CASE STUDY

Vaginal Birth After Multiple Cesareans Following Subluxation-Based Chiropractic Care: Case Study & Selective Review of the Literature

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Abstract

Objective: To review the management of a 39-year-old woman seeking a vaginal birth after three caesarean sections (VBAC3) while under subluxation-based chiropractic care.

Clinical Feature: A 39-year-old woman was referred into a chiropractic clinic for pregnancy related low back pain and to increase possibility of a vaginal birth after three caesarean sections.

Interventions and Outcomes: After referral to the chiropractic clinic the patient was assessed for an initial examination using static and motion palpation, postural analysis, prone leg checks, thermography and surface EMG. Following the initial examination, specific chiropractic adjustments were initiated using the Webster and Diversified chiropractic techniques for a total of 14 visits recommended over an 8-week time period prior to the patient giving birth. The patient made significant improvement and was able to have a vaginal birth after three previous caesarean births.

Conclusion: There is limited research on women attempting vaginal birth after caesarean sections and the role of vertebral subluxation management. This study suggests positive outcomes through chiropractic care during pregnancy for women attempting a vaginal birth after caesarean section. Further studies should be done on this topic as many women have a concept of once they have a caesarean section that is the only option for future births.

Key Words: *VBAC, chiropractic, adjustment, subluxation, manipulation, Webster Technique, Diversified Technique, caesarean*

Introduction

Vaginal Birth After Caesarean

A vaginal birth after caesarean (VBAC) can be a real and viable birthing option for most women with previous caesarean section.[1,2] There are many reasons why women prefer a VBAC rather than elective repeat caesarean section. A few reasons for a women's preference for a VBAC are: a women's instinctual desire to experience a vaginal birth, opposition of surgical procedures performed without medical necessity, a safer method for both mom and baby, and faster recovery time for mom.[3,4] VBAC is associated with lower maternal mortality and overall less morbidity for mothers and babies.[1,2,5] Of the women who choose a planned VBAC, the success rates range from 70 to 87% (similar to general vaginal birth rates).[1,2]

Many times, women are not informed of the benefits and risks between both elective repeat caesarean section and VBAC.

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Many women today make a decision based on coercion of their healthcare provider leading them to elective repeat caesarean section instead of VBAC.[5,6] According to a systematic review by Nilsson et. al., information given to women was most commonly provided by doctors and related mostly to procedural matters rather than focusing on the risks and benefits linked with VBAC.[5] Due to lack of decision aids and knowledge, women are often unable to make an informed-decision regarding birthing modes post caesarean section.

Caesarean section rates have risen globally in the past decade. Comparatively, the VBAC rate has declined in the US but varies widely in different healthcare settings and countries.[1,2,5] The most common reason for caesarean section is repeat caesarean following previous caesarean section.[1,2] If rates continue to rise at the same pace as in recent years, the overall caesarean section rate is projected to be 56% by 2020.[5] According to the World Health Organization in 1985 the ideal rate for caesarean sections was between 10-15%. When medically justified, a caesarean section can effectively prevent maternal and perinatal mortality and morbidity. However, there is no evidence showing benefits of caesarean delivery for women or infants who do not require the procedure.[7] Reasons suggested for the continuing increase in caesarean sections include 1) decrease training for clinicians in instrumental vaginal and breech vaginal births, 2) medico-legal issues, 3) the increased use of electronic fetal heart rate monitoring in labor, and 4) maternal request.[1,3,6] Although a necessary and sometimes life-saving operation, caesarean section is associated with more than double the rate of severe maternal morbidity and maternal mortality when compared with vaginal birth. The lack of evidence of any decrease in morbidity associated with this rise raises questions about clinical effectiveness and the role of evidence. The present challenge is reducing unnecessary caesarean sections while maintaining those needed to save lives and decrease morbidity.[1]

Repeat elective caesarean births are associated with an increased risk of many complications. Given the higher incidence of placenta previa, placenta accreta, hysterectomy, and composite maternal morbidity in women who have increasing numbers of caesarean section births, the potential effect this trend will have on women's health in the future warrants immediate attention.[5,8] Placenta previa is when the placenta is located low in the uterus partially or completely covering the cervix.[8] This may require a caesarean delivery, if the placenta to cervical os distance is less than 2cm, as the placenta is usually located at the top or side of the uterus.[8] Also warranting a caesarean delivery is placenta accreta. This is when the blood vessels and other parts of the placenta attach too deeply in the wall of the uterus. This can cause severe blood loss during delivery making it a high-risk pregnancy complication.[9] As the number of caesarean births for each individual women increases, so does the difficulty in performing surgery due to adhesions, and the risk of damage to the bladder or bowel at the time of surgery.

Pregnancy and Low Back Pain

As pregnant women move into their second and third trimesters, their centers of mass shift anteriorly, this may cause an increase in lumbar lordosis, which causes low back and pelvic girdle pain. Increasingly recent evidence attests to effectiveness and safety of treating this pain using manual therapy. Massage therapy and chiropractic care, including spinal adjustments, are highly safe and effective evidence-based options for pregnant women suffering from mechanical low back and pelvic pain. Musculoskeletal pain is extremely common among pregnant women, with approximately 20% of pregnant women experiencing pelvic girdle pain and 50% to 85% experiencing low back pain. Women might report to their physicians with symptoms of pain located in the groin, pubic symphysis, or sacroiliac joint. They often believe that their pain is a result of a problem with their placenta, uterus, or developing baby. Common sacroiliac joint dysfunction can often cause substantial pelvic pain and can be relieved with a simple adjustment by a chiropractor. Chiropractors are also trained to understand when symptoms are indicative of something more ominous and to refer the patient to the appropriate professional if a non-mechanical issue is suspected.[9]

Review of Literature

Present medical data suggest that a trial of labor (TOL) 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. The danger is further increased if the women'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.[3] A systematic review by Lundgren shows that expectant management and planned VBAC is the leading robust strategy to reduce rates of caesarean section in women at low risk of obstetric complications.[1] Despite previous caesarean other interventions should be considered to promote vaginal birth.

Currently found in the peer-reviewed literature are three accounts of women in their late twenties and early thirties who presented to the chiropractor for multiple and various complaints. The commonality between all these cases was the patient's desire for a VBAC. This case makes the 4th inclusion in the literature of a successful VBAC following chiropractic care. Spear and Alcantara discuss a case of a 28-year-old female who presents for chiropractic care at 29 weeks with her 2nd pregnancy.[10] She presents to the chiropractor with chief complaints of chronic migraines, pregnancy related neck and back pain, ultrasound confirmed placenta previa and a desire of having a VBAC. Utilizing the Diversified technique with drop tables, the patient received chiropractic care for a total of 6 visits over 6 week time span. After three visits over 10 days the patient's migraines were resolved.[10] On the 4th visit the patient's placenta previa was resolved and this was confirmed by ultrasound imaging. Following a TOL after chiropractic care, the 28-year-old female had a successful VBAC with no complications or use of medications. The patient also reported a faster labor.[10]

The previous case is similar to the case by Edwards and Alcantara where another 28-year-old female presents to a chiropractic office in her 14th week of gestation also with her 2nd pregnancy and history of one previous caesarean section.[11] This patient presented with complaints of migraine headaches, hypothyroidism, tachycardia, and sacral pain. The Diversified

technique with drops along with Webster technique were used to provide a total of 33 visits of care over a seven month period.[11] During the course of care the patient experienced two occurrences of visual disturbances and neurological symptoms in the face and upper extremities. The first occurrence was in her 26th week of gestation when she experienced floaters in both eyes that was improved by rest. "Immediately following this, she reported losing the inferior aspect of her peripheral vision."[11] She also experienced numbness and tingling sensation in her left hand and loss of sensation on the left side of her face. After following up with a neurologist no abnormalities were found. At 30 weeks the patient fell at home and upon follow up with her Obstetrician, the fetus was found in transverse lie position.[11] However, after two visits to the chiropractor and completing recommended inversion exercises at home the fetus had shifted back to vertex position. It was during the 38th week that the patient experienced the second occurrence of the same visual disturbances and neurological symptoms except they presented on the right side. The patient was adjusted in accordance to the subluxation findings and two days following her adjustment all her symptoms were resolved.[11] The patient received many benefits from chiropractic care during the course of her pregnancy including a successful TOL at 40 weeks and four days with no complications. The patient also reported that she did not "feel the urge to push until the end of her delivery although she was had sore arms and legs from trying so many birthing positions".[11] Post-delivery the patient remained under chiropractic care for 14 weeks for maintenance care.

All three articles found in the literature contribute something unique. For example, in the case by Alcantara and Hamel a 29-year-old female with pregnancy induced low back pain presents to the chiropractor at 34 weeks of gestation with history of two previous caesarean sections.[12] The techniques used were Webster, Craniosacral therapy and buckled sacrum procedure. The patient only received chiropractic care during 4 visits to the chiropractor prior to her delivery and reported she was able to get around better prior to going into labor. She labored for 12 hours at home and arrived at the hospital 6-cm dilated. While in active labor she began swaying, squatting, standing, and rocking to help the baby descend. In a side laying position the patient pushed the baby out and had a successful, drug-free, complication-free vaginal birth.[12]

The notion that chiropractic care has potential to reduce risk and promote the ability to have a natural birth after caesarean is indicated in the case by Spear and Alcantara where the patient reported after four chiropractic visits that her presentation of placenta previa was resolved and reported no complications and even a faster labor.[10] Not only did all three women in each case study experience safe and successful vaginal births without complications or medications needed; many secondary symptoms were also resolved while under chiropractic care.[10,11]The desired consideration through these studies are other interventions such as chiropractic care as an alternative for birth after caesarean instead of caesarean section as a first option post previous caesarean section.

Reporting on case studies there is a realization of the associated constraints due to lack of control group, subjective validation, expectations of the patients in suggestion of a cause and effect alluding to desired outcome. However, this review served the purpose of sharing clinical experience and to attest to the lack of research present in the literature on the topic of VBAC and the benefits under chiropractic care. This review of the literature calls for more research on the successful chiropractic care for the pregnant patient with or without the common complaint of low back pain and the presentation with multiple symptoms. Research is also encouraged in the management of the pregnant patient with the desire to have a VBAC.

Chiropractic & Vertebral Subluxation Complex

Gray's anatomy states that the nervous system controls and coordinates every function in the entire body.[13] The philosophy of chiropractic is that the body is designed to function at its optimal potential when there is no interference with the nervous system.[14] A vertebral subluxation is the misalignment of two or more bones upon one another. This causes interference in the function of the nervous system.[14] In the presence of a vertebral subluxation a chiropractic adjustment is administered by the chiropractor, which allows the nervous system to function more effectively. The body can now adapt to its environment and function optimally free of nerve interference.[14]

Case Report

History

A 39-year-old, full time stay-at-home-mother was referred to the chiropractic office by her doula. She had a history of three caesarean sections and presented to the clinic when she was 28-weeks pregnant with her fourth child. She had a desire to have a VBAC. For this reason, and low back pain (LBP), which is a common complaint of pregnant women in a chiropractic office, her doula referred her to the clinic. The patient had not previously been under chiropractic care.

She presented to the clinic with a chief complaint of LBP which history revealed was actually Sacroiliac (SI) joint pain on both sides. She reported that standing aggravated the pain and sitting relieved it but would cause an aching sensation. As described by the patient, the pain comes and goes but is worse at the end of the day. She describes the pain as a sharp pain that did not radiate and she rates the pain on a scale of 0-10, 0 being no pain and 10 being the worst pain. She rated her pain as a 4/10 and reported that she experienced this pain with her second pregnancy when she experienced sciatica. She also had a history of a motor vehicle accident (MVA) at the age of 18-years-old where she was rear-ended at approximately 10-20mph. She did not seek any form of healthcare after the MVA, nor did she feel any noticeable pain. She also reported that she had a past history of falling down the stairs twice but remembered nothing specific about the falls.

The patient reported other symptoms and conditions during the initial history and consult. She had complaints of mid-back pain, headaches, numbness and hip pain. She complained of mid-back pain that she felt the week prior to her initial visit. The location of the pain was T10-T12 and she described it as a dull achy pain. She reported that she thought the pain was postural due to her protruding belly from her pregnancy. She reported that every couple weeks she gets headaches in the

temporal region of the head that were not pregnancy related. Getting more sleep and drinking more water helped with the headaches. She stated that the numbness she experienced was only present with her pregnancies. While sleeping on her side, her shoulder would ache and a sensation of numbness traveled into her hands. She would turn over to the other side to get relief. Lastly, the onset of hip pain was experienced two weeks prior to her initial visit. She reported that whichever hip she is laying on at night resulted in pain, predominantly on the left side. She described the pain as a dull ache and to relieve the pain she would flip to the opposite side.

A brief history of the patient's previous births was taken on the initial visit. The first caesarean birth was induced in the hospital because labor was not progressing and once contractions started getting closer together, the attending doctor reported the baby was not getting enough oxygen. A caesarean section was advised by the doctor and scheduled. The baby was delivered after 12 hours of labor. The second caesarean birth the patient requested a vaginal birth and was advised to have a scheduled caesarean section because of possible uterine rupture. The second baby was born due to scheduled caesarean. The third caesarean birth again, the patient requested a vaginal birth and the response she received from her doctor was if she wanted a vaginal birth she should have attempted a VBAC with the previous (second) birth. Again, the patient was scheduled for a caesarean section and delivered her third baby.

With her fourth birth, the patient was determined to have a vaginal birth so she switched doctors and found a maternal specialist willing to deliver a baby vaginally after three caesarean sections. The birth plan in place for the fourth pregnancy and birth was a natural, VBAC3 in a hospital. The patient reported taking nutritional supplements such as prenatal vitamins, calcium, magnesium, and a multivitamin during her fourth pregnancy; however, when she began taking the previous mentioned supplements is unknown. She did not take any birthing classes during the pregnancy and was provided care by an obstetrician, doula, and a chiropractor. She indicated that she exercised one to three times per week throughout this pregnancy.

Examination

The new patient exam was performed and included thermography, static surface electromyography (SEMG), posture analysis, review of systems, and chiropractic exam. Posture evaluation revealed high right shoulder and anterior cervical shift. This indicates aberrant load on the spine causing mechanical dysfunction of the spine and body. The review of systems revealed no positive findings. Mild readings were found on thermography scan on the right of C7-T4 and T7, and moderate readings on the right of T5 and T8. On the SEMG mild asymmetry was found on the left of C1 at 25%, and T10 at 23%, moderate asymmetry on the left of C5 at 41%, and S1 at 47%. Mild asymmetry readings were also found on the right at T4 at 31% and T6 at 22%, and moderate asymmetry on the right of T2 at 54%, and L5 at 47%.

The chiropractic evaluation included motion and static palpation of the spine according to Diversified technique to assess for vertebral subluxation. The Webster Technique was also utilized to assess the patient for alignment of the pelvis. Upon completion of the exam, soft tissue changes and restricted motion was found at the levels of C1, T1, and Sacrum.

Instrumentation

Thermography was used as an objective measure for the analysis in determining the presence of vertebral subluxation and subsequent correction after a course of adjustments.[15] Traditionally utilized in order to measure function of the autonomic nervous system, thermography has been an integral component of the chiropractic profession.[15] In this case, thermography readings were determined by holding a hand held device with two infrared probes up the spine while a computer recorded the skin surface temperature on the left and right side of the spine. The handheld device records dermal blood flow as temperature; specifically, as a measurement of sympathetic nervous system activity, which controls microcirculation.[15-17] Heat should emanate equally bilaterally**.** This is demonstrated on a scan reading as equal length white bars that indicate a normal reading and the normal function of the nervous system free of neurological interference. A change in temperature of 0.5-1.0 degrees Celsius is considered abnormal.[17] Subluxation affects body temperature by affecting the autonomic nervous system with concomitant vasoconstriction and vasodilation.[15] When interpreting a thermal scan green is mild temperature change, blue is moderate temperature change, and red is severe temperature change from one side of the spine compared to the other.[17] The change in temperature from one side of the spine to the other is indicative of nerve interference to the nervous system, the severity and presence of vertebral subluxation.[15-17]

From the rolling thermal scan four different graphs or reports are generated from the Insight technology, a) Rolling thermal scan b) Amplitude graph, c) Normative graph, and d) Asymmetry graph.[17] The Amplitude graph b) reveals the amplitude (tension) among paraspinal electrical activity, noting areas of hyper or hypo-tonicity as it compares to a normal population. Green bars show mild hypertonicity (compared to the normal scan), blue bars convey moderate hypertonicity, red bars indicate high tonicity and yellow bars display readings below normal amplitude or hypotonicity.[17] The Normative graph c) establishes normal levels of electrical activity for reference point as it is compared to the general population. The Asymmetry graph d) depicts the amount of muscle pull from one side to another along the spine using the same color-coded system; green indicates mild asymmetry, blue indicates moderate asymmetry, and red indicates severe asymmetry. White triangles indicate normal.[17]

Static surface electromyography (static EMG) was another form of instrumentation that was used. This technology reads electrical activity (action potential) in order to measure paraspinal tension.[18] This imbalance can be monitored by static EMG technology. Alterations in electrical activity in the paraspinal muscles can shed light on the muscular changes linked to vertebral subluxations.[18] As such, chiropractors can use sEMG to establish a baseline for paraspinal electrical activity.[17-18]

Webster Technique

The ICPA definition for the Webster Technique is as follows: The Webster technique is a specific chiropractic analysis and Diversified adjustment.[19] The goal of the adjustment is to reduce the effects of subluxation and/or S/I joint dysfunction. In so doing neuro-mechanical function in the sacral/pelvic region is improved.[20-22] Performance of the Webster Technique involves analysis of the functional and spatial relationship of the bones of the pelvis, and manual correction of aberrant biomechanics through the employment of a light-force chiropractic adjustment of sacrum. The Webster Technique further involves analysis and relief of abdominal muscle tension or spasm. Both steps are utilized to relieve the potential musculoskeletal causes of pelvic dysfunction.[12,23]

Step 1 of the Webster Technique is finding the subluxation of the sacrum and adjusting it. During this procedure the patient is prone (lying with face down on the table) 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 observing restriction in movement during knee flexion. The side of relatively greater restriction is interpreted as the side of sacral posteriority.[8,24]

Step 2 of the procedure is known as myofascial trigger point release of the uterine ligament (also known as the round ligament). The round ligament plays a major role in uterine support as it limits posterior movement of the uterus, thus, maintaining the normal anterior uterine position. The presence of myofascial trigger point, as evidenced by a palpable nodule in the area of the round ligament is thought to further torque the uterus out of its proper juxtaposition. Myofascial trigger points are hyperirritable areas in a muscle or its fascia. The presence of trigger points indicates possible nutritional deficiencies to the area resulting from such things as postural and skeletal abnormalities, overloading, fatigue, and/or psychological stress. These trigger points prevent the full lengthening of the muscle or fascia resulting in pain upon palpation.[25] The patient is now instructed by the doctor to lay in a supine (lying with face up on the table) position. The side of interest (referred to as the round ligament contact) is opposite to the side of sacral posteriority. The intersection of two imaginary lines one from the umbilicus and directed approximately 45° inferior and lateral while the other directed from the anterior inferior iliac spine and directed 45° 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 5° in a clockwise or counterclockwise direction until the round ligament tension is felt to subside.[24,25]

Diversified Technique

Diversified technique was also used to assess the patient for vertebral subluxation. Diversified technique is a widely used chiropractic approach covering a variety of high velocity low amplitude manual thrust approaches to restore motion, proper alignment, and appropriate joint function of the spine.[26] There are listings associated with this technique that describe the direction of misalignment of the specific vertebrae causing the subluxation. Each segment is listed in relation to the segment below. This designation of the spatial orientation of one vertebra in relation to adjacent segments is called a listing.[27]

Intervention

The patient care included a combination of Diversified and Webster technique along with neuromuscular re-education with successful outcomes. After the new patient exam and chiropractic assessment, chiropractic care was initiated for 14 visits over a period of eight weeks. The patient began care during her last trimester of her pregnancy. The care plan included one reassessment prior to the due date for delivery of the baby. Each visit the patient was assessed using static palpation, motion palpation, and Webster technique and vertebral subluxation was adjusted according to Diversified and Webster technique.

On visits 1-13 the sacrum was restricted on the left side. Palpable tenderness and edema was found over the left sacroiliac joint. On visit 14 the patient was restricted on the right side. Palpable tenderness and edema was found over the right sacroiliac joint. The left side sacrum subluxation was adjusted in a prone lying position on a pelvic drop table. Specific pregnancy pillows were used to accommodate the stomach of the growing fetus. The adjustment is a high velocity, low amplitude thrust into sacrum with a posterior to anterior line of drive. The adjustment of sacrum with this Webster technique requires three thrusts utilizing the pelvic 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.

Adjustments were made at T5 for posteriority using a diversified bilateral transverse process contact and using a posterior to anterior and inferior to superior line of drive in the prone position for visits 3-5, 10, and 13. Using the same contact and line of drive T6 was adjusted on visits 6, 9, and 14 and T7 was adjusted on visits 8 and 11. Lumbar pelvis drop mechanism was used for Diversified adjustments at L1 for posteriority using a single hand contact and a posterior to anterior and inferior to superior line of drive. A vertebral subluxation was found at C1 on the right with muscle spasm, hypomobility, and end point tenderness on visit 5. In a supine lying position, C1 (atlas) was adjusted for right laterality and posteriority using a diversified supine cervical set with a line of drive posterior to anterior, right to left, and superior to inferior on visits 5 and 8. Neuromuscular re-education technique (NMR) was utilized on visit 1-12. This neuromuscular reeducation was used to improve movement, balance, coordination, kinesthetic sense, posture and/or proprioception for sitting and/or standing activities.

Outcomes

On the 14th visit the reassessment was completed to monitor the progress being made with chiropractic care. A post thermography scan was done to compare with the initial scan. Mild readings were found at T10 and T11 and severe readings were found at T7 and T8 (See figure 1). The post EMG asymmetry graph readings were mild at C1 (21% asymmetry) on the right and C7 (33% asymmetry) - T1 (30% asymmetry)

and T10 (25% asymmetry) on the left. Moderate asymmetry was at T4 (43% asymmetry) and L5 (61% asymmetry) on the right and T12 (41% asymmetry) - L1 (45% asymmetry) and L3 (65% asymmetry) on the left. There were improvements with each of these scans when comparing the pre and post scans (as illustrated in figures 1 and 2). The patients reported during this visit that discomfort decreased with rest and chiropractic care. As shown by this study and supported in the literature the patient had improvement with low back pain during her pregnancy through chiropractic care.[26,28,29]

The patient gave birth vaginally after being under chiropractic care for 14 weeks. During the labor the patient was given an epidural. The baby's heart rate dropped during labor and continued to drop during the delivery, so the baby was delivered with assisted forceps and the patient experienced vaginal tearing that required stitches. Nonetheless, the patient was able to deliver the baby vaginally after three previous caesarean births and 12 hours of labor.

Discussion

The art of obstetrics evolved with a view to making the birthing process safer for both mother and baby and to this end, the last century saw rapid institutionalization of birth. Although institutionalization of childbirth was observed in most developed countries, nowhere was it as emphatic as it was in North America in the 1940s where the number of hospital deliveries increased from 50% in 1938 to 99% in 1955. With institutionalization came “medicalization” and an increased utilization of caesarean section as the universal solution to all obstetric problems.[6] The rate of caesarean delivery has increased dramatically in the United States over the past four decades, perpetuated somewhat by the dictum “once a caesarean, always a caesarean.” In the US, 32.3% of all births are caesarean section. However, the myth that caesarean section is “safe” is being shattered by recent reports of increased adverse maternal and fetal outcomes associated with caesarean section. The rising caesarean section rates with no evident improvement in maternal and perinatal outcomes has resulted in an expected backlash with a significant lobby suggesting the return to “natural” and family-centered births.[3,6,30]

Evidence has shown that many women who have had a caesarean delivery can safely deliver vaginally in subsequent pregnancies. Advantages of this approach include avoidance of major surgery, lower risk of hemorrhage and infection, and shorter recovery periods. Most studies of women attempting, what the medical community calls a trial of labor after cesarean (TOLAC) have shown a 60 to 80 percent probability of VBAC. Therefore, it is important to make women aware of benefits of a VBAC, they should also be made aware of the potential risks giving them the opportunity to make an informed-decision about the birthing process they will have to experience. The risks associated with TOLAC are the same as those associated with elective repeat caesarean delivery: maternal hemorrhage, infection, operative injury, thromboembolism, hysterectomy, and death. Because most maternal morbidity during TOLAC occurs when repeat caesarean delivery becomes necessary, VBAC is associated with fewer complications than elective repeat caesarean delivery, and failed TOLAC is associated with more complications.[3]

Even though TOLAC has its own risks there are other medical interventions that can present more risk factors during the labor and delivery process. Although labor can be induced for maternal or fetal indications in women attempting TOLAC, physicians should counsel the patient that it increases risk of uterine rupture and decreases the possibility of successful VBAC. Furthermore, because some of the risks involved with TOLAC are severe such as uterine rupture, which can lead to fetal or maternal morbidity many facilities are more concerned about the risks rather than the benefits. Making it harder for women to find physicians and locations to deliver by way of VBAC as a preferred method of birth. A recent systematic review conducted for the National Institutes of Health found that VBAC is a reasonable option in most women, and that adverse outcomes are rare. However, women who wish to attempt VBAC face several obstacles in gaining access to physicians and facilities that offer TOLAC. Many hospitals no longer allow VBAC because they are not able to provide immediate access to surgeons and anesthesiologists, and some insurance carriers prohibit physicians from performing the procedure.[3]

Limitations

A limitation to this study is that there is limited research on the implications of chiropractic care and facilitation of a successful VBAC. Another limitation to this study was the patient was already in her third trimester when she initiated care. She also missed 4 visits during her care. Monitoring care under a longer period of the pregnancy would have aided in leading to a more conclusive study.

Conclusion

This case study shows improvement of symptoms of low back pain in a 39-year-old woman who was pregnant with her fourth child. She was able to have a VBAC3 after 9 weeks under subluxation-based chiropractic care. With growing interest of women and alternative birthing professionals to seek out natural vaginal births and steer from medical interventions and caesarean births this study, serves to strengthen the correlation between VBAC and chiropractic care.[31] The positive results presented in this case warrant more studies on the effectiveness of women under subluxation based chiropractic care and the facilitation of VBAC. Chiropractic is not intended to treat any condition but with removal of nerve interference or any disturbances to the nervous system, this allows the body to function at its optimal potential and may demonstrate strong correlation with vaginal births after caesarean.

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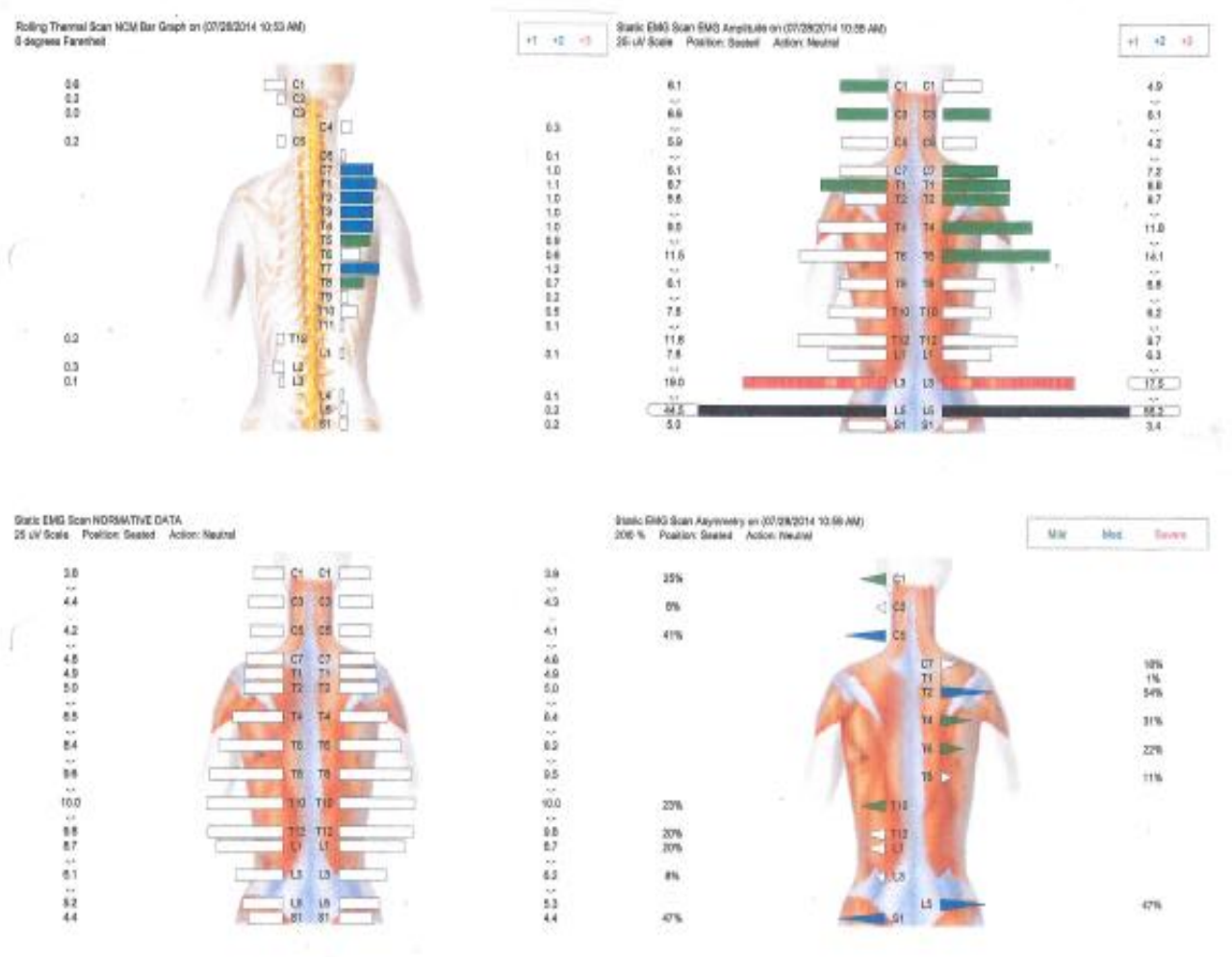

Figure 1: This figure is a pre-scan of the patient on her initial visit. a) Rolling thermal scan: The NeuralTherm Scanner measures paraspinal temperature differential. A significant difference in the temperature on each side of the spine could indicate a lack of autonomic responsiveness, an important indicator that something could be wrong with one or more organs (white= non-clinical difference in temperature, green= mild difference in temperature, blue bars convey moderate difference in temperature, and red bars convey severe difference in temperature). b) Amplitude: This scan reveals the amplitude (tension) among paraspinal electrical activity, noting areas of hyper or hypo-tonicity as it compares to a normal population. Green bars show mild elevation (compared to the normal scan), blue bars convey moderate elevation, red bars indicate high elevation and yellow bars display readings below normal amplitude. c) Normative graph: This establishes normal levels of electrical activity for reference during treatment. d) Asymmetry graph) This reading depicts the amount of muscle pull from one side to another along the spine using the same color-coded system. White triangles indicate normal.[13]

On the Rolling thermal scan a) the findings are as follows: C7-T4 and T7 show moderate temperature difference on the right side of the spine. T5 and T8 show mild temperature difference on the right side also. Both of these findings indicate areas of potential nerve interference. On the Amplitude graph b) C1 on the left, C3 bilaterally, C7 on the right, T1 bilaterally, T2-T6 on the right all show areas of mild hypertonicity, at L3 bilaterally there is severe hypertonicity, and at L5 bilaterally there is chronic hypertonicity as compared to that seen on the Normative graph c). In the Asymmetry graph d) there is mild asymmetry at C1 and T10 with greater tone on the left, moderate asymmetry at C5 and S1 with greater tone on the left, mild asymmetry at T4 and T6 with greater tone on the right, and moderate asymmetry at T2 and L5 with greater tone on the right.

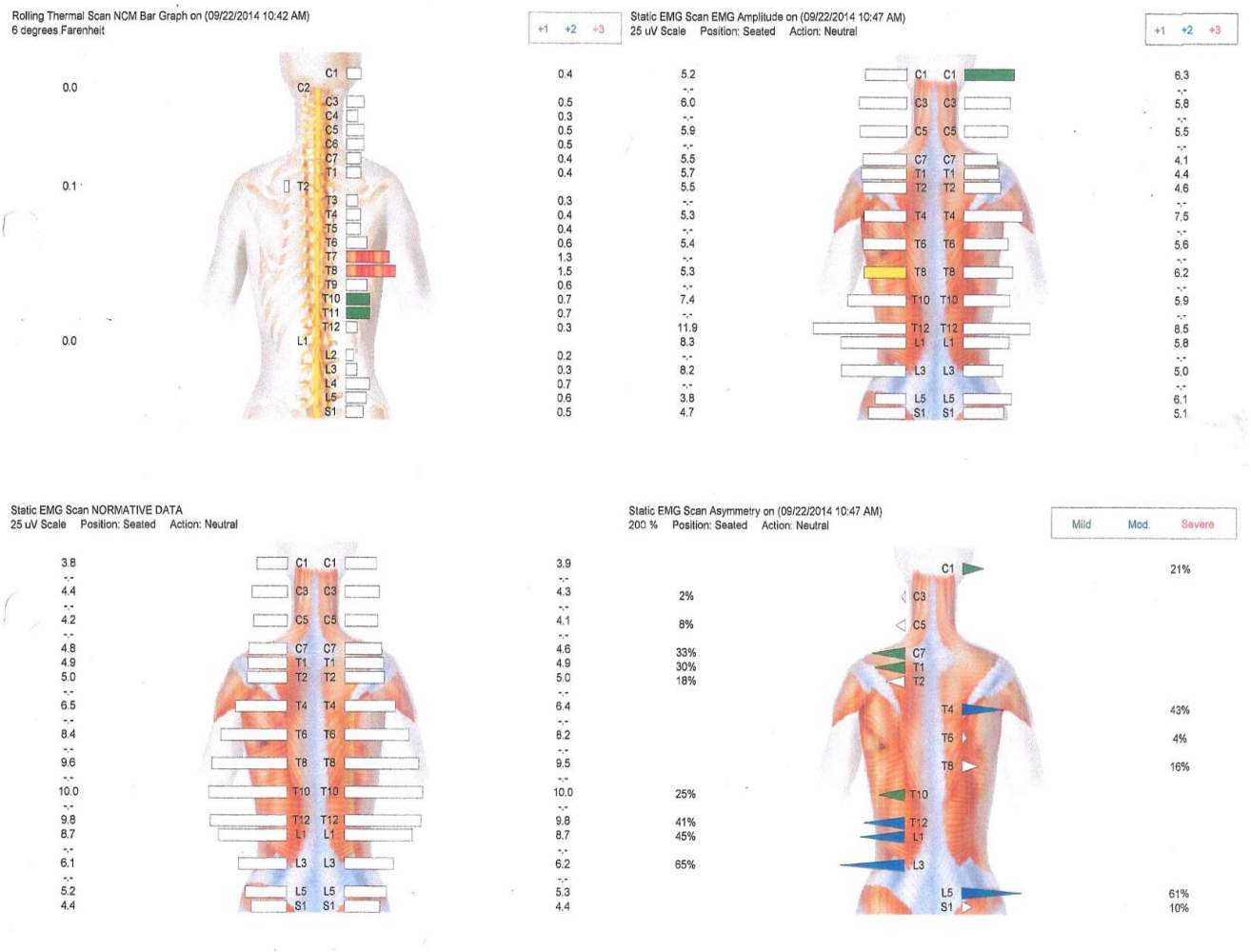

Figure 2: This figure is a post- scan of the patient on her 14th visit in the office. In the post scan of the patient there is objective data that shows improvement post chiropractic care. In the Thermal rolling scan there is mild temperature difference on the right at T10-T11 and severe temperature difference on the right at T7-T8. In the Amplitude graph b) there is only mild hypertonicity on the right at C1 as compared to normal and hypotonicity on the left at T8. In the Asymmetry graph d) there is mild asymmetry of C1 on the right, C7, T1 and T10 on the left with greater tone on the right at C1, left at C7, T1 and T10. There is moderate asymmetry at T4 and L5 on the right with greater tone on the right, and moderate asymmetry on the left at T12, L1, and L3 with greater tone on the left side of the spine.