Introduction

Fetal malposition is a growing concern in our society today. Associated factors that may cause malposition are uterine abnormalities, placenta previa, prematurity, multiple gestation and others. Lumbosacral and pelvic subluxation may also be concomitant with a malpresentation.\(^1\) The rate of cesarean section according to Li, et al 2012 is rising, accounting for 31.6% of births in 2010.\(^2\) Stone-McCoy et al. indicates that breech presentation describes the incidence where the feet or buttocks are presenting in a less than optimal position for birth, in comparison for vaginal delivery.\(^3\)

Throughout and post pregnancy, there are biomechanical changes and stressors to the female pelvis as the fetus is growing. Chiropractic care may help to facilitate a labor free of complications by addressing the musculoskeletal issues encountered by pregnant women as patients\(^4\), including low back pain. Low back pain is shown to be the most common symptom in pregnant women, especially those with a breech fetal presentation.\(^5\) Approximately 25-30% of pregnant patients present with breech fetal malposition by the 28th week of gestation; however, by term, the number reduces to 4%.\(^6\)

About 4% of pregnant women have a fetus with breech malposition when first consulting with their obstetrician; moreover, up to 86% of them will give birth via cesarean

Abstract

**Objective:** The purpose of this study is to discuss the chiropractic care of a pregnant patient with breech presentation utilizing Webster technique.

**Clinical Features:** 31 year old pregnant female patient presents to the chiropractor with a diagnosis of transverse breech presentation by her obstetrician at 30 weeks gestation.

**Interventions and Outcomes:** Webster Technique was utilized during patient’s care of 24 visits. After 7 visits over 3 weeks of chiropractic care, midwife confirms vertex presentation of fetus through assessment of fetal position. The mother went on to have a natural home birth thereafter.

**Conclusion:** This case describes the resolution of a transverse breech pregnancy at 33 weeks, following utilization of Webster technique, confirmed by midwife.

**Key Words:** Pregnancy, breech pregnancy, Webster technique, chiropractic, vertebral subluxation, adjustment, spinal manipulation

Resolution of Transverse Breech Pregnancy Following Administration of Chiropractic Using the Webster Technique: A Case Study & Selective Review of the Literature

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CASE STUDY

Transverse Breech Pregnancy
According to the World Health Organization, “the highest acceptable rate of U.S. cesarean section delivery was 15%. In 1999, U.S. cesarean section rate was 22% where 13% was due to breech fetal positioning.”

As implied by Stone-McCoy and Sliwka, giving expecting women the option of an alternative to care for breech pregnancy may possibly give the fetus an increased chance for a natural, non-invasive, vaginal birth. A causative explanation addressed by Pistolese is that intrauterine constraint is any force external to the developing fetus that obstructs the normal movement of the fetus. Dr. Larry Webster founded an organization known as the International Chiropractic Pediatric Association (ICPA) to establish a network in order to promote chiropractic care to children and pregnant women. He went on to develop the Webster Technique over 30 years ago as a means to evaluate for sacral subluxation and to address pelvic instability. The ICPA defines this technique as:

“A specific chiropractic analysis and diversified adjustment. The goal of the adjustment is to reduce subluxation and pelvic dysfunction; thus, restoring the neurobiomechanical function of the pelvis.”

A survey was conducted with doctors who belonged to the ICPA and utilized Webster’s Technique in practice. Eighty-two percent of the doctors have used the technique and it was observed that ninety-two percent of the patients’ surveys showed resolution of breech presentation during their pregnancy. A chiropractor utilizes the Webster Technique in order to correct a sacral subluxation utilizing chiropractic specific adjustments in restoring the neurobiomechanical function of the pelvis which addresses a potential cause of musculoskeletal imbalance that leads to aberrant tension on the uterus which may contribute to malposition of the fetus. A survey was conducted with doctors who belonged to the ICPA and utilized Webster’s Technique in practice. Eighty-two percent of the doctors have used the technique and it was observed that ninety-two percent of the patients’ surveys showed resolution of breech presentation during their pregnancy. A chiropractor utilizes the Webster Technique in order to correct a sacral subluxation utilizing chiropractic specific adjustments in restoring the neurobiomechanical function of the pelvis which addresses a potential cause of musculoskeletal imbalance that leads to aberrant tension on the uterus which may contribute to malposition of the fetus. A chiropractor utilizes the Webster Technique in order to correct a sacral subluxation utilizing chiropractic specific adjustments in restoring the neurobiomechanical function of the pelvis which addresses a potential cause of musculoskeletal imbalance that leads to aberrant tension on the uterus which may contribute to malposition of the fetus.

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Static electromyography, or sEMG, measures bilateral symmetry of paraspinal muscles. Asymmetry indicates an abnormal finding. Subluxation is assessed similarly with the evaluation of symmetrical, bilateral taut and tender muscle fibers. sEMG tests for muscle function and tone. Tone is the amount of tension in the muscle fibers. One way tone is measured is through the evaluation of dysponesis. Dysponesis results from environmental and emotional stressors and is the neurophysiological component of the vertebral subluxation complex. When evaluating asymmetry at various spinal levels and patterns of sEMG, dysponesis is assessed. s-EMG assessments are performed for amplitude, and symmetry of muscle tone. Effective and appropriate management can be implemented into chiropractic care plans by assessing dysponesis and the other components of the vertebral subluxation complex.

Static-EMG was performed on the initial exam, revealing mild elevation in paraspinal muscle tone at C3, T2, T6 and L1 on the right side. There was moderate elevation in paraspinal muscle tone at C5 and T12 on the right and S1 on the left. Severe elevation in paraspinal muscle tone was noted at C3, C5, T2, and T6 on the left and C1, C7, T1, and T4 on both left and right sides. Areas of significant asymmetry were noted at C3, C5, T2, T4, T6, T8, T10, and S1 on the left and C7 and T12 on the right.

The same test was also performed on the reassessment. Findings included: reduced muscle tension at T10-R. There was mild paraspinal muscle tone at T1, L1 and L5 on the right side, T2, T12 and S1 on the right side and C3 on both right and left sides. There was moderate paraspinal muscle tone at C7 on the left and T4 and T12 on the right side. Severe paraspinal muscle tone at C1 was shown on both right and left sides and C7 and L1 on right side. Significant asymmetry was shown at C7, T2, T4, T12, L1, and S1 on the right and T6, T10, L3, and L5 on the left.

Thermography is used to evaluate skin temperature differences between homologous sections of the body. The thermal scan used for this study measures the differences at the left and right paraspinal levels of the spine. Differences in temperature for a specific body area are normally less than 1 degree Celsius; however, can vary depending on the region scanned. Thermal asymmetry is assumed to indicate that an underlying neurophysiological pathology is present secondary to vertebral subluxation; therefore, used as an assessment tool to improve care in order to form an effective clinical management plan.

Thermal scans performed at initial visit revealed findings including: mild paraspinal asymmetry at C2, C3 and C4 on the left, and L3 and L4 on the right side. There was moderate paraspinal asymmetry at C5, T2 and T5 on the left and T7 and T8 on the right. Severe asymmetry is noted at C1 on the right and C6, C7 and T1 on the left. At reassessment, mild paraspinal asymmetry was noted at C3, C5, and T2 on the left and T11 and T12 on the right. Moderate paraspinal asymmetry is noted at T1 on the left. Severe asymmetry is noted at C6 and C7 on the left and C1, T9 and T10 on the right side.
McCoy et al. performed a study to assess the reproducibility of paraspinal thermography and found that it has an “excellent intra-examiner and inter-examiner reproducibility, and is also a reliable method of analysis.”

Based upon the physical exam findings, static-EMG and thermal scan, subluxation was found at left C1 and right sacrum. The patient was seen twice weekly and continued chiropractic care throughout pregnancy.

**Chiropractic Care.**

Webster Technique was utilized throughout the duration of the patient’s care as indicated above. The analysis of the technique involves two primary steps. The first step, specifies that with the patient prone, leg lag is checked by placing the patient’s heel to buttocks. The more resisted side is the side of sacral posteriority. A special type of pillow designated for pregnant women for extra support may be placed beneath the patient’s belly when lying in the prone position. A contact-specific adjustment is made by placing the pisiform of the inferior hand, lateral and slightly inferior to the S2 tubercle and the superior hand on top to reinforce the P-A line of drive. The drop piece is cocked upward at a tension in relation to the patient’s body weight. The low-force, gentle prone adjustment is applied to reduce the sacral rotation and posteriority; as well as to restore the proper pelvic biomechanics.

Webster indicated that a side posture adjustment can also be used when the patient is unable to lie in the prone position. Leg lag is then rechecked as a confirmation that the sacral subluxation was reduced. The second component of the Webster Technique is the evaluation of the round ligament for tender nodules and taut fibers. The patient lies supine for this step. The side of the tender nodules in the round ligament is usually the side opposite of sacral posteriority. Trigger point therapy is used as a way to reduce the tension in the ligament and relax the ligaments and muscles supporting the pelvis, increasing the biomechanical function. Both steps are addressed each visit until the function of the pelvic biomechanics are improved.

C1 vertebra was also analyzed and adjusted each visit. Left C1 was adjusted with a lateral index finger contact on the left transverse process of C1 with a posterior to anterior, inferior to superior and lateral to medial line of drive with the right hand stabilizing the right side of the cervical spine.

**Outcome.**

Patient underwent chiropractic care for 24 visits, over approximately 11 weeks. On her 8th visit, she reported that the baby was no longer in transverse breech position and had turned into a vertex presentation, confirmed by her midwife via fetal position assessment. The patient continued care and was able to have a natural, assisted homebirth and healthy vaginal delivery of a baby boy, in the presence of her midwife and family.

**Discussion**

**Review of the Literature**

Ferguson and Kulesza reported the case of a 35 year old pregnant patient at 30 weeks gestation. After 4 visits utilizing Webster Technique, the fetus turned from transverse breech presentation to vertex presentation, confirmed by ultrasound.

Stone-McCoy et al. performed a case study demonstrating a 33 year old female pregnant patient with breech presentation at 8 months gestation. After 9 visits, the midwife confirmed vertex position and the mother had a healthy vaginal birth.

A paper by Abbott, showed resolution of breech position confirmed by ultrasound after three adjustments utilizing Webster Technique and Activator on a multiparous 30 year old woman presenting in 34th week of gestation. Her first pregnancy was a Cesarean section. The medical doctors suggested Cesarean method should be applied if labor was not initiated by 40 weeks, which was the case.

Heagy and Wrubel reported on a case of a 28 year old pregnant patient with a twin breech presentation at 30 weeks gestation. After 5 adjustments utilizing Gonstead and Webster techniques, the obstetrician confirmed vertex presentation. The patient had a normal vaginal birth.

Rubin reported on three pregnant patients presenting with chief complaints of breech presentation, with a diagnosis from their obstetrician of “intrauterine constraint.” Webster analysis and protocol was addressed utilizing Activator technique to reduce the posterior sacral subluxation. Within 4 visits for each pregnant patient fetal positioning changed to vertex presentation and 2 of the 3 had normal vaginal deliveries.

Drobbin and Welsh demonstrated a study on a 41 year old pregnant patient presenting at 36 weeks with breech presentation and planned cesarean section that the patient was trying to avoid. After 5 adjustments using Webster Technique, the fetus turned from longitudinal lie and breech to longitudinal lie and vertex presentation.

Clark and Alcantara performed a case study of a 24 year old pregnant woman with low back pain, leg pain and breech fetal presentation. After 2 visits utilizing Webster Technique, the fetus turned to vertex presentation. The patient continued chiropractic care to address pelvic biomechanical dysfunction.

Alcantara et al performed an exploratory study analyzing pregnant patients in a practice based research network. The study was the first to contribute to an evidence-based practice using the Webster Technique. Out of a convenience sample of 81 pregnant patients receiving chiropractic care, 63 reported the presentation of the fetus converted from breech to cephalic. The patients were also using other health care approaches simultaneously or previously, such as ECV, acupuncture and homeopathy. This research study suggests that chiropractic care may give positive benefits in pregnant patients with fetal malpresentation when using Webster Technique.
**Proposed Mechanism**

Vertebral subluxation is theorized to cause an alteration in afferent input which alters somatosensory processing, sensorimotor functioning and motor control. When this occurs, signs and symptoms of pain and disability present which alter function of the body. With a chiropractic adjustment, function is re-established by normalizing afferent input, somatosensory processing, integration and motor control.\(^{20}\)

According to the vertebral subluxation complex theory, an alteration to the functioning of the mechanoreceptors may affect postural tone. A compromised afferent input gives out an altered efferent response.\(^{3,21}\) Stone-McCoy et al relates this concept to how alterations in the pelvic ring during pregnancy reduce the range of motion in a spinal segment and cause trigger points. Input to the CNS is able to be restored by reducing the subluxation enabling increased function to the body.\(^3\)

There are eight ligamentous attachments to the pelvis which serve as a link between the musculoskeletal imbalances of a pregnant female pelvis and the chance for fetal malposition. The structure and strength of these ligaments serve to hold the uterus in place for the growing fetus and it is essential to keep them in proper function and alignment.\(^{3,7}\) The female pelvis is designed with the size and shape for a healthy vaginal birth. There are two uterosacral ligaments which form the bridge for the anterior sacrum to uterus within the pubic cavity and two round ligaments which form connections for the pubic rami to the uterus.\(^{16}\) The round ligament functions as support by maintaining the uterus in an anterior position.\(^7\) It is essential to keep the ligaments free of any constriction\(^{17}\). Pistolese indicates a cause of trigger points is due to postural abnormalities, postural overload, fatigue or physiological stress.\(^{7,9,16}\)

According to Kent,\(^{22}\) there are three technique models of subluxation: Segmental, Postural and Tonal. All three models are utilized in the analysis of the Webster technique for pregnant women. The segmental model is addressed when using techniques such as Gonstead and Diversified. The concept is applied when analyzing for L5 body rotation in relation to the Ilii. The postural model is utilized to assess for alterations in the shape of the pelvic bowl leading to postural imbalances while pregnant. The tonal model is addressed in relation to the supporting ligaments of the uterus.\(^{16}\)

**Chiropractic Approach.**

In one study,\(^ {23}\) it is indicated that fetal breech presentation and low back pain syndrome were the top two reasons new pregnant patients come into the office; moreover, there are numerous other reasons existing pregnant and post pregnancy patients continue chiropractic care. A recent study by Stubler and Smith displayed a case on pregnancy related low back pain and chiropractic care resulting in positive outcomes.\(^5\) According to the Council on Chiropractic Guidelines and Practice Parameters, there is limited evidence on spinal manipulative therapy during pregnancy and it is described as “emergent.”\(^5\) Alcantara et al. stated that efficacy of treatment could not be met because there was no higher level designed study, specifically a randomized controlled trial.\(^5\) A systematic review of literature was performed by Alcantara et al to analyze common complaints of pregnant patients when presenting to a chiropractic office.\(^5\) An interesting finding that Alcantara et al. report is that the primary complaint of sacrospinal pain is found in 79.1% of pregnant patients and round ligament discomfort is found as another complaint in 3.3% of pregnant women.\(^5\) It is stated that Webster technique reflects “the uniqueness and need in care for pregnant patients.\(^5\) Chiropractic allows restoration of pelvic balance in relation to the surrounding muscles thereby removing uterine constraint and giving the fetus optimal potential for positioning in preparation for birth.\(^4\)

General physicians recommend chiropractic to their patients as a complement to care 70.9% of the time according to Furlow et al.\(^ {24}\) They believe chiropractic has an effectiveness of 65.6%. Unfortunately, as many as 63% of patients initiate CAM modalities on their own without reporting it to their gynecologist or obstetrician. The attitude of physicians is more positive than obstetricians on the use of complementary and alternative medicine.\(^ {24}\)

**Obstetric Approach.**

External Cephalic Version (ECV) is obstetrics’ technique to change the position of the fetus manually.\(^{17}\) ECV is performed under careful monitoring of the fetal heart rate and is performed by the obstetrician by manually pushing on the mother’s belly in attempt to force the baby to turn from a breech presentation to cephalic, or vertex lie.\(^8\) Approximately 4% of pregnant women have a fetus with breech positioning when first consulting with their obstetrician. Up to 86% of them will give birth via cesarean section.\(^ {3,9}\) ECV in the management of breech malposition lowers the need for cesarean section, especially in situations where vaginal breech delivery is not known. However, safety is still a concern as labor is at high risk post version. After external cephalic version, regardless of success, pregnant women were at a higher threat for prolonged labor, dystocia, or difficult labor, leading to an increased incidence for emergency cesarean section.\(^ {19}\) The success rate of ECV is 80% before 37 weeks and 63% after 37 weeks. Other options include the use of a slant board, pelvic tilt and prenatal massage therapy of which do not currently have research and acupuncture with moxibustion.\(^ {3,9}\)

Currently, frank breech is the most common fetal malpresentation, presenting in 60% of breech births. Footling presentation accounts for 35% of breech births and are usually pre-term.\(^ {19}\) Cesarean section is becoming routine for breech presentation. Cesarean section is considered to be a safer option for preterm breech deliveries; however, it increases risks to future pregnancies and has a higher incidence for neonatal respiratory distress syndrome.\(^ {19,26}\) Cesarean delivery greatly increases risks to the pregnant mother compared with vaginal deliveries.\(^ {26}\) Rosen states that “when dealing with breech pregnancy, it is important that all options be considered before drastic measures are necessary. The Webster technique is a… safe and reliable method.”\(^ {27}\)
Cohain suggests that reasons for breech could be immobility’s effect on gravity, twins, uterine shape anomalies, and short umbilical cord. Placenta previa is a rare but fatal risk of external cephalic version. In a study of 7,377 patients, there was a 0.12% incidence of placental abruption and a 0.43% incidence of cesarean post ECV. An interesting finding of Cohain’s is that a pregnant patient described ECV as “very painful,” suggesting that when the baby turns to head down position post ECV it is considered to have “unstable lie” giving the indication that babies easily turn and labor should be induced. Another alternative method is moxibustion with acupuncture, which involves incense burning adjacent to the acupuncture needle at the location of the pinky toe. However, no current research on the safety or success rate of moxibustion is available. Hypnotherapy, according to Mehl, suggests “psychophysiological factors influence breech presentation.” Forty of fifty breech babies turned to vertex using hypnosis alone in one study.

Conclusion

This report of a 31 year old multiparous female patient presenting with transverse breech presentation utilizing Webster technique during her pregnancy proved to be effective. Receiving chiropractic care during pregnancy, specifically utilizing the Webster technique, helped to re-establish normal sacral alignment and biomechanics of the female pelvis. The pelvic ligaments relax to function as uterus support which in turn relieves intrauterine constraint to the fetus and therefore, normal function is restored. This provides the space necessary for a growing fetus in vertex position which is the optimal position for a healthy vaginal birth. After 8 chiropractic adjustments using Webster Technique, the diagnosis of vertex fetal position at 33 weeks by was confirmed her midwife. The patient continued chiropractic care for the remaining 8 weeks of her pregnancy. The patient was then able to have a natural homebirth.

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