.²¹

Drobbin and McClain described a case of a 35-year-old patient presenting with breech presentation at 34 weeks pregnant. The patient had a history of cesarean section in a previous pregnancy. After two weeks with 4 adjustments of Webster Technique, the fetus had changed to vertex position, confirmed by ultrasound. The patient went on to have a vaginal birth after C-section (VBAC) with no reported complications.²²

Cherry and Wilson described a case of a 27-year-old patient at 35 weeks pregnant with a breech presentation. The patient had a previous pregnancy with no reported complications. After 2 visits, the position of the baby had been confirmed to vertex presentation. In addition to fetus presentation, the patient's subjective findings had decreased by 90%.²³

Stone-McCoy, Sell and Drwencke reported on a case of a 33-year-old multigravida expectant mother with breech presentation at 8 months gestation. After 9 visits, the midwife reported the baby was no longer in breech presentation. The mother confirmed another healthy vaginal birth with no complications.⁴

Drobbin and La Rosa discussed a case of a 30-week gestation, 31-year-old expectant mother with transverse breech presentation. The patient received Webster Technique for 24 visits during the pregnancy. It was confirmed by the midwife the fetus had turned to vertex presentation after the 7th visit. The mother went on to delivery vaginally with no complications reported.¹⁹

Edwards and Alcantara examined a case of a 30-year-old midwife that presented at 34 weeks gestation. The fetus was determined to be in transverse lie malposition. The fetus was confirmed to be in vertex position after 4 visits. After 6 weeks of diversified, Thompson and Webster Technique adjusting, the patient reported a vaginal delivery with no serious

complications.²⁰

A case report by Dashtkian and Whittle Davis, a 25-year-old patient presented to an office at 31 weeks pregnant in breech presentation, confirmed by the obstetrician. Webster Technique adjustments were given. After one visit, the fetus had shifted from breech to transverse position. After 2 visits, the fetus shifted from transverse to vertex position confirmed by the obstetrician. The patient has an uncomplicated vaginal delivery.⁸

Conclusion

Over a one-month period the fetus turned from breech presentation to vertex presentation with the only change in care being the addition of chiropractic adjustments. The utilization of the Webster Technique helped to re-establish normal pelvis and sacral biomechanics, alignment, and restore normal function of pelvic ligaments.

After 7 chiropractic adjustments it was confirmed by ultrasound the fetus had moved to a vertex position. Continuing under chiropractic care the mother went on to have a normal vaginal birth without complications. This study is limited being the account of one patient undergoing Webster Technique, but helps to support current evidence. Further research is needed to support the role of the Webster Technique on the female pelvis and its effect with breech presentation throughout the pregnancy.

References

1. Fishkel VS, Leguizamon GF. Labor and delivery. In: Barbieri RL, Reece EA, editors. *Obstetrics and gynecology: the essentials of clinical care*[Internet]. Stuttgart: Thieme; 2010. Chapter 11.
2. Alcantara J, Ohm J, Kunz D. The Webster Technique: results from a practice
3. lit-based research network study. *J Pediatr Matern & Fam Health*. 2012;2012:16-21.
4. Mere T, Handiso T, Mekiso A, Jifar M, Ibrahim S, Bilato D. Prevalence and perinatal outcomes of singleton term breech delivery in Wolisso Hospital, Oromia Region, Southern Ethiopia: a cross sectional study. *J Environ Public Health*. 2017;2017:1-8. doi: 10.1155/2017/9413717.
5. Stone-McCoy P, Sell M, Drwencke K. Resolution of breech presentation and successful vaginal birth following administration of Webster's Technique: a case study. *J Pediatr Matern & Fam Health*. 2012;2012:5-11.
6. Pistolese R. The Webster Technique: a chiropractic technique with obstetric implications. *J Manipul Physiol Ther*. 2002;23(6):1-9. doi: 10.1067/mmt.2002.126127.
7. Catling C, Petrovska K, Watts N, Bisits A, Homer C. Barriers and facilitators for vaginal breech births in Australia: clinician's experiences. *Women Birth*. 2016;29:138-43. doi: 10.1016/j.wombi.2015.09.004.
8. Tunde-Byass M, Hannah M. Breech vaginal delivery at or near term. *Semin Perinatol*. 2003;27(1):34-45. doi: 10.1053/sper.2203.50003.
9. Dashtkian H, Whittle-Davis H. Resolution of breech presentation following application of Webster Technique: a case report. *J Pediatr Matern & Fam Health*. 2011;2011:40-2.

10. <https://www.cdc.gov/nchs/data/vsrr/vsrr-007-508.pdf>
11. Sun W, Liu F, Liu S, Gratton S, El-Chaar D, Wen S, Chen D. Comparison of outcomes between induction of labor and spontaneous labor for term breech – a systemic review and meta-analysis. *Eur J Obstet Gynecol Reprod Bio.* 2018;222:155-60. doi: 10.1016/j.ejogrb.2017.12.031.
12. Tiran D. Breech presentation: increasing maternal choice. *Complement Ther Nurs Midwifery.* 2004;10:233-8. doi: 10.1016/j.ctnm.2004.01.005.
13. Brill J. Effective alternative treatments for breech presentation. *Midwifery.* 2003;2003:38-9.
14. Ohm J, Alcantara J. The Webster Technique: definition, application and implications. *J Pediatr Matern & Fam Health.* 2012;2012:49-53.
15. Uematsu S. Thermographic imaging of cutaneous sensory segment in patients with peripheral nerve injury. Skin temperature stability between sides of the body. *J Neurosurg.* 1985;62(5):716-20.
16. Mohseni Bandpei M, et al. Reliability of Surface Electromyography in the Assessment of Paraspinal Muscle Fatigue: An Updated Systematic Review. *J Manipulative Physiol Ther.* 2014;37(7):510-21. doi: 10.1016/j.jmpt.2014.05.006.
17. Drobbin D, La Rosa S. Resolution of transverse breech pregnancy following administration of chiropractic using the Webster Technique: a case study & selective review of the literature. *J Pediatr Matern & Fam Health.* 2015;2015:9-14.
18. Edwards J, Alcantara J. The chiropractic care of a pregnant patient experiencing multiple fetal positional changes. *J Pediatr Matern & Fam Health.* 2015;2015:77-81.
19. Bowman R, Davis D, Ferguson S, Taylor J. Women's motivation, perception and experience of complementary and alternative medicine in pregnancy: A meta-synthesis. *Midwifery.* 2017;59:81-7. doi: 10.1016/j.midw.2017.11.007.
20. Kent C. Research on purpose: a three dimensional model of vertebral subluxation. *Chiropractic Journal.* 1998:38-50.
21. Kent C. Models of vertebral subluxation: A review. *J Vert Sublux Res.* 1996;1(1):11-7.
22. Falk D, Stinson R. Resolution of breech presentation confirmed by ultrasound following Webster Technique: A case study. *J Pediatr Matern & Fam Health.* 2017;2017:74-7.
23. Drobbin D, McClain B. Resolution of breech presentation and successful VBAC in a patient undergoing Webster Technique: A case study & selective review of the literature. *J Pediatr Matern & Fam Health.* 2017;2017:44-53.
24. Cherry J, Wilson N. Resolution of breech presentation confirmed by ultrasound following Webster Technique: a case study & review of literature. *J Pediatr Matern & Fam Health.* 2016;2016:104-17.

Appendix

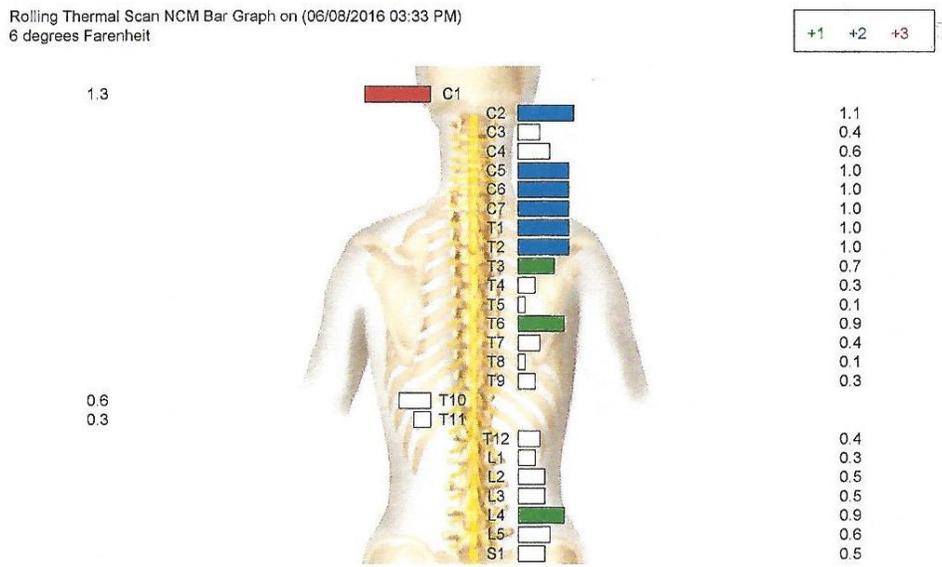


Figure 1. Thermal Scan on Initial Visit

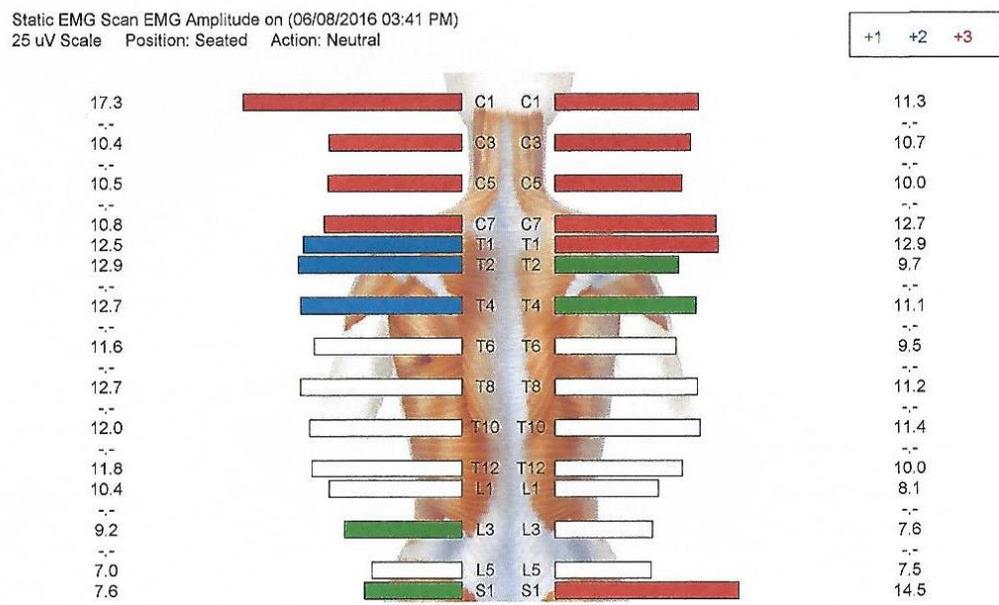


Figure 2. Surface EMG on Initial Visit