CASE STUDY

Female Infertility and Subluxation-Based Gonstead Chiropractic Care: A Case Study and Selective Review of the Literature

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Abstract

Objective: To describe the results of subluxation-based chiropractic care of a female struggling to conceive, and to provide a current review of the literature on infertility and chiropractic.

Clinical Features: A 29-year-old female schoolteacher with an 8-year history of infertility presented to a chiropractic clinic for care. She revealed during the history that her menstrual cycle typically lasted 40–60 days, on average.

Interventions and Outcomes: Vertebral subluxation was found at S4 sacral segment, and specific, high-velocity, low-amplitude thrusts were delivered according to Gonstead protocol. After 4 weeks of care, she reported being pregnant.

Conclusion: Chiropractic adjustments, resulting in the reduction of vertebral subluxation, appeared to be beneficial for a woman previously deemed infertile. Research on chiropractic and infertility is limited, and the chiropractic profession is implored to conduct more research in this area.

Key words: chiropractic, infertility, subluxation, Gonstead, autonomic nervous system, fertility

Introduction

Infertility is defined as the failure to achieve a pregnancy within one year of regular unprotected intercourse. In the United States it is estimated infertility affects 6-7.3 million women. The prevalence of infertility among women as they grow older rises significantly. Eleven percent of women ages 15-29 experience the definitive 12-month infertility period, whereas 23 percent of women ages 35-39 cannot become pregnant after a year of trying. The majority of chiropractic research on infertility involves women over 30, a population which commonly has difficulty conceiving.

It is estimated that women account for up to 40% of all infertility cases and men account for up to 40% leaving the balance to be a combination of the two, or of unknown etiology. The causes of female infertility are typically stratified into 5 categories: cervical, tubal, uterine, ovarian, and unknown causes. Ovarian-based infertility is the most common cause of female infertility. For this reason, it is important to understand the role of the ovary in the female reproductive cycle.

The female reproductive cycle begins with the secretion of Gonadotropin-releasing hormone (GnRH) from the hypothalamus. This stimulates the production of luteinizing

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hormone (LH), and follicle-stimulating hormone (FSH) within the anterior pituitary. FSH, stimulates the production of estradiol and progesterone produced in the ovaries. Rising FSH levels cause the follicle to reach maturity but the ovum will not be released until, for reasons not yet fully understood by physiologists, LH serum levels surge to 6-10 times normal levels. The LH serum levels surge 18 hours prior to ovulation which causes the eruption of the ovum into the fallopian tube.3,6

The subluxation-based chiropractic community has had a long history of seemingly miraculous clinical results, beginning in 1895 when Harvey Lilard, a man, deaf for 11 years, had his hearing restored by the first ever chiropractic adjustment.7

Under the management of a subluxation-based chiropractor, who located and reduced the vertebral subluxation, his condition of deafness had been resolved. One might similarly question the relationship between infertility and vertebral subluxation.

Kent, in his review of subluxation models, quotes Harrison in 1821 regarding the neurological consequences of subluxation, “When any of the vertebrae become displaced or too prominent, the patient experiences inconvenience from a local derangement in the nerves of the part. He, in consequence is tormented with a train of nervous symptoms, which are as obscure in their origin as they are stubborn in their nature…”8

The nerve supply to the female reproductive organs has been well understood by anatomists. The lumbar splanchnic nerves ascend from the ovaries and fallopian tubes, terminating in the T11-L1 spinal sensory ganglia.9 Parasympathetic innervations to the ovaries and fallopian tubes arise from the pelvic and hypogastric plexuses and terminate in the neuronal cell bodies in the S2-S4 ganglia. The uterus, cervix, vagina, and clitoris are also innervated by the sympathetic fibers traveling to the T12-L2 spinal ganglia and the parasympathetic fibers passing inferiorly to the S2-S4 spinal ganglia via the pudendal nerve.9

It is the goal of this paper to not only acknowledge and review the cases currently documented in the literature but also to introduce a new case in an effort to encourage further definitive research on this poorly understood phenomenon.

Case Report

History

A 29-year-old woman presented with a 2-week history of lower back pain and left leg pain, which radiated down to the sole of her foot. A former athlete, the patient also revealed that her menstrual cycles were typically 40-60 days in length, and denied the use of birth control both currently and in the past. She and her husband had been unable to conceive after 8 years of attempting.

Examination

Physical examination of the patient showed the following notable findings. Upon initial instrumentation, the chiropractor employed break analysis using a dual-probe thermometric instrument (ETS-6 Nervoscope). “Breaks” were found at C2, T6, and sacrum, which led the remainder of analysis to focus in the upper cervical, mid-dorsal, and sacro-iliac regions of the spine.

Nervoscope instrumentation revealed moderate readings at C2 and T6, and significant deflection in a region of S3/4. Digital palpation revealed marked point tenderness at S4, slightly less at T6, minimal tenderness at C2. Additionally, the S4 region was edematous.

Motion palpation of the cervical, thoracic, and lumbar spine was performed in addition to iliac motion maneuvers. Palpation findings confirmed a fixation of C2, revealed T6 to have proper motion in the sagittal plane despite its tender nature upon digital palpation. Motion palpation provided clinically relevant information at the level of S4. Further visualization of this area revealed significant swelling in the area in the absence of recent trauma.

Orthopedic and neurologic tests performed with (+) results are as follows: Lesegue (+) L, Braggard (+) L, Bechterew (+) L, Well-leg (+), Soto-Hall (+), Patellar and Achilles reflex +2 bilaterally, ROM was within normal limits, with the exception of extension, which was limited due to pain.

As per Gonstead protocol, a full spine 14x36 radiographic technique were employed. Unconventionally, however, both the AP and lateral projection were taken in two exposures, rather than one due to limitations in the size of receptor bucky. All views are taken from a 72” source-image distance.

Radiographic analysis revealed the following: on the lateral cervical and lumbar projections (Figures 1 and 2), the seventh cervical vertebral body was displaced posterior and inferior with respect to T1.

![Figure 1. Lateral Cervical](image-url)
The second lumbar vertebral body was also displaced posterior and inferior with respect to L3. The fourth sacral tubercle is notably oriented posteriorly, as noted by the near occlusion of the sacral canal at that level.

The vestigial disc dividing the two appeared to be open in the posterior, and if fused, this would be the position of fusion. Disc spaces throughout the spine appear unremarkable with the exception of the L5/S1 disc, which is diminished in the posterior by approximately 1/3rd of its original height, labeling it a D2 disc according to the Gonstead disc classification system.

On the AP projections (Figures 3 and 4), a sacral malformation, deviating to the left at the level of S4 was noted. Further AP projection findings included a posterior and inferiorly rotated innominate on the right. This side was listed according to the side of lumbar body rotation, which is the convention in Gonstead radiographic analysis. In the cervicothoracic region, the sixth thoracic vertebral body was observed to have displaced posterior and inferior, and on the AP projection was found to have also rotated to the left and tipped inferiorly in the coronal plane on the right, which is listed as a PRI-T within the confines of the Gonstead listing system. The C7 vertebral body, in addition to its posterior and inferior displacement, was also observed to have rotated to the left and inferiorly in the coronal plane on the left, which is listed as a PRS. The films were negative for occult bony pathology, fracture, or infection.

**Intervention and Outcome**

The Gonstead Method of analysis was utilized with this patient for the location and reduction of vertebral subluxation. Using a specific short lever contact, a high-velocity, low-amplitude thrust was administered using the Gonstead Technique. The Gonstead system employs the use of instrumentation, static palpation, motion palpation, visualization, and x-ray analysis each visit to be able to discern when, where, and how often to deliver adjustments.

Infertility
On the first visit, the subluxation adjusted was located at the S4 sacral segment, as indicated by instrumentation break analysis, digital palpation, visualization, and x-ray examination.

Break analysis, primarily used by Gonstead practitioners, employs the use of the Nervoscope, or another similarly patented permutation of the dual-probe thermometric instrument. The Nervoscope is composed of two input detectors, which lead into a microvoltmeter. The voltmeter needle is drawn toward the side of greater temperature when gliding the detectors down each side of the patient’s spine. The meter will show a deflection of the needle in proportion to the difference in temperature at the two input detectors.10

This adjustment was performed on the pelvic bench, in the side posture position, using a base-posterior push move on the posterior S4 segment. This was the only segment adjusted on this visit. The identical protocol for adjusting was used at each visit to determine the clinical necessity of each adjustment. The patient was seen one time a week, approximately 5-6 days apart.

On the subsequent visit, 5 days later, the lower back pain, which had originally been so painful as to limit any lumbar extension, was now graded as a 2-3/10 on a 0-10 pain scale. Range of motion, which could not be measured on the initial visit due to pain, was now measured as 25 degrees using manual inclinometry.

During this visit the same sacral adjustment was made and noted to be an “excellent set through” in the notes. The swelling was noted to have decreased by 50% since the last adjustment, and the concomitant tenderness of the S4 tubercle had also significantly been reduced. These clinical signs of subluxation, which had been confirmed by radiographic analysis, had been markedly reduced and would continue to be the indication for adjustment throughout this case.

She continued to be seen on a frequency of one visit per week until the reduction of vertebral subluxation was achieved and maintained for one week, whereby the patient would then be seen one time every two weeks. The presence and severity of subluxation was determined through the use of the following: break analysis measuring neurological symmetry from side to side, digital palpation and visualization indicating the presence or absence of the signs of inflammation/injury (redness, pain, swelling, and heat), and motion palpation indicating the normalization of intersegmental ranges of motion.

This schedule was recommended to ensure the maintenance of previous correction as well as to allow a shift of focus to secondary and tertiary subluxations not originally addressed. The initial results occurred after one month of care yet the patient remained under care at a frequency of one visit per month for a full year. See Table 1 for the tabular representation of the segments adjusted within the first five appointments.

Nineteen days following her first adjustment, the patient reported a positive Early Pregnancy Test (+EPT), and had scheduled an appointment with an obstetrician the following week. It was confirmed by the obstetrician that she was four weeks gravid. Following this news, subsequent visits continued to focus on the S4 segment when indicated by Nervoscope readings, however, the Nervoscope readings at that level had become less frequent, indicating the successful reduction of subluxation. Other subluxations, located using the previously mentioned indicators for subluxation were adjusted elsewhere in the spine as well over the course of the next 11 months.

Discussion

Review of the Literature

A literature search of the Index of Chiropractic Literature was performed using the following criteria, searching for full text articles: "infertility" (keyword) - 27 results; "female fertility" (keyword) - 10 results. A search of journals within McCoy Press produced 31 articles using the keyword, “infertility.” The Journal of Pediatric, Maternal, and Family Health contained 12 articles, the Annals of Vertebral Subluxation Research contained 13 articles.

Adams described the case of a 22-year-old female and Type I diabetic, who, in addition to presenting with bilateral hip and knee pain, was unable to have a menstrual period without the use of birth control medication. An Applied Kinesiology (AK) chiropractic analysis was employed, rendering subluxation findings at T7 and sacrum. This analysis also indicated a tilted uterus, which was confirmed by the patient’s gynecologist. Chiropractic adjustments were delivered in an effort to reduce subluxation, and the administration of digestive enzymes and pituitary-supportive nutritional complexes were also indicated, as per AK analysis protocol.

Her hip and knee pain resolved, and four months after beginning subluxation-based chiropractic care, she had her first period while not on birth control. Over the course of the next 15 months, she received eight chiropractic adjustments for the removal of subluxation, and became gravid shortly thereafter, resulting in a full-term pregnancy, and consequently healthy baby.11

In a case described by Blum, a 32-year-old female presented to a chiropractic office with a chief complaint of chronic colitis, which had been an issue for over 12 years. Additionally, and unbeknownst to the chiropractor, she and her husband had been unable to conceive after 7 years of trying. SOT analysis and procedures were administered to this case, specifically Category I pelvic blocking procedures. Approximately one month following the resolution of her chronic colitis and the stabilization of category I subluxation indicators, the patient was able to become pregnant.12

Anderson-Peacock introduced two cases of infertility to chiropractic literature. The first case, a 35-year-old female presented with a chief complaint of recurrent low back pain following a fall. The second case, a 36-year-old female, presented with a chief complaint of infertility. The second had a 5-year history of dysmenorrhea, and had been under gynecological care for a number of years. Subluxation objective measures included thermography and sEMG readings, radiological findings, range of motion deficit, and
postural abnormalities. Subluxation-based, Torque-Release Technique (TRT) adjustments were delivered to both women, and over the course of the weeks following, indicated they were both pregnant. Both women took their pregnancies to term, one without complication, and one with minor spotting throughout pregnancy, which was monitored throughout by her gynecologist.\textsuperscript{13}

Lyons described the chiropractic care of a 27-year-old female athlete, presenting with a 5-year history of infertility. In addition to having several complicating conditions, she reported having multiple unsuccessful attempts at fertilization drug therapies. Subluxation findings included thermography and sEMG readings, range of motion deficit, a decreased sagittal lumbar curvature, and concomitant postural abnormalities. Subluxation-based, Gonstead adjustments were utilized and subluxation findings decreased over the course of a one-month, 14-visit period. At this point, the patient became pregnant, and successfully took the pregnancy to term, delivering without complication.\textsuperscript{14}

In a case described by Kaminski, a 31-year-old woman, medically diagnosed with a “lazy” reproductive system, presented to the chiropractic office following 12 months of unsuccessful medical treatment of the condition. Subluxation objective measures included aberrant thermography and sEMG readings. Diversified and TRT adjustments were delivered in an effort to reduce vertebral subluxation, and following 4 months of care, she had ovulated naturally. Within nine months of subluxation-based chiropractic care, she had been able to conceive naturally and carry the child full term.\textsuperscript{15}

Bedell documented another case of TRT chiropractic helping with the reduction of vertebral subluxation contributing to infertility. She described a 27-year-old female with a history of two miscarriages within the last calendar year. The patient mentioned not having ovulated in the last 9 months. Subluxation findings included postural abnormalities, abnormal palpatory findings over the sacrum, and leg length discrepancies. Over the course of care, objective findings of subluxation were consistently being reduced. In 45 days of care, she ovulated for the first time in over 10 months, and following 90 days of care she became pregnant.\textsuperscript{16}

Multiple cases within the literature have shown some sort of relationship between menstrual cycle regularity and subluxation-based chiropractic care. In Nadler’s case, for example, a pentigravid, pre-menopausal, Jewish female, age 42, was functionally infertile within the confines of her culture. Due to strict religious parameters, combined with an abnormally short menstrual cycle and abnormally long duration of flow, she was unable to be intimate with her husband. Subluxations were located and reduced through the use of TRT; in 5 weeks, this woman’s menstrual cycle was lengthened to the typical 29-30 day cycle, and the duration of her menstrual flow decreased in length by one day. This permitted the necessary adjustment in timing, which allowed for gestation to occur several months later.\textsuperscript{17}

Additionally, Gauthier describes a study performed using the Gonstead protocol and adjusting methods in conjunction with progesterone cream therapy to lead to the eventual healthy menstrual cycles in a 25 year old female who suffered from primary amenorrhea.\textsuperscript{18}

Rosen described a case involving a 34-year-old woman presenting with infertility. Her clinical history revealed many gymnastic injuries, as well as several motor vehicle accidents. She was evaluated using Sacro-Occipital technique, and was found to have sacro-iliac instability, known in SOT as a Category II subluxation. The patient’s Category II subluxation indicators stabilized over an 11 day period, and within a 4-week period of the initial visit, the patient reported having conceived naturally.\textsuperscript{19}

Sims and Lee describe the case of a 23-year-old woman with infertility, low back pain, sensory deficits in both legs, and a six-year history of birth control use. Subluxation indicators included thermography for Toggle protocol, leg length discrepancy analysis, and postural analysis. After 3 ½ months of chiropractic care, the patient had menstruated for the first time since coming off birth control, and 4 ½ months into care, she reported becoming pregnant. At 4 months of care, the patient’s episodes of subjective complaints had diminished and objective subluxation-based findings had been markedly reduced as well.\textsuperscript{20}

Alcantara et al documented three cases, each of which has similar presentations, subluxation findings, and results. In one case, the 33-year-old female had been unable to conceive for the last 4 years, and following the use of reproductive drugs, had suffered two ectopic pregnancies. In another case, another 33-year-old female had received two rounds of Clomid without successful conception. A third case of an otherwise healthy 35-year-old female presented with a 7 month history of infertility, and irregular menstrual cycles. Each case presented with subluxation findings, including abnormal thermography and sEMG readings, radiological indication of subluxated vertebra, range of motion deficits, and postural abnormalities. Diversified, high-velocity, low-amplitude (HVLA) adjustments were delivered in conjunction with fish oil supplements leading to the eventual successful implantation and gestation for each case described.\textsuperscript{21}

In a case described by Cohn and Minnich, a 31 year-old nulligravid female with a 2-week history of SI joint pain, digestive issues, and migraine headaches presented for chiropractic care. Subluxation findings included abnormal thermography and sEMG readings, and static palpation findings. Five weeks into care, the patient conceived, and when evaluated, had significant decreases in subluxation indicators. This pregnancy ended in miscarriage due to the implantation of an egg without genetic material. Following two months of additional subluxation-based chiropractic care, she conceived again, which resulted in a full-term pregnancy and normal birth without complication.\textsuperscript{22}

Vilan described a 28-year-old female presenting with migraine headaches as well as infertility. Diversified adjustments were delivered to the mid-thoracic and cervical spine, while Cox flexion-distraction procedure was utilized for the lumbar spine. Seven weeks into care, a regular menstrual cycle was established, and within 6 months, she became pregnant.\textsuperscript{23}

There have been several cases which have shown that
subluxation removal may also increase the effectiveness of in-vitro fertilization (IVF) techniques compared to the IVF alone. Phillips documented the case of a 37-year-old woman diagnosed with infertility following endometriosis, which resulted in ovarian/tubular scarring, presented to a chiropractic office with low back pain. This patient had undergone four unsuccessful in-vitro-fertilization (IVF) procedures. SOT blocking, anterior dorsal and lumbar adjustments, and Gonstead cervical and pelvic adjustments were delivered to the patient over an 18-week period. During the course of care, she returned to the IVF program, to find that follicular activity had returned, and two mature eggs were retrieved. This IVF attempt was successful, and nine months later she gave birth to a baby girl.24

Senzon documented another case involving an augmented effectiveness of IVF therapy following subluxation-based chiropractic care. Network Spinal Analysis (NSA) was employed to help a woman who was “responding poorly” to IVF techniques. Artificial hormonal stimulants were ineffective on this individual. Following NSA care, the individual again underwent the drug therapy for IVF. Oocyte size and viability had shown visible improvement since the initiation of care, and eventually allowed for a successful pregnancy to occur.25

A case described by Ressel involved a 65-year-old female who presented to the office with severe low back pain and lumbar degeneration. She reported a severe fall at the age of 13 which lead to the complete cessation of menses by age 18. She had been diagnosed as infertile for the past four and a half decades. She was seen six times per week for the first two weeks, and three times per week for the following six weeks using the Stucky-Thompson Terminal-Point Technique. SEMG and thermographic data indicated subluxation involvement in the lumbar spine, and subluxations were confirmed at L3-5 and sacrum. Despite the decades of generation, following the successful reduction of vertebral subluxation, this 65-year old patient’s reproductive functions returned.10

Medical Management

It is prudent to discuss the current medical standard of care for those experiencing infertility. The current medical treatment of infertility includes intra-uterine insemination (IUI), in-vitro fertilization (IVF), clomiphine citrate (CC), gonadotropin hormone therapy, or any combination of these treatments.21,27 CC-IUI combination therapy is currently the first line of treatment in the case of male infertility. IVF, therefore, is third in the line of potential treatments and is normally reserved for couples of extremely low predicted fertility.25,26 The current issue with ovarian stimulation therapy is the inherent risk of multiple viable pregnancies per treatment.27

In 2003, there had been nearly 40,000 babies born using IVF methods, yet no central data collection method has been employed to track birth defects among these IVF-conceived children.28 Behrendt brings to our attention that IVF has been associated with an increased risk for a genetic disorder that predisposes these children to cancer.29,30 These techniques are arguably dangerous and certainly experimental, and yet the public is willing to pay top dollar for such services.29

Technique & Mechanism

The profession of chiropractic is based upon the notion that mental impulses supply the information necessary for all the cells of our body to function, and that the interference of these mental impulses, known as subluxation, leads cells distal to said lesion to dysfunctional action.31,32 Chiropractic skeptics have scoffed at such a notion that lesions, known as vertebral subluxations could, in fact, alter or interfere with the mind-body connection, thus altering the function of the body’s organs.33

In reality, the Harvard Mind/Body Medical Institute currently offers a two day “Mind/body infertility retreat” that costs nearly 400 dollars for an individual to attend, or 750 dollars for a couple to attend, not including the cost of hotel lodging.29 Even the medical minds at Harvard have accepted the possibility that interference in the mind/body connection may play a role in infertility, or at least they have no qualms about accepting payment for services based on that notion.

Chiropractic, likewise, focuses on the removal of interference in the nervous system, thus restoring the mind-body connection, which in chiropractic, is known as the “normal complete cycle.”31 In contrast, chiropractic is a safe and affordable alternative, with no cases to date in the literature resulting in atypical multiple births or genetic defects following chiropractic adjustments.

The Gonstead Method of chiropractic has provided this study and other studies with a multi-faceted case-study design, providing many aspects of subluxation to be measured. Dr. Gonstead was a strictly subluxation-based chiropractor who was the first to propose the “Foundation theory,” which stated that any vertebra which deviated from the level foundation of the sacrum were considered either subluxations or compensations, depending upon whether or not they initiated the deviation or rectified it. Gonstead accused other chiropractors of adjusting too much compensation, rather than finding the true subluxation. For this reason, many chiropractors practicing the Gonstead Technique tend to adjust fewer segments than perhaps their other full-spine practitioners.10,34

Gonstead theorized that subluxation developed over time, beginning with an injury to the spine, shifting the vertebral body into a sustained position, thus allowing an alteration in weight distribution over the nucleus pulposus. The nucleus, being of high water content, is non-compressible and forces its mass into the annular fibers, which become deranged. These deranged fibers initiate an inflammatory reaction. Edematous fluid infuses the disc and surrounding tissues causing them to expand and protrude. It is the expansion of these structures, which cause the nerve root compression portion of Gonstead’s vertebral subluxation. The entire goal of the technique is to reposition the vertebra upon the disc, allowing for the replacement of the nucleus pulposus to its optimum weight-distributing position. This allows for the active removal of inflammatory materials from the IVF, causing neurological irritation.26

These adjustments are delivered in a number of positions, as created by Dr. Gonstead over the course of his extensive
career. The side posture position is designed to provide at all times, three points of contact on the patient. The patient is positioned in a side-lying posture, head on a pillow, the superior hip and leg flexed. The foot of the bent leg is then tucked behind the popliteal fossa. The first stabilization point on the patient is the pelvic bench, which was designed with a cloth exterior to eliminate the slippage experienced on leather-covered tables. The second is the doctor’s thigh, which is contacting the flexed thigh of the patient. This stance provides a stabilization point opposite in vector and equal in force to that of the thrusting hand, which is the third point of contact.

The thrusting hand, contacting the spinous process or the mammillary process of the vertebra being adjusted, supplies an extremely quick thrust (high velocity) with an excursion measuring in millimeters (low amplitude), hence the HVLA nature of the thrust. From this fully stabilized position, the thrust is delivered to the patient in a posterior to anterior, and lateral to medial fashion. Unlike the “toggle-recoil” style of adjusting, the Gonstead adjustment finishes with a “set and hold” allowing for creep tissue deformation to take place in the direction of the adjustive force. The side posture push adjustment delivered in the case study described here is identical to that described in the above paragraph, taking a pisiform-S4 tubercle contact.

Another extremely important tool used by Gonstead practitioners is the Nervoscope. The Nervoscope is not unlike any other form of dual-probe thermocouple instrument such as the Neurocalometer (NCM), as introduced by Dossa Evans, in 1923. Paraspinal thermometry has been a part of the chiropractic exam for nearly 90 years to date.

The most recent research performed on the Nervoscope was done twenty years ago. In a study provided by Plaugher et al, valuable information regarding the interexaminer reliability of the instrument was revealed. The results were mixed, but favorable. It was found that the interexaminer reliability when “scoping” the cervical-thoracic (C4-T2) junction was “slight,” when scoping the dorsals (T4-T8) interexaminer reliability was found to be moderate to substantial. Intraexaminer reliability in C4-T2 region was fair to moderate, and the intraexaminer reliability of T4-T8 was substantial. The lumbar region could not be statistically analyzed due to limited variation. It was posited by these authors that the intra- and interexaminer reliability deficiency in the cervicothoracic region was due to the transitional nature of this junction from kyphosis to lordosis. This condition allows for significant variability in examiner technique when scoping this area.

The nervous system is responsible for the maintenance of homeostasis within each of the body’s systems. The lesion of question when discussing the function of the nervous system in the chiropractic profession is known as the vertebral subluxation. The pathophysiology of the Gonstead disc theory has already previously been discussed with regard to the etiology of the vertebral subluxation. This original hypothesis is over-simplistic, but not useless, as it serves as the launching pad for further discussion of the many forms and functions of subluxation.

Lantz expounded upon the Vertebral Subluxation Complex of Gonstead’s era and applied basic scientific knowledge to make the model more complete as a multifaceted definition of subluxation. In addition to the disc pathology of which Gonstead theorized, Lantz added importance to the connective tissue pathology, altered vascular supply, and inflammatory responses brought upon by subluxation. Where Gonstead focused on the Functional Spinal Unit (FSU), Lantz integrated all anatomical structures to create the “Integrated Spinal Unit (ISU), which also included sinuvertebral nerves, radial arteries and veins, muscles and segmental nerve roots into the functional unit in which subluxation could occur. He hypothesized that the degeneration of these soft tissue structures could be the result of the fixation of hard tissue structures on which these vital soft tissue structures rely.

When integrated with the neurodystrophic model of subluxation, a clearer understanding of the multifaceted nature of subluxation is obtained. The neurodystrophic model of subluxation relates the nervous, immune, and endocrine systems together in one common system designed to properly regulate the autonomic functions of the body. Korr proposed that spinal lesions are associated with increased sympathetic nervous system activity, which creates within the body, a sense of danger, thus triggering the balance of the body’s systemic responses to a threat. According to Rudy Balleux, “stress-induced, brain-mediated immunoregulation is affected by autonomic outflow and (neuro) endocrine outflow.” In other words, in the presence of stress, the body’s mechanism of homeostatic correction is via the brain and spinal cord, by way of their direct control of the endocrine and immune systems. This mechanism connects the nervous system to the endocrine and immune system, each of which communicate via action potential, neurotransmitter/neuropeptide, and cytokine, respectively.

It is plausible, based on the fact that our brain can modulate endocrine and immune function, that some kind of interference to the brain’s ability to govern hormonal levels could affect something as hormonally-dependent as the reproductive cycle. Reproduction and conception are not among the functions considered to be vital for immediate survival, thus in the presence of stress, in the form of the vertebral subluxation, it is possible that the reproductive functions become muted.

On a spinal segmental level, it is postulated that segmental facilitation, caused by subluxation can cause hyperactivity of the lateral horn cell bodies, which in turn, causes the local segmental facilitation of anterior horn cells, both of which directly control the majority of the viscera. In addition to decreasing cellular immune function, this overriding sympathetic “tone” negates the effects of antagonist parasympathetic fibers.

For proper reproductive organ function, therefore, it would be plausible that an overriding sympathetic nervous system could not only cause dysfunction of end organs via segmental effector facilitation (T11-L2), but also cause the negation of parasympathetic influences needed to allow for proper organ function (S2-S4).
Conclusion

This study was limited not only in its level of evidence as the study of a single case, but also in its provision of pre- and post-objective data to provide evidence of subluxation removal. The inability to become pregnant after 8 years, followed by a series of 5 adjustments and the conception to follow, without the implementation of any other adjunct therapies would seem to be evidence enough, however the initial measures of subluxation can now be quantified, and a reduction in those quantities from beginning to end of study would only strengthen the case.

Considering the age of the patient and therefore the level of skeletal maturity, is unlikely that any structural changes of the sacrum would be visible on x-ray, which is why a second film had not been taken. Since the existence of subluxation was partially diagnosed based on x-ray findings, a change demonstrable on film would certainly fortify the argument that subluxation was the cause of this patient’s infertility, and a follow-up radiological study would be appropriate. The Nervoscope, argued by some to be an antique piece of equipment, has little research base to verify the validity of its readings, despite the inter- and intra-examiner reliability scores, which have been discussed within this paper. That all aside, the tool has been used successfully for nearly a century, and continues to provide some sort of indicator that aids in the location and reduction of vertebral subluxation.

It should be understood that the purpose of this paper is not to draw the conclusion that chiropractic was the cure for infertility in this case. The purpose is merely to connect the existence of subluxation in an individual to the presence of abnormal physiologic function. When subluxation is reduced or removed, organ function may increase to a point where previous conditions are no longer an issue.

Critics of this study may claim that the patient in this case had become pregnant prior to initiating chiropractic care, and that the absence of an initial EPT negates the value of the +EPT, administered following the reduction of vertebral subluxation. This skeptical viewpoint is not only understood, but also significantly justified except for the fact that the couple had been unable to conceive for eight years prior.

There is currently little research in the area of infertility and subluxation-based chiropractic. In order to better understand the full effect of vertebral subluxation on the female reproductive system, and how the removal of subluxation may allow for a return to normal function, further study on a larger, more rigorous scale is necessary.

References

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<tr>
<th>Visit</th>
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</tr>
<tr>
<td>Visit Four</td>
<td>S4: P-A, S-I</td>
<td>T6: PLI-T</td>
</tr>
<tr>
<td>Visit Five</td>
<td>Sacrum: B/P</td>
<td>C7: PRS</td>
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