

CASE STUDY

Successful Pregnancy Following Diagnosis of Infertility And Miscarriage: A Chiropractic Case Report

Leslie Bedell, DC

ABSTRACT

Objective: This case describes the chiropractic care of a woman with a history of infertility and miscarriage.

Clinical Features: A 27 year old female presented for chiropractic care to improve her overall health, in the hope that she may ultimately be able to have a child. In the previous year she had suffered 2 miscarriages, and had been anovulatory for 9 months. She was under medical treatment for infertility and ulcerative colitis, and followed a restrictive diet. Prior to attempting to become pregnant, she had been on the birth control pill for 7 years.

Chiropractic Care and Outcome: Examination protocols of Torque Release Technique™ (TRT) were utilized to detect vertebral subluxations. Adjustments were applied with the Integrator instrument; the initial visit schedule was twice weekly

for 30 days, and then one visit per week for an additional 30 days. Other therapies used included: craniosacral therapy, relaxation exercises, stretching and audio tapes. After 60 days of care, a normal ovulatory cycle occurred, and she became pregnant after her second normal cycle.

Conclusion: This case report of a woman with a history of infertility and miscarriage contributes to the growing body of literature on the response to chiropractic care among infertile women. The article discusses the impact of stress on a woman's nervous system, and the possible associated changes in reproductive health. Further research is called for to evaluate the safety, cost, and effectiveness of chiropractic care in women's health.

Key words: *chiropractic, Torque Release Technique (TRT), vertebral subluxation, infertility, miscarriage*

Introduction

Currently, infertility is one of the greatest concerns of child-bearing women in the Western world. The ability to conceive and bear children can profoundly affect the way a woman feels about herself on a very deep level. The pioneering work of Dr. Alice Domar has clearly documented that women who've been diagnosed as infertile, are twice as likely to be depressed as a control group, and that this depression peaks about two years after they start trying to get pregnant.¹

Dr. Joseph Mercola, M.D., reports that infertility currently affects 6.1 million Americans. He states that the most important factors affecting a woman's fertility are diet, including allergies and hypersensitivities to certain foods, insulin resistance, sluggish thyroid function, improper exercise and adrenal impairment due to excessive stress.²

Increasing evidence points to environmental toxins and chemicals, including pesticides, as causative agents in the increasing problem of infertility and miscarriage. Dr. Baranski, from the Institute of Occupation Medicine in Denmark says

“Risk of infertility increased in females who reported exposures to textile dyes, dry cleaning chemicals, noise, lead, mercury and cadmium. There was a significant risk of increased time to conception among women exposed to anti-rust agents, welding, plastic manufacturing, lead, mercury, cadmium, or anesthetic agents. There was also an increased risk of delay to conception following male exposure to textile dyes, plastic manufacturing, and welding. Those who unpacked or handled antibiotics had a significant association with delayed pregnancy of at least 12 months.”³

The infertility challenges the public is struggling with are increasingly related to environmental factors. The story of PCB's (polychlorinated biphenyls) and how they have spread throughout the planet and into the body fat of almost every living creature is one of the most fascinating and instructive chapters in the history of the era of synthetic chemicals. Of the fifty-one synthetic chemicals that have now been identified as hormone disruptors, at least half, including PCB's, are “persistent” products in that they resist natural processes of decay that render them harmless. These long-lived chemicals will be a legacy and

Dr. Leslie Bedell, Private Practice, agapechiro@msn.com
P.O. Box 1219, North Bend, WA 98045

a continuing hazard to the unborn for years, decades, or in the case of some PCB's, several centuries.⁴

In addition to synthetic hormones present in the environment, hormones have been manufactured for use in the medical treatment of both pregnancy prevention and infertility. The most common form of birth control for women in their child-bearing years is the synthetic birth control pill. Dr. Joseph Pizzorno, a naturopathic physician and midwife, reported that he saw many women who had been on birth control pills for long periods whose pituitary gland was not functioning well enough to promote ovarian stimulation and a viable ovum.⁵

Barbara Seaman, long term advocate for women, concluded that the chemicals in the pill suppress the natural production of hormones, increase the risk of sexually transmitted diseases especially chlamydia, and upset the assimilation of nutrients.⁶ All these factors can prevent a woman from becoming pregnant.

The most common medical treatments for infertility and repeated miscarriages include synthetic hormone treatments and surgery after invasive testing for ovarian cysts and endometriosis. Women are looked at as "hormone factories" where something has gone wrong and the treatment is symptom-based, designed to alter hormonal function rather than restore it.

There are over 260 clinics practicing some form of laboratory in vitro fertilization, which is now called Assisted Reproductive Technology or ART.⁷

Fertility Clinics use drugs such as Perganol and Clomid, which cause the ovaries to produce many eggs, prior to attempting in vitro fertilization. Some of the protocols cost up to \$30,000.00 per menstrual cycle. Women who are desperate to conceive can be left physically and emotionally bankrupt after such treatments.⁸

Dr. Christiane Northrup, co-founder of the Women to Women health center in Yarmouth, Maine, reports in her book, *Women's Bodies, Women's Wisdom*, that one doctor working as a reproductive specialist cites a success rate of only 17% during embryo transplant to the females. She adds that now, with the advent of so many pregnancies from ovum donors and fertility drug-induced multiple pregnancies requiring selective "fetal reduction" to get rid of the excess babies, we've entered completely uncharted territory with potentially devastating consequences.⁹

Expensive fertility treatments resulted in only a 6% point improvement in achieving pregnancy over "infertile" couples who just "kept trying." In a study of 1,145 couples who had been diagnosed as infertile, half were treated with reproductive measures. After a two to seven year follow-up, pregnancies occurred in 41% of treated couples and 35% of the untreated couples.¹⁰

Women who have had surgeries often end up with excessive scarring of their internal tissues, causing adhesions of fibrous bands that block the movement of the internal pelvic organs. They are excruciatingly painful and usually require more surgery to remove. This excessive scarring can lead to the inability to conceive due to the lack of motility in the fallopian tubes pushing the ovum into the uterus.

This article serves to contribute to the chiropractic literature which discusses the relationship between the response to chiro-

practic and improved reproductive function. All couples affected by infertility can improve their chances of conception, by ensuring that their nervous systems are able to effectively integrate information chemically, physically and emotionally between the brain and reproductive organs. It is essential to have a healthy nervous system, functioning without interference, in order to cope with environmental and physical stressors. Chiropractic care can offer valuable benefits to couples faced with the challenges of infertility.

Case Report

This 27 year-old white female practice member presented with a history of 2 miscarriages during the previous year and a medical diagnosis of ulcerative colitis. She had taken the birth control pill for 7 years prior to attempting pregnancy. Doctors indicated she had been anovulatory for 9 months, and had prescribed Clomid and synthetic progesterone prior to her 2 miscarriages.

Her primary concern was to improve the overall function of her body in order to prevent miscarriage and obtain relief from her colitis symptoms. She had been following a strict diet for her colitis for several months and had also been taking cortisone. She was on a low dosage of prednisone at the time of beginning care in my office.

The patient was evaluated for subluxations utilizing the Torque Release and Activator techniques. Dr. Holder, developer of the Torque Release Technique, describes the definition of a subluxation as: "A condition of one or more spinal segments that have lost their ability to move freely or completely throughout their range of rotation that physically interfere with the spinal cord and or spinal nerves and their function."

His research in 1994 showed that all vertebrates have a brain reward system utilizing opiate receptor sites, and established the vertebral subluxation complex as the hallmark of insult of the vertebrate's ability to express a state of well-being to its fullest potential. Therefore, Torque Release Technique views the subluxation as a "separation from wholeness".

Holder describes the causes of subluxation as: Imbalance between external incoming forces and internal resistive forces offer an exaggerated perception of stress causing inappropriately excessive internal resistive response. The categories of one cause include 1) physical (trauma, thermal, electromagnetic, gravity) 2) chemical (nutritional, toxic, mood altering) 3) mental (perceived threats of stress, emotional) 4) genetic.

The principles of the Torque Release Technique model are based on the original precepts and findings put forth in the two textbooks written by R.W. Stephenson, *The Chiropractic Textbook* and *The Art of Chiropractic*.

Initial evaluation for both these chiropractic techniques includes observation of leg length discrepancies with the patient in the prone position. This is termed functional leg length inequality in Torque Release technique and pelvic deficiency in Activator chiropractic technique. Unequal leg length is described as the expression of the body's fixated pattern of unadaptability and indicates lateral or posterior rotated subluxation.

Torque Release Technique Indicators

In addition to functional leg length inequality, Torque Release technique utilizes the following findings as indicators to identify subluxations:

Palpation

The process of gathering information through touch. Four types:

1. Scanning palpation
2. Tissue palpation
3. Intersegmental palpation
4. Motion palpation

The cranio-spinal meningeal functional unit is evaluated as a whole to observe energy imbalances including abnormal heat or cold. Vertebral segments are checked for rotational movement as well as anterior and posterior misalignments.

Abductor Tendency/Adductor Resistance

A muscle which upon contraction draws apart and away from median plane of the body, i.e. the action of the tensor fascia lata. The tendency of one or both legs to remain in abduction and resist being moved into adduction or together indicates C2 subluxation – usually on the side of greater resistance. The resistance is graded on a 0-5 scale with 0=no resistance and 5=maximum resistance to movement.

Foot flare (Inversion/Eversion)

Toe-in or Toe-out – can be right, left or both observed in the prone position; indicates torsion/distortion/tension in the spinal cord and meninges. This is associated with anterior rotation of spinal segments with dural attachments.

Sphenoid, Occiput, C1, C2, C5, sacrum (S2,3,4) and coccyx anterior rotation is associated with traction of the meninges. Occiput has dural attachment around the entire foramen magnum.

Foot pronation/supination

The foot resists against direction of supination and/or pronation and indicates a problem with the position of the trochanter. The resistance is rated on a 0=5 scale as above.

Heel tension (Achilles)

Indicates spinal cord torsion/distortion/tension and any subluxation, posteriority, superiority, or inferiority. Spinal cord tension at C2, C5, sacrum, and coccyx is most likely. Resistance is rated on a 0-5 scale.

Abnormal breathing patterns

Observation of patient's breathing pattern, looking for slow, rhythmic and full movement occurring in a wave. Normal breathing is not compartmentalized. An observable decrease or incomplete movement alters movement throughout the Cranio-Spinal meningeal functional unit.

Inappropriate sustained patterns of paraspinal contractions

Is evaluated through surface EMG and indicates dominant emotional response patterns, sympathetic nervous system, i.e. fight or flight syndrome.

Congestive tissue tone

Observation of abnormal fullness or congestion primarily in non-muscle tissue, i.e. over the subcutaneous tissue over anterior neck muscles and the kidney area. Indicates trapped dominant patterns as a sequela to toxic chemicals, drugs, etc.

Postural faults (standing, sitting, prone)

Indicates stuck inappropriate pattern of spatial gravitational adaptation.

Cervical syndrome test

A screening test for posterior rotation of C1 or C5 with or without laterality. A leg length inequality (short leg) is required prior to this test being performed.

Evaluate in a prone position. The side that is down when head is turned and legs even is the side of posterior rotation.

The legs must remain even to the exact millimeter and not lengthen or shorten again after a few seconds.

Bilateral Cervical Syndrome Test

When the short leg changes back and forth to long and short as the head is turned from left to right and back again. In other words, the legs remain uneven. Repeat this action several times to verify that the legs are switching back and forth. A finger pressure test should be done first at coccyx, then occiput, C5, atlas or T6. The posterior contact on the spinous process, the tubercle, or E.O.P. with a line of drive inferior to superior, and posterior to anterior will cause the legs to remain even, thus determining which segment to adjust with the instrument. Also pressure test for right or left torque.

Derifield test

This is a screening test for the pubic subluxation, anterior-inferior sacral base, trochanter, posterior inferior ilium. Must have a short leg prior to performing test in the prone position and must be a complete crossover (switch from initial short leg in prone to that leg lengthening within the 90 degrees of flexion of the knees.

Abnormal heat/energy radiation from the body

Utilizing various heat-sensing instruments such as the Thermograph, neurocalometer, etc. Indicates incomplete adaptation and inappropriate stuck patterns.

Torque Release Technique is also different from the Activator technique in that it is described as “non-linear”. The same segments are never adjusted in the same vector or in the same order, any three visits in a row, and only 1, 2 or 3 segments are adjusted on any one visit. Leg testing and pressure testing are utilized to determine line of correction, subluxation, and the presence of torque. The practice member is encouraged to allow time to process the changes in their body following the adjustments given.

Indicators and Care Relevant to This Case

This practice member's initial Chiropractic examination, utilizing the above indicators, revealed postural distortions of a head tilt to the right, and taut and tender muscle fibers along the left paravertebral musculature from the levels of T12- sacrum. The right hip was rotated anterior, indicating pelvic torsion.

Palpation revealed edema and tenderness with increased heat over the left side of the medial sacral border. There was noticeable inversion of the left foot, while in the prone position.

Congestive tissue tone was evident over the left flank region.

The patient displayed a one-inch left leg discrepancy, which I will refer to as a “pelvic deficiency”. Leg length became equal with the patient's head rotated to the right side, indicating a

positive cervical syndrome on the left side and subluxation of one of the cervical vertebra. A mild force with alternating clockwise and counterclockwise rotation was performed with finger pressure into the 1st and 2nd cervical vertebra on the left side to determine if leg length equality could be obtained. Following the counter-clockwise force at the 1st cervical vertebra, the leg lengths became equal (balanced), indicating ease of tension in the dural attachments along the left side of the spinal column and correction of the vertebral subluxation. An adjustment (specific force applied to a vertebra to release the flow of vital life force along the nerve pathway) was given utilizing the Integrator instrument. This instrument was developed by Dr. Holder, the developer of Torque Release Technique. It is a spring-loaded, hand-held instrument, which delivers a force utilizing, torque and re-coil at 1/10,000 sec, similar to a toggle-recoil hands adjustment.¹¹ The instrument is set with a pre-loaded tension so that when held lightly against the skin, the specific force is delivered in an exact line of drive to correct the misaligned vertebra. In this case, the correction was made at the level of C1, from left to right, with a left torque.

A similar evaluation was performed along the medial sacral border on the left side. A noticeable evening of the legs was noted after applying a light finger pressure medially at the 3rd sacral level, also indicating subluxation. The Integrator was preset and a specific force (adjustment) was applied medially, from left to right, at the 3rd sacral level.

Her findings and diagnosed subluxations for 90 days are outlined in Table 1 on page 5.

Several of the primary indicators were reduced and an improvement in breathing and postural patterns were noted.

In addition to having her subluxations removed, this patient received monitoring and assessment of her nutritional, emotional, and physical stresses. She had been on a restricted diet for her colitis symptoms. It was recommended that she increase her protein intake and add essential fatty acids in the form of fish or flax seed oil to her diet. She was encouraged to increase her soluble fiber and to eat more times during the day. She had already eliminated all refined carbohydrates from her diet as well as caffeine and alcohol.

During the course of her Chiropractic care, this practice member became more open to making changes in her self-image and was willing to utilize relaxation techniques to become more connected to her body. She was tired of being sick and began asking for positive tools to gain increasing awareness of ways to improve her self-care. She was given meditation/relaxation tapes and instructed to take 30 minutes twice a day to slow down her pace and listen to them. She had indicated on her initial Health Status Questionnaire, which evaluates her assessment of quality of life issues, that she had difficulty relaxing and often experienced negative and critical feelings about herself. She stated that these negative feelings about herself had increased since her miscarriages. The relaxation exercises were a method to help her replace the "critical tapes" in her head with positive, reinforcing messages about her self-worth.

Prior to beginning chiropractic care, her constant fatigue and low energy had been making her feel anxious and fearful about her ability to perform in her job and marriage. The increase in energy she experienced after beginning chiropractic

care encouraged her to become more proactive and look for new ways to improve her quality of life.

During her chiropractic care, this practice member talked about her fears, and often times, let her tears flow freely. A conscious effort was made to connect with her emotions, validate her feelings, and give her permission to release them from her body. She would report afterwards that she felt less constricted and more relaxed, and also began sleeping better at night.

Craniosacral work was performed on this practice member during her chiropractic care, evaluating for restrictions and releasing them using the Upledger protocol. Dr. John Upledger is an osteopathic physician who is director of the Upledger Institute, which trains healthcare providers in this approach. This protocol is a light-touch therapy that addresses restrictions in the craniosacral system, the membranes and fascia that surround the brain and spinal cord.¹² During this time, this practice member was given exercises to do at night, which incorporated stretches and abdominal breathing techniques. She was also instructed on the importance of proper postures and biomechanics while awake and asleep. After 30 days of care, she began to feel more energy, more optimistic, and displayed fewer clinical findings (see Table 1).

After 45 days, this practice member was off her steroid drugs and had ovulated one cycle. After 60 days, she underwent hernia surgery but recovered quickly. Her second menstrual cycle was normal. Ninety days after beginning chiropractic care, she discovered she was pregnant.

Her second Health Status Questionnaire was done after 90 days of care. She reported a reduction of fatigue, critical feelings about herself, moodiness, tension and stress from "regularly" to "rarely." She showed an increase of relaxation, well-being, positive feelings about herself, interest in maintaining a healthy lifestyle from "slight" to "considerable". She rated her overall quality of life as "pleased" and "delighted" in all areas.

Discussion

Approximately one in every six to ten couples has a problem with infertility. About 40% of the problems are related to a male factor and 60% percent to a female factor. Statistics show that sperm counts have been gradually falling over the past century.¹³ Although fertility is affected by many different factors, the medical profession finds that even after testing and treatment, up to 20% of the causes are unknown. The psychological component related to the "mind-body" connection has been shown to be a critical element in treating this problem and warrants consideration of utilizing a natural approach such as chiropractic, to detect and correct any interference to this system. Authors such as Christiane Northrup, M.D. and Caroline Myss, Ph.D. have found a link between women who are successful in their careers, often pouring their energies into work commitments, and their inability to conceive.

Niravi Payne, author of *The Whole Person Fertility Program*, has devoted her life's work to developing a program that empowers couples to conceive children.¹⁴ With much success, she has helped couples overcome the cultural, social, and emotional problems associated with the Baby Boomer generation that she feels are inhibiting their ability to bear children.

Table 1

Date 2002	Leg	Palp	Ab/ad	Feet	H.T.	M.G.	Breath	Posture	Cerv.	Derif.	Tissue	Sublux. Adjust.
1/16/	1"lt	Lt. Sac. heat	0	Inv.. Lt.	Lt.2	Lt.c/d Lt.sac.	Min.	Head lt. Sac.ant. Rt.	Pos. Left	None	Left Flank	C1 lt S3 lt. Occ.rt.
1/18	1"lt	S	0	S	S	S	S	S	S	S	S	S
1/21	1"lt	Dec	Lt.2	S	Lt.1	S	S	S	0	S	Dec.	C2 lt. S1 rt.
1/28	1"lt	S	Lt.2	S	Lt.1	↓sac.	S	S	Pos. Left	S	S	C5 lt S1 lt.
1/31	1"lt	Lt. sac Edema	Lt.2	S	Lt.1	Lt.c/d	S	S	S	S	S	C1 lt. S1 lt.
2/02	1"lt	↓edem	Lt.2	S	Lt.2	Lt.c/d Lt.l/s	S	S	S	S	Lt. Flank	C2 lt. S1 lt.
2/04	1"lt	WNL	Lt 2	S	Lt.1	Lt l/s	S	S	0	S	S	C6 lt. Rt.S2
2/07	1"lt	WNL	Lt2	S	Lt.1	Lt.c/d	S	S	Pos.Lt.	S	S	C1 lt. S2 lt.
2/09	1"lt	WNL	Lt2	S	Lt.1	Lt.c/d	S	S	S	S	Dec.	C2 lt. S2 lt. Occ.rt.
2/14	1"lt	WNL	Lt2	Dec	Lt1	Lt.l/s	Mod	Sac/ Level	S	S	Dec.	C5 lt. S1 rt.
2/20	1"lt	WNL	Lt.2	S	Lt.1	Rt.l/s	Mod.	Head lt	0	S	WNL	C2 rt. S2 rt.
3/02	1"lt	WNL	Lt 1	S	Lt.1	Lt c/d	Mod.	S	Pos.lt	S	WNL	C1 lt S1 lt
3/09	1"lt	WNL	S	S	S	Rt c	Mod.	S	0	S	WNL	Occ.rt. S2 rt
3/16	1"lt	WNL	S	S	S	Lt c/d	Mod.	S	Pos.lt	S	WNL	C1 lt S2 lt.
3/23	1"lt	WNL	S	S	S	Rt.c	Mod	S	0	S	WNL	Occ.rt S2 rt.
3/30	1"lt	WNL	S	S	S	Rt.c	Mod	S	Pos.rt	S	WNL	C5 rt. S1 lt
4/19	1"lt.	WNL	S	S	S	Rt.c	Mod.	S	Pos.rt	S	WNL	C1 rt. S2 rt.
5/10	1"lt	WNL	S	S	S	Rt.c/d	Mod	S	0	S	WNL	C2 rt S2 lt
5/20	½"lt	WNL	0	S	S	Rt.c	Full	Level	0	S	WNL	C2 rt. S1 rt.
6/07	½"lt	WNL	0	S	S	WNL	Full	Level	0	S	WNL	C5 rt S3 rt.
6/21	½"lt	WNL	0	S	S	WNL	Full	Level	0	S	WNL	C2 lt. R.ant.inf. sacrum

The use of synthetic hormones to both prevent and promote fertility has been shown to have severe and well-documented toxic side effects for women. About 10 million women in the United States use the pill at any one time, but from 30 – 50% stop using it within a year because of undesirable side effects. In the 1960's and 1970's high-dose pills caused serious problems for many women and are known to have caused a small number of deaths as well.¹⁵

Sherill Sellman, international author, lecturer, and psychotherapist, says “About 120 risks and side effects are associated with this combination (estrogen and synthetic progestin), some of which are life-threatening, including not just heart problems but cancers of the reproductive organs, breast cancer, increased risk of diabetes, asthma, thyroid imbalance, and immune dysfunction.”¹⁶

In light of the recent halt in one of the largest federal studies of hormone replacement therapy due to the increased risks of breast cancer, heart attack, stroke and blood clots in the women using synthetic hormones,¹⁷ it is imperative that women become educated about their full range of choices and utilize natural health care options that are safe, effective and affordable.

Although the science, art and philosophy of Chiropractic utilizes a vitalistic approach, a reader who considers the body from purely a mechanistic viewpoint, can see the relationship of the nervous system to the problems of infertility and miscarriage. The neurological supply to various structures in the pelvis arise from the lower sacral nerve roots (primarily S2, S3, and S4), with branches to not only the pelvic floor muscles but also to mediating parasympathetic control over pelvic organs themselves.¹⁸

There is also a growing body of evidence that chiropractic care can promote the ability of the body to communicate at a cellular level, allowing us to make changes in the way we react to previous experiences and adapt to internal and external stressors.

Early work by the developer of chiropractic, B.J. Palmer, includes a term describing the mind/body connection as “the mental impulse.” Current researchers, such as Candace Pert, Ph.D., advance the evidence of the mind/body connection. Pert discusses the flow of neuropeptide messengers as an informational system that connects the nervous system, endocrine system and immune system in an intimate way. A whole new exchange of information occurs outside the synaptic connection between nerves through chemicals that she terms “neurojuices” and she calls the brain “a bag of hormones”. She concludes that the limbic system (emotional center) should be extended to the dorsal horns of the spinal cord, which are richly endowed with neuropeptide receptors.¹⁹

Chiropractic literature reports as early as 1923 by Burns in his paper “*Vertebral Lesions and the Course of Pregnancy in Animals*” that subluxations affected the ability of animals to conceive and deliver full-term pregnancies.²⁰

The case study entitled “*The Restoration of Female Fertility in Response to Chiropractic Treatment*” by McNabb describes positive results from chiropractic care when a previously infertile woman conceived and delivered a healthy baby following his chiropractic treatments. He speculated that the lower thoracic subluxation might have irritated the sympathetic innerva-

tions to the fallopian tubes and uterus. This would have caused excessive vasomotor tone in these tissues, resulting in physiological dysfunction without necessarily causing any pathology.²¹

Women who enjoy the benefits of chiropractic care prior to pregnancy can also enjoy the advantages of chiropractic care during pregnancy, including labor and delivery, as demonstrated in work by Joan Fallon, D.C. entitled “*Chiropractic and Pregnancy: a partnership for the future*”.²²

Carol J. Phillips, D.C., author of *Hands of Love*, has spent over 15 years empowering, supporting, and assisting women with their birth process utilizing both chiropractic care and Upledger craniosacral therapy. She says “Few people are aware of the incredible balancing act going on within a mother's body during every moment of her pregnancy. To accomplish this act, a mother must fine-tune all of the systems and structures within her body. Any imbalance within a mother's body can result in a deviation away from her normal state of homeostasis (physical stability) and toward a state of dysfunction, discomfort, and/or disease.”²³

This article serves to contribute to the growing body of chiropractic literature and research that suggest chiropractic care can have many positive effects on the process of pregnancy, from conception to delivery.²⁴ The relationship of the nervous system to affect physiological as well as emotional components of pregnancy is clear in the literature.^{18,19,22} Any interference in the flow of information between brain, spinal cord, and target organs, whether at the synaptic connections or via the neurochemicals described by Pert,²⁵ can affect fertility and also prevent completion of a full-term pregnancy. It may very well be that the emotional components have the greatest effect on causing the subluxations, which interfere with the transmission of information linking the nervous and endocrine systems to the pelvic organs involved.

Conclusion

This case study describes a female practice member who suffered with colitis and then miscarriage and then infertility. I suggest it is significant that these conditions are related neurologically, as demonstrated by studies cited in *Somatovisceral Aspects of Chiropractic* which discuss mechanically induced pelvic organic dysfunction. Impairment of the pathways from the lower sacral nerve roots can cause gynecologic and sexual dysfunction as well as bowel dysfunction. The influence of emotional stress is also shown to be a factor in these three conditions, as well. The complex system of feedback loops and interactions, a close communication among the CNS, the immune system, and hormones by means of the hypothalamic-pituitary-adrenal (HPA) axis was presented by Morgan and established a relationship between stress and Chiropractic.²⁶

This practice member's care utilized Chiropractic adjustments to remove the interferences that were not allowing her body to adapt to stress. These adjustments affected pathways that carried electrical impulses via synaptic connections as well as the flow of neurochemicals to the receptor sites affecting her emotional state.

The importance of connecting to the practice member's emotional feelings and validating her experience cannot be over-

emphasized when working with a woman who has lost confidence in her reproductive abilities after miscarriage. Most people do not realize the depth of mourning that many women go through or understand how long recovery can take.²⁷ The process of grieving is an important part of their healing, and the chiropractor can provide a safe and empathetic environment to do that. As shown in Pert's work, the ability to release the emotional feelings through tears and talking, allowed the neurolimbic system to function with less stress thus affording ease of tensions in the musculoskeletal system.

In combination with relaxation techniques including prayer, meditation, and breath therapy to improve the flow of oxygen to her muscles and organs, this practice member's chiropractic care allowed her mind- body to integrate information more efficiently.

Faced with the increasing toxicity of our planet, and the current trends for women to manage multiple roles, including motherhood, homemaker, and career woman (or employee), it is obvious that the stresses on couples and families will not decrease. Utilizing chiropractic care to help the nervous systems cope with and adapt to these increasing stressors seems an intelligent alternative to more invasive therapies. The evidence is clear that infertility among men and women is becoming more common. Pharmaceutical and surgical interventions hold greater risks than chiropractic care and have not been shown to be more effective. I propose that there need to be more studies showing the efficacy of chiropractic care in improving a couple's ability to conceive, not only with women, but also with their male partners. I would like to see future research conducted on couples, studying chiropractic care, nutrition, and the effects of emotional stress on infertility.

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