

Conservative Treatment During Pregnancy:
A Chiropractic Approach

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ABSTRACT

OBJECTIVE: This paper reviews the knowledge chiropractors possess in regards to conservative care for the pregnant patient, much of which is untapped. It is important to relay to the reader the conservative care options that are available to the pregnant patient, and what the chiropractor can offer her and her baby during the gestational period and beyond.

Preventative and beneficial conservative treatments during nutrition are explored, such as nutrition and exercise. Finally, conservative treatment options for common ailments during pregnancy are explored.

DATA COLLECTION: A computer search using PubMed and MANTIS generated articles relevant to pregnancy, chiropractic treatment in pregnancy, nutrition during pregnancy, exercise during pregnancy and conservative treatments of pain in pregnancy. Referenced sources were identified from the individual searches and from accumulated review of pregnancy literature. PubMed and MANTIS searches generated over 70 articles on chiropractic care during pregnancy, over 13,400 for nutrition during pregnancy, and over 3,000 articles on exercise during pregnancy. Other topics such as acupuncture during pregnancy were reviewed as well.

CONCLUSIONS: Conservative care in pregnancy including chiropractic care, nutrition, and exercise is beneficial to the mother and fetus. Conservative care often is used as prevention for common pregnancy ailments, and also poses little to no side effects to the mother or the fetus. Utilization of conservative care during pregnancy can make the pregnancy a more pleasant experience, with fewer complications.

KEY INDEXING TERMS: *Chiropractic care and pregnancy, nutrition in pregnancy, exercise in pregnancy, conservative treatment in pregnancy.*

INTRODUCTION

Pregnancy is a unique condition that often presents with a variety of ailments and conditions. Common musculoskeletal complaints experienced in many women during pregnancy include low back pain, restless leg syndrome, sciatica, and carpal tunnel syndrome. This article provides a narrative review of conservative care during pregnancy and labor aiming to outline the role of the chiropractor in the management of the pregnant patient. ¹

During pregnancy, many physiological and endocrinological changes take place, which can affect the alignment of joints. This is a feature of pregnancy that usually cannot be aided by allopathic medicine, and is a unique feature to chiropractic care.

It has been reported that approximately 50% of all pregnant women suffer from low back pain during their pregnancy. The number increased to 75% of pregnant women experiencing low back pain during labor. ² Although it is common for women to experience low back pain at some point during pregnancy, many do not seek treatment. However, according to the 2010 Job Analysis of Chiropractic, chiropractors that were surveyed reported they rarely treat pregnant women. However, the pregnant patients who do seek care see improvement of their pain. ³ Moreover, in a clinical setting, improvement of low back pain has been witnessed by the narrator in pregnant patients who followed their treatment plans.

Other purposes of the article are to discuss the role nutrition plays in the pregnant patient, as well as exercises. The chiropractor is trained, and can be further trained to counsel patients on proper nutrition during pregnancy as well as the importance of exercise during this time.

Proper nutrition provided by the mother during pregnancy is important for the proper development of the fetus. According to Tzanetakou et al, maternal nutrition is important in neural tube development of the fetus.³ Exercises such as Kegels in the pubococcygeal muscles as well as various water exercises can increase the quality of life in the pregnant patient, as well as decrease ailments such as hemorrhoids.²⁻⁴

Discussion

Physiological Changes During Pregnancy

Many physiological changes take place during pregnancy. Pregnancy affects nearly every organ system in the patient. These physiological changes appear to be advantageous to the mother to accommodate the stresses of pregnancy, labor, and delivery.⁴ However, this article is aimed to view mainly musculoskeletal complaints and the benefits of exercise and nutrition during pregnancy. Maternal hormones increase, and have implications that are relevant to the chiropractic physician. Perhaps one of the most relevant hormones to the chiropractor during pregnancy is Relaxin. The hormone relaxin is one of the explanations for low back pain. This hormone is presented in ten times its normal concentration during pregnancy.⁵ Relaxin is beneficial to the mother in the sense that its purpose is to loosen the joints of the mother's body in order to accommodate the growing fetus. One of the principle joints the hormone relaxin affects is the pubic symphysis. The pubic symphysis is a nonsynovial diarthrodial joint. Relaxin allows the pubic symphysis to stretch during labor to allow the fetus to pass through the the birth canal.⁶ However, since the hormone is released endogenously, relaxin may cause aberrant motion in other joints in the body, therefore causing pain. Abnormal motion can be a feature of the low back and sacroiliac joints, causing

inflammation and pain. Case studies and specific chiropractic techniques will be highlighted.

Other Causes of Low Back Pain

The main cause of low back pain in the pregnant patient is the structural adaptation. Changing load distribution due to the growing fetus causes spinal dysfunction.⁷ Pressure on the internal organ such as the bladder, peritoneum and rectum can also cause referred back pain and muscular spasms. A typical gravid patient gains approximately 20-35 pounds. As her abdomen protrudes as the fetus grows, the lordosis of the lumbar spine typically increases. Moreover, gravid patients' center of gravity shifts forward, which can cause discomfort and even clumsiness. The normal weight gain of 25-35 pounds during pregnancy can cause sacroiliac joint dysfunction as well. Lastly, direct pressure on the lumbosacral and sciatic nerve by the fetus can cause discomfort. This may all be further impacted if the gravid patient has experienced back pain previously. Any of these factors combined or singly could lead a patient to seek chiropractic care during pregnancy.

Clinical Studies on Chiropractic Care During Pregnancy

According to Shaw, 75% of pregnant patients experiencing discomfort during pregnancy that sought chiropractic care experienced relief from that discomfort.⁸ Moreover, a study conducted by Kruse et al. found that chiropractic treatment of a pregnant patient aided in the relief of lumbar radiculopathy.⁹ In this study, a gravid patient in her second trimester had "severe pain in her lower back that radiated to both hips bilaterally and her right leg."⁹ The chiropractic technique utilized in this experiment was Cox-Flexion Distraction. The patient was treated in a side-lying position, and was

seen for eight visits. The patient experienced relief from her pain. It was also noted that up to 90% of pregnant patients experienced low back and/ or pelvic pain at some point during their pregnancy. ¹⁰

The next study is a three year cohort study in which 799 pregnant women were followed during pregnancy and three years post-partum. Out of these 799 women, 231 experienced back pain during their pregnancy, and 41 women reported pain three years later (11). Chiropractic care was utilized to ease the discomfort experienced by the women in this study, and many found relief from care.

Another chiropractic technique, Active Release Technique, was found to aid a 20-week pregnant patient with her groin pain (12). This techniques was utilized as a conservative approach to the treatment of her discomfort. The patient was treated with Active Release Technique for three weeks, given home exercises, patient education was employed, as well as ergonomic training. After these three weeks of utilizing these conservative chiropractic treatments, her groin pain was gone (11).

Active Release Technique can also be utilized to treat meralgia paresthetica. Meralgia paresthetica is a common condition found in gravid patients. It is characterized as tingling, numbness, and burning sensations on the lateral aspect of the thigh. It is caused by compression of the lateral femoral cutaneous nerve. In a case study of a 22 year old patient in week 16 of pregnancy, Active Release Technique was applied to the Quadratus Lumborum muscles as well as the fixation of the right sacroiliac joint. The patient was supplemented with at home exercises. Aftr six treatments, the patient was fully relieved of back pain, and experienced a 90% reduction

in her thigh pain (12). Furthermore, the pain was completely resolved in a one-year post follow up.

A cohort study conducted by Murphy, et al. showed that pregnancy related lumbopelvic pain can be relieved with chiropractic care and physical therapy. Data on 115 patients experiencing lumbopelvic pain was collected. A disability questionnaire was used before and after treatment. Out of these 115 gravid patient, 57 (73%) experienced relief from their pain with chiropractic treatment.¹³ This study also revealed that women experiencing lumbopelvic pain during pregnancy were more likely to have pain in this area after delivery.¹⁴ If treated prior to delivery, it is less likely to occur during labor.

A compilation study by Stuber and Smith¹⁵ showed that out of six studies reviewed, the results were associated with improved outcomes of low back pain with chiropractic care.

Another complication of pregnancy is intra-uterine constraint. This can be responsible for a number of structural defects of the craniofacial and peripheral skeleton.¹⁶ This can vary from plagiocephaly, micrognathia, congenital hip dislocation, transverse lie, and talipes equinovarus. Furthermore, intra-uterine constraint can cause defect in the long bones of the skeleton. A chiropractic technique that can aid in this complication of pregnancy is the Webster Technique. This technique is utilized as a supplement to Logan Basic Technique. It is found that posterior sacrum and a contracted round ligament on the opposite side can lead to torsion of the uterus.¹⁷ This can severely restrict fetal movement. First, the fixated sacroiliac joint must be corrected by using the sacral unlock method. Next, the patient is instructed to lie prone, while the

round ligament is relaxed by the doctor. In a study by Dr. Pistolese, it was found that 82% of patients with intra-uterine constraint were relieved by Webster Technique.¹⁸ When the fetus is experiencing intra-uterine constraint, Webster Technique can be employed. “When successful, the Webster Technique avoids the cost and/or risks of external cephalic version cesarean section, or vaginal trial of breech. In view of these findings, the Webster Technique deserves serious consideration in the health care management of expectant mothers exhibiting adverse fetal presentation.” (Pistolese, 2001.)

In summary, complementary and alternative medicine can aid in pain experienced in expectant mothers. Many women are open to the idea of exploring Complementary and Alternative Medicine (CAM) during pregnancy. Wang, et al reported that 61% of women seek CAM care for low back pain. It was reported that 61% seek massage, 44.6% seek acupuncture therapy, 40.6% sought yoga, and 36.6% seek chiropractic care.¹⁹ This illustrates that chiropractic must be more effective in patient education. The knowledge and the proof are there. It is important to relay this message to the public. In the study by Allaire et al., it was reported that 57.3% of midwives utilized chiropractic as a CAM option.²⁰

Exercise During Pregnancy

Exercising during pregnancy is not only safe, it is encouraged. Exercising safely during pregnancy can strengthen muscles, and reduce some of the musculoskeletal complaints often experienced in expectant mothers. It can also aid in the strenuous work and endurance experienced during labor. The ACA recommends exercising three times at least, for at least twenty minutes. benefits of exercise during pregnancy include

relief from musculoskeletal pain, constipation, lung and placental gas transport, as well as fetal growth and reduced maternal weight gain. ²¹

The baby benefits from maternal exercise as well. Babies whose mothers exercised while pregnant are tougher and adapt better to life outside the womb. ²¹ According to Clapp, exercise is also beneficial for fertility as well.

Another important benefit to exercise during pregnancy is emotional well being. According to Diana Lynn Barnes, PsyD, founder of the Center for Postpartum Health, many pregnant women go through a form of depression. Exercise can reduce the depression hormone cortisol ²¹, and help pregnant women avoid further depression. Depression in expectant mothers can lead to low birth weight, and preterm birth. Exercise can reduce depression, help one overcome stress, reduce pregnancy related forgetfulness, as well as aid in the exertion of labor. ²² Emerging evidence suggests that psychological factors such as depression, anxiety, catastrophizing, fear avoidance, self-efficacy and coping style are important aspects which should be considered in the treatment of pain, particularly persistent pain. More research is needed for treatment plans which address central sensitization in persistent low back pain conditions. Treatment options aimed at combining a variety of approaches which address the physiological and pathological processes involved with central sensitization should be considered. Moreover, chiropractors and their philosophy of natural methods of health can help mothers who suffer from depression. After a conversation with an obstetrician, it was reported that a quarter of his pregnant patients were on a mood- altering drug such as Zoloft, to treat depression. Medications such as these pose a threat to the fetus, including pulmonary hypertension, withdrawals from the medication upon birth, and

even cleft palate in some instances. ²⁹ Seeking alternative solutions can help save both the mother and fetus from these risks.

One study found that specific water exercises can improve the quality of life during pregnancy. ²³ The study observed sedentary pregnant women less than 20 weeks pregnant, engaging in three water exercise classes per week. It was found that “the great majority of participants considered that the practice of water aerobics had benefited them in some way”. ²³

Nutrition in Pregnancy:

Nutrition before during and after the gestation of a fetus is extremely crucial. Prenatal vitamins during this time are important as well. Additionally, they are proven to reduce the risk of Autism when taken within the first month of pregnancy. ²⁴ It is important for pregnant women to receive enough folic acid during this time, as it is crucial in development of the neural tube of the embryo. ²⁵ Supplementation with at least 400 micrograms of folic acid reduces the risk of neural defects in the embryo, such as spina bifida. ²⁶ Protein is essential to aid in all the new cell synthesis of the fetus. A pregnant woman should consume approximately 300-500 more calories daily to accommodate the growing fetus and its needs. The expectant patient experiences changes in almost every organ system including the cardiovascular and endocrine system. Calcium and protein are extremely important in maternal and fetal nutrition.

According to Symonds and Ramsay, there is considerable evidence that “poor fetal growth can influence the phenotype of adults.” ²⁷ That is adults may have

“memories” of fetal exposure, and may give a certain propensity to disorders such as Metabolic syndrome, diabetes, and insulin resistance. Symonds and Ramsay also point out that maternal nutrition during pregnancy is important to have a healthy baby. Preterm infants, infants described as being born before 37 weeks gestation, have more nutritional deficits and need than do full term infants. Prematurity poses the greatest problem for nutrients which accumulation is predominantly in the third trimester. According to Ramsay, 90% of the bone forming minerals such as phosphorus and calcium are acquired during the last 12 weeks of gestation. Preterm infants can have other serious health problems, and some are in part due to poor nutrition as a fetus. Some of these complications include breathing difficulties, and even death. In instances just as these, a stress can be placed on the infant and mother, as well as increased cost due to admission to neonatal care units. However, it has not gone unnoticed that in some instances, preterm birth cannot be avoided. In these instances, medical help is essential and appreciated.

The chiropractic physician can aid the gravid patient in other ways as well. Learning how, when and what to eat is important not only for maternal and fetal nutrition and growth, but also maternal comfort. Due to the growing fetus, many organs are “displaced” for a time during pregnancy. This can cause discomfort and nausea in the expectant patient. The chiropractor can be a nutritional counselor, advising her to consume 6 small meals and snacks a day, as opposed to 3 large ones.²⁸ Some chiropractors are more adept to this branch of care than others. However, all chiropractors are equipped to give nutritional advice.

Other Popular Conservative Treatments: Acupuncture

Acupuncture therapy is a conservative way to manage a wide variety of ailments. The technique has been used for thousands of years but has not had the research validation until recently. Current imaging such as functional MRI has been able to prove the beneficial effects of acupuncture. Pregnant women often want to try conservative measures to remedy conditions they may deal with. One of the most common reasons to use acupuncture during pregnancy is to manage pain. Research has shown that acupuncture activates the body's endogenous analgesic system. "Recent data suggest that acupuncture triggers a sequence of events involving the release of endogenous opioid-like substances, including enkephalin, β -endorphin, and endomorphin, that modulate pain signals processed along the pathway."²⁹ Activation of the body's descending inhibitory pathway can help shut the signal for pain before it ascends the spinal cord. A study done by Wang et. Al. examined the efficacy of auricular acupuncture in pregnant females with pelvic or low back pain. The study divided the women into three groups; one receiving acupuncture treatment, one sham acupuncture, and a control group who received no treatment. The outcome of the treatment was based on pain visual analog scales and disability questionnaires. The results showed, "The participants in the acupuncture group reported a significant reduction of pain and improvement of functional status as compared with those in the sham acupuncture and control groups."³⁰ Acupuncture not only can manage pain during pregnancy but can actually help to induce labor. For certain conditions labor must be induced to help to avoid complications. Lim, Wilkinson, Wong, and Cheng performed a meta-analysis of current literature to analyze acupuncture's ability to induce labor. The group analyzed

ten studies which were selected based on inclusion/exclusion criteria. They state, Ten (10) studies on labor induction were identified. The duration of labor as a result of acupuncture treatment ranged from 10 hours 20 minutes to 29.1 hours. All of the studies demonstrated labor induction by acupuncture treatment.”³¹ The therapeutic effects of acupuncture have great implications in conservative management of pregnancy. Although there is not an abundance of research available, there has been an emergence of both clinical and empirical support for the practice.

Conclusion

Medical and health care is essential during pregnancy. Pregnancy is a unique and miraculous time, and is a period in which the needs of the patient vary greatly.

Common ailments of the pregnant patient include pain of the lumbar spine and sacroiliac

joints, as well as other musculoskeletal discomforts. The gravid patient also needs care and counseling in regards to proper nutrition, exercise prescription, and emotional well being. The chiropractic physician can encompass all of these things and more.

In summary, chiropractors in general should be made more aware of the benefits of chiropractic and conservative care for the gravid patient. It is still our job to relay this information to the public. We as chiropractors serve a unique purpose that is incredibly helpful with treating conditions such as pain, nutrition and exercise counseling, as well as fertility and emotional well being counselors. Chiropractors can serve as pain relief providers in a time where pain and discomfort due to altered body mechanics is abundant. Moreover, chiropractors are knowledgeable in the realm of exercise to reduce pain, and exercise is crucial for pregnant women. It can ease common discomforts

associated with pregnancy, as well as relieve constipation, and boost mood, among many other things. It is important to teach the patient proper exercise for her unique condition. Also, chiropractors can serve a excellent nutritional counseling. This is an area many Americans are lacking at any rate, and nutrition is of the utmost importance to the pregnant patient and her developing baby. Chiropractors can offer advice on other pregnancy-related issues as well; infertility, acupuncture, speed and ease of delivery, and post-partum care. This is a corner unique to chiropractors. No other health professional can offer all things for the pregnant patient, even their obstetrician. This is an area that is somewhat lacking in Chiropractic Colleges across the country. Students learn some, but often times must resort to weekend seminars and the like. It is noted by the narrator that medical care is necessary and extremely helpful in some instances. However, chiropractic can be a portal of energy or co-management strategy, and also aid in cutting medical costs, as well as the other benefits listed in this paper.

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