

Case Study

Resolution of Secondary Amenorrhea & Infertility with Successful Conception Following Chiropractic Care to Correct Vertebral Subluxation: A Case Study & Review of Mechanisms

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Abstract

Objective: The purpose of this case is to report on the positive health outcomes following chiropractic in a woman suffering from secondary amenorrhea and infertility.

Clinical Features: A 29-year-old female presented for chiropractic care after receiving a medical diagnosis of secondary amenorrhea. She and her husband were trying unsuccessfully to conceive for several months. She sought care initially from her OB/GYN and utilized chiropractic as an alternative (drugless) means of changing her health status.

Intervention and Outcomes: Radiographic analysis and Diversified technique were used to analyze and adjust the patient for the presence of vertebral subluxations. The patient was under chiropractic care for 14.5 weeks where she recorded 33 visits, leading to normal menstrual cycles and ultimately a successful conception.

Conclusions: This case report demonstrated the impact of the vertebral subluxation on the function of the female reproductive system. This case provided further insight into the positive effects of subluxation-based chiropractic care and shows the importance of further inquiry on the topic.

Key Words: Amenorrhea, chiropractic, diversified technique, adjustment, vertebral subluxation, segmental technique, neurodystrophic model

Introduction

Amenorrhea is defined as the abnormal absence or cessation of menstruation that consists of two subcategories.¹ When a female has not reached menarche by the age of 16, she is considered to have primary amenorrhea. Secondary amenorrhea is the cessation of normal menses for a period of at least three months in a female who has previously had menses and is more common than primary amenorrhea.^{1,2} With regard to amenorrhea; one of the most common causes includes hypothalamic dysfunction and is termed functional hypothalamic amenorrhea (FHA).³

The healthy female reproductive system is a symphony of hormones and target organs that function in a precise manner for the purpose of fertilization. Synchronization and balanced secretory volumes of hormones via the endocrine system

dictates whether the body will be capable of performing ovulation or menstruation.¹

A typical menstrual cycle is about 28 days but variation toward fewer or increased number of days may be a normal occurrence for some individuals.⁴ During this time, the female's ovaries decrease the production of estrogen and progesterone, causing a release of stimulatory factors from the hypothalamus which in turn act upon the anterior pituitary.⁴

This regulatory feedback loop is known as the hypothalamic-pituitary axis and is the central nervous system's (CNS) mechanism of stimulating the menstrual cycle via Gonadotropin-releasing hormone (GnRH) in the hypothalamus.⁴ When the hypothalamus releases GnRH, it

then travels to the anterior pituitary via the hypothalamic-hypophyseal portal system where it stimulates the secretion of the glycoproteins; luteinizing hormone (LH) and follicle-stimulating hormone (FSH).³ It is essential for LH and FSH to be secreted properly in order for ovulation, pregnancy, or menstruation to occur.¹ Luteinizing hormone and follicle-stimulating hormone stimulate the ovaries via receptor mediated binding which ultimately activates a cyclic adenosine monophosphate second messenger system leading to protein kinase formation and enzyme phosphorylation.⁴

The onset of menstruation is signaled by increased serum levels of FSH which activates primordial follicles leading to the maturation of one dominant follicle while the remaining follicles undergo atresia.^{1,4} Then, the mature dominant follicle secretes estrogen stimulating the proliferation of tissue in the lining of the uterus.¹ The increased serum levels of estrogen combined with the available serum FSH to allow LH stimulation.^{1,4} At this moment, LH drastically increases in bioavailability allowing the follicle to release an egg.¹

The LH surge and release of the egg from the follicle toward the fallopian tube is the period of ovulation for the female which occurs approximately around the 14th day of the menstrual cycle.⁴ Within the ruptured follicle, progesterone is then secreted from the corpus luteum which prepares the endometrial lining for implantation by stimulation of secretory epithelium.¹ By the 23rd day, in the absence of conception, low serum LH then stimulates degeneration of the corpus luteum and subsequent decline of the ovarian hormones estrogen and progesterone.^{1,4}

This case is a review of secondary amenorrhea managed by the means of chiropractic care. Chiropractic care is focused on the location, assessment, and correction of the vertebral subluxation. The definition of vertebral subluxation, as defined by the International Federation of Chiropractors and Organizations (IFCO), is “an alteration of the intervertebral relationships of one or more articulations of the spinal column or the immediate weight bearing components of the axial skeleton; accompanied by a change in the morphology of the tissue occupying the neural canal and/or intervertebral foramina; as well as an alteration of neural function sufficient to interfere with the transmission of organizing information, considered to be homologous to the mental impulse.”⁵

Case Report

Patient History

A 29-year-old female engineer presents for chiropractic care with a medical diagnosis of secondary amenorrhea along with complaints of temporomandibular joint (TMJ) pain and mid back pain.

The patient began seeking the advice of her OB/GYN two months before initiating chiropractic care, where she described her cycles as irregular and noted that she was not using contraception at the time. At this point she was recently married and stated that she had gained approximately thirty pounds of body weight. History revealed that the patient had menarche at the age of 12 years. She had no prior miscarriages or birth defects at the time of this visit. It was reported that the

patient was trying unsuccessfully to conceive since her initial OB/GYN visit and this was also one month after her most recent cycle took place. From that moment, she recorded an average of forty-four days between cycles. Ultrasound testing revealed a negative study for tissue abnormalities and the patient received a diagnosis of secondary amenorrhea thereafter.

She described her other complaints (pain in the jaw and mid-scapular pain) as dull and occurring more when she was lying supine (typically when she is sleeping at night). She stated the complaints are not constant; they come and go without radiation to any other areas of the body and the onset was approximately one month before initiating chiropractic care. Her history was absent of any accidents (vehicular or otherwise) and she had not seen any other health care providers for these complaints of pain. She had no other complaints and reported a family history of arthritis, stroke, heart disease, and cancer.

Nutritional Intervention

The patient began a regimen of nutritional supplementation three months after the cessation of her first cycle. The supplements taken by the patient, FertilityBlend™, contained the following ingredients; chasteberry, green tea extracts, L-arginine, vitamins E, B6, B12, along with folate, iron, magnesium, zinc, and selenium.⁶ She took FertilityBlend™, orally, three times per day (three single capsules per day) for the timeframe matching that of three menstrual cycles (84 days) between the three months of use.

Westphal stated that a three month period of use increased the mid-luteal phase progesterone and successful conception in 14 of 53 women studied as compared to 4 of 40 women using a placebo.⁶ His study suggested a normalization of length of cycles in the population of women taking FertilityBlend™ and increased pregnancy rates as compared to a placebo group which may or may not correlate with the nutritional supplementation.⁶

Chiropractic Examination

On the initial patient visit, a physical examination was performed to assess the patient for the presence of vertebral subluxations. The physical examination began with range of motion of the spine revealing motion within normal limits for the cervical and thoraco-lumbar regions. However, right rotation of the spine produced sharp localized pain at the area of the facet in the vertebral segments of T5-T8, L3, and L5.

Standing postural assessment found anterior translation of the head. Orthopedic testing revealed a negative Jackson's cervical compression test along with a negative Kemps test. Static and motion palpation of the patient's spine elicited edema, muscular hypertonicity, and segmental fixations at the levels of C3, C4, T5, T7, T8, L3, L5, and S1.

Radiographic analysis of the cervical spine, using neutral lateral cervical and anterior to posterior open mouth views, revealed a loss of normal cervical lordosis and left laterality of the atlas (C1) vertebra, respectively. These findings are consistent with vertebral subluxation. Kyphotic alteration of

the cervical spinal curve is not a normal variant and is hypothesized to lead to abnormal health outcomes but not necessarily confined to musculoskeletal complaints alone.⁷⁻⁹ The concept includes a cycle of potential airway obstruction resulting in aberrant neuromuscular feedback along with postural change which stretches soft tissue on a small scale over long time periods ultimately resulting in abnormal load of forces upon the skeletal system and morphological changes.⁹

Chiropractic Intervention

The patient returned six days after the physical examination for the report of findings, informed consent, and initiation of chiropractic care. She was assessed with motion and static palpation at the beginning of each visit to assess for the presence of vertebral subluxations. Upon finding subluxations at the levels of the cervical, thoracic, lumbar, and pelvic regions, a specific high velocity, low amplitude (HVLA) thrust was applied utilizing Diversified Technique. She recorded a total of 30 visits in three months and discontinued care before the established patient re-examination due to pregnancy.

Diversified Technique

The cervical region adjustment is performed as a prone articular pillar push. The patient is placed in the prone position with the cervical headpiece on the table slightly lowered for minor cervical flexion. The doctor position consists of a fencer stance on the ipsilateral side of the thrust with a lateral index contact on the posterior inferior articular pillar of the cervical segment.

The stabilization hand (inferior hand with respect to stance) secures the segment above with contact over the occiput holding the patient's head in slight lateral flexion toward the contact hand (superior hand with respect to stance). The doctor thrusts his superior (contact) hand in the direction of posterior to anterior, inferior to superior, with slight lateral to medial force.

The thoracic region is adjusted utilizing a bilateral thenar transverse process push. With the patient in the prone position on the table the doctor assumes a fencer stance on either side of the table. Bilateral thenar contacts are established on the transverse processes of the desired segment parallel to the spine with the fingers fanning away from the midline. With the doctor's elbows straight (locked), posterior to anterior and slight inferior to superior pressure is applied through the arms over the contact and then the thrust is performed utilizing a bodyweight drop.

The lumbar region is adjusted utilizing a pisiform reinforced hypotenar contact of the mammillary or spinous process of the prone patient. The doctor's stance is on the side of the contact if contacting the mammillary process and either side if contacting the spinous process. The force and direction of correction is posterior to anterior, inferior to superior, and, to correct any rotational component, lateral to medial.

To perform the ilium adjustment, the doctor utilizes a two-part move that consisted of a prone pisiform reinforced hypotenar push with a pelvic drop on the adjusting table. Then, long axis

distraction is performed on the prone patient's short leg side to help balance pelvic distortion.

The care plan consisted of two visits per week for the first month with a reassessment after thirty days of care. The average patient will have a re-physical examination after three months that includes post-treatment x-ray film analysis for structural improvement of the spine. The patient was compliant with her recommended care however discontinued care once pregnant.

Outcome

After one month of chiropractic care, the patient resumed having her menses and three months after the initiation of care the patient reported that she had successfully conceived. This was also at the timeframe patients are analyzed further via radiographic analysis and therefore there were no post-care x-rays taken. She also reported that she felt more alert, relaxed, and that walking or standing was easier than previously stated.

Her other complaints of TMJ pain and mid-back pain subsided except for mild discomfort after the patient became pregnant. The patient rated her overall experience with care as an 8 on a scale of 0 to 10. She noted that since the initiation of care, she has incidentally found several activities of daily living to be easier, such as walking and standing for extended periods of time. Clinical evaluation also showed all positive orthopedic tests from her initial evaluation were negative by the end of her care along with pain free range of motion.

Discussion

The chiropractic foundation is set upon the understanding that altered communication at any level of the nervous system leads to poor function in the body that can manifest in symptomatology. The goal of chiropractic care is to remove any vertebral subluxation in the body in order to improve the function of the nervous system in relation to dysponesis, or alteration of homeostasis at the tissue level.¹⁰ The founder of chiropractic, D. D. Palmer, defines subluxation as "pressure on nerves, abnormal functions creating a lesion in some portion of the body, either in its action, or makeup."¹¹ However, the word itself is also seen as somewhat of a paradox being that it is sometimes laden with emotional or political backing of individuals lacking agreement.¹²

For this reason, it is necessary to begin discussion of the vertebral subluxation complex (VSC) with the current nine components as expanded upon by Lantz from the popular works of Dishman and original works of Flesia and Faye.^{10,13} The nine components of the vertebral subluxation complex are: kinesiology, neurology, myology, connective tissue pathology, angiology, inflammatory response, anatomy, physiology, and biochemistry.¹⁰ The goal of categorization by Lantz was to mold a single conceptual model that might be all encompassing for the clinical aspect of subluxation.¹⁰

The neurodystrophic model of subluxation, as described by Kent, is a powerful theory expanded upon from the conceptual works of Selye's "General Adaptation Syndrome". It states that trophic function of specific nerves may be altered due to the surrounding nonspecific immune responses that would

occur in tissue with abnormal, non-homeostatic, cellular cascades occurring due to stress responses occurring locally or globally within the body.¹⁰ With regard to anatomy, neural facilitation in the segmental area of T12, L1, and sacrum aid in the function of the female menstrual cycle.¹⁴ Removing the subluxation through a chiropractic adjustment, a balancing effect may restore function to the female reproductive system, potentially normalizing the homeostatic mechanisms that result in the female's cycle.^{15,16}

In the words of D.D. Palmer, "Diathesis in etiology is a word without meaning to a chiropractor".¹⁰ Theoretically, the diagnosis of secondary amenorrhea in this case would be a sequela of a poorly functioning nervous system.¹⁷

Limitations

Although positive correlations can be shown between chiropractic care and the patient's presentation, there are too many variables to consider for accuracy. For example, the patient experienced a significant weight gain after marriage and just before the onset of amenorrhea, the use of herbal supplementation, emotional status or changes that developed during the process of care, and lifestyle choices such as diet or exercise.

The changes occurring in the autonomic nervous system with respect to the neurodystrophic model of subluxation were not addressed via objective measures such as SEMG or thermography. Aberrant skin temperature differentials alone would help demonstrate the presence of autonomic dystonia since sympathetic tone can be altered toward an underactive or overactive state.^{18,19}

The radiographic analysis of the cervical spine, with respect to lordosis, demonstrated an incomplete study for the case performance based upon pregnancy inhibiting the re-examination of the spinal structure. Although it is necessary to prevent exposure at such time, it is equally important to state the inability to assess structural cervical change at the time of pregnancy.

Conclusion

This case report demonstrates the impact of the vertebral subluxation on the function of the female reproductive system and pain mechanism related to additional symptomatology. After experiencing chiropractic care, the patient resumed a normal menstrual pattern, successfully conceived, and demonstrated improvement in secondary complaints as well. Although it cannot be stated that chiropractic care unequivocally led to normal menstrual function, this case provides further insight into the positive effects of subluxation-based chiropractic care upon the function of the nervous system. Further inquiry upon this topic should be pursued in hopes of forming a more definitive explanation.

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Figure 1. Preliminary X-Rays: APOM

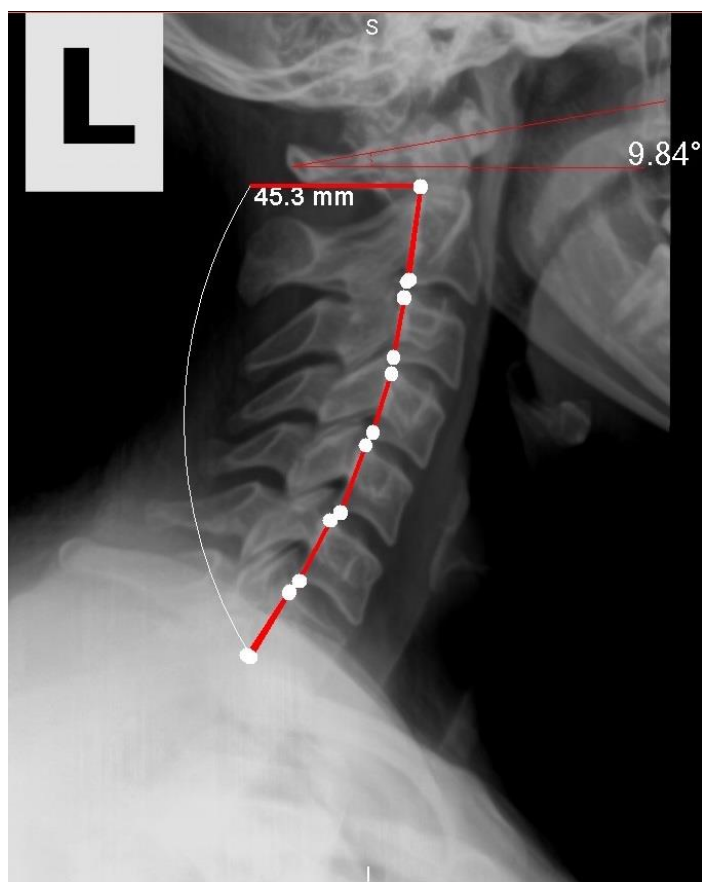


Figure 2. Preliminary X-Rays: Neutral Lateral Cervical