CASE STUDY

Resolution of Infertility in a 31-Year-Old Female Undergoing Chiropractic Care for the Reduction of Vertebral Subluxation: A Case Report

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Abstract

Objective: To describe the results of a woman undergoing subluxation-based chiropractic care after 3 years of menstrual irregularities and infertility.

Clinical Features: A 31-year-old female presented to the office with a chief complaint of upper back and neck tension as well as tension and migraine headaches. Her history revealed that she had a 3-year history of infertility, menstrual pain, heavy bleeding and cycles frequently lasting two weeks in duration.

Intervention and Outcomes: A full chiropractic evaluation including radiography, thermography, surface electromyography and heart rate variability was utilized to evaluate vertebral subluxation. Specific Diversified adjustments were applied to manage subluxations. The results of five months of care are provided. Following one adjustment the patient reported normal menstruation and following eight adjustments the patient reported she had conceived.

Conclusion: In this case chiropractic care for the management of vertebral subluxation appeared to be beneficial in the restoration of reproductive health and subsequent fertility. More research is warranted in regards to chiropractic’s role in reproductive health and infertility.

Key Words: chiropractic, infertility, vertebral subluxation, adjustment, sub-fertility, pregnancy, Diversified Technique, autonomic nervous system

Introduction

Sir James Young Simpson in the 19th century was the first to comment on impaired fertility while describing 495 British peers with marriages “which had lasted five years or more, and in which the husbands were under 75 years of age, [...] one marriage in 6.5 was unproductive.”¹ These numbers remain relatively accurate today with multiple epidemiological reports over the past three decades reporting rates ranging from 9.9% to 15.4% in parts of Europe.¹ Canadian reports suggest a 13.2-15.4% prevalence rate of impaired fertility.² According to the Centers for Disease Control and Prevention, in 2002, there were 7.3 million American women between the ages of 15-44 who have impaired fecundity, equaling 11.8%.³ The prevalence of impaired infertility rises from 11% in women ages 15-29 to 23% in women ages 35-39.³

Infertility is a state of sterility, or absolute inability to conceive.¹ In order to remain uniform with current chiropractic literature, this report will use the term “infertility” to describe a state of impaired fertility, or sub-fertility, defined

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as an inability to conceive after at least one year of unprotected intercourse. Approximately 40-60% of the time, infertility is attributed to the female, 30-40% of the time it is attributed to the male and 10-20% of the time it is unexplained. Causes of female infertility are typically distributed among five categories: cervical, uterine, ovarian, tubal and other. With ovarian issues representing the most common cause of female infertility, we will consider the hypotalamus-pituitary-ovarian axis in the female reproductive cycle.

The female reproductive cycle begins with the secretion of gonadotropin-releasing hormone from the hypotalamus. This leads to the production of luteinizing hormone (LH), and follicle-stimulating hormone (FSH) within the anterior pituitary gland. FSH and LH stimulate the production of androgens, estradiol and progesterone, from the ovaries. Elevated FSH levels trigger maturation of the follicle followed by a release of the ovum once LH serum levels surge to 6-10 times normal levels. The LH serum levels surge 18 hours prior to ovulation, which causes expulsion of the ovum into the fallopian tube. Without the appropriate amount of FSH, follicular atresia will ensue.

Very few people in the United States seek chiropractic care for any reason other than musculoskeletal complaints. However, chiropractic’s founding father, D.D. Palmer, stated that he, “desired to know why one person was ailing and his associate, eating at the same table, working in the same shop…was not.” He then questioned, “Why?” Palmer’s hypothesis was that this was due to interference within the nervous system. Remove the interference and health results. Palmer’s first clinical experience in the removal of said interference within the nervous system, or vertebral subluxation, was in 1895 when Harvey Lilard, a man, deaf for 11 years, had his hearing restored after the first ever chiropractic adjustment.

According to the Association of Chiropractic Colleges, subluxation is defined as a complex of functional and/or structural and/or pathological articular changes that compromise neural integrity and may influence organ system function and general health. Lynch and Boone have shown that the articular structure and function of the spinal column can influence the autonomic nervous system—the visceral division of the nervous system that directly regulates the activity of cardiac muscle, smooth muscle and glands.

The intention of this paper is to describe the subluxation based chiropractic care of a 31-year-old female with a three-year history of infertility. The focus is to explain the detection and correction of vertebral subluxation and the possible implications on reproductive and endocrine health.

Case Report

History

A 31-year-old female homemaker presented to the office for a complete chiropractic examination. At the time of the examination, the patient had a chief complaint of upper back and neck tension, migraine and tension headaches and tingling into the left arm. The onset of her pain was first noticed after the birth of her son. The patient also revealed that she was having menstrual pain, heavy bleeding, and cycles frequently lasting two weeks in duration. Her dysregulation was causing difficulty with daily activities due to heavy bleeding, consequently, keeping her home one to two days a month. She expressed concern because she and her husband had been infertile for a little over three years. Her current medications included Singulair for sinus pressure and she had a surgical laparoscopy as well as dilation and curettage for menstrual irregularities.

Examination

Examination revealed a patient with average build who was concerned and mentally alert. Observation of the patient in the frontal plane revealed forward head posture. Observation in the sagittal plane revealed a left head tilt, a high right shoulder and a high right hip. Cervical range of motion revealed restrictions in flexion/extension, lateral flexion and rotation. Muscle strength, deep tendon reflexes and skin sensation were all within normal limits.

Orthopedic tests performed with (+) results are as follows: Shoulder Depressor (+) R with dull achy pain throughout the cervical spine and into the upper trapezius muscle, Cervical Distraction (+) with increased pain in cervical spine and Soto-Hall (+) with dull achy pain throughout the cervical spine extending down to T4.

Palpation revealed hypertonicity of the rhomboids, trapezius, levator scapulae, cervical paraspinal musculature and mid and lower thoracic paraspinal musculature. Hypomobility and point tenderness were also noted at C1 on the right, C5 on the left, T3, T9 and her sacrum on the right. A cervical radiographic series revealed congenital fusion of the C3/C4 motion segment, a right antalgic lean and a loss of cervical lordosis.

Technologies utilized in the evaluation of the patient’s nervous system were paraspinal electromyography (sEMG), rolling paraspinal thermography and heart rate variability. Segmental asymmetries and alterations of the overall pattern of paraspinal sEMG potentials are associated with vertebral subluxation, and were found at the levels of C1 and C2. The value of thermal scanning is in evaluating degrees of autonomic nervous system abnormalities. The focus is not on differences in temperature from person to person, nor in the same person from moment to moment, but in temperature differences from side to side in one moment.

These differences are maintained within strict limits in healthy persons. Severe abnormalities were found at C2, C3, T8 and S1. Mild abnormalities were found at T7 and T9. It is important to note that vertebral subluxations are contended to result in thermal asymmetry but the levels of asymmetry do not indicate the levels of subluxation. Lastly, heart rate variability, considered a valid gold standard in determining autonomic function specific to the coordination between sympathetic and parasympathetic activity, was found to be normal.

Accumulated data from static and motion palpation, postural...
and radiographic observation, orthopedic and neurological evaluation, heart rate variability, and inclinometric, thermographic and electromyographic studies indicate subluxations at C1, C5, T3, T9 and the right sacroiliac joint.

**Intervention and Outcome**

Initial care was set at a frequency of three visits per week for four weeks, however, the patient was seen two visits per week for six weeks and then sporadically afterward. The adjutive technique utilized to reduce subluxations was Diversified, characterized as a high-velocity, low-amplitude force into a segment of spinal dysfunction. Focus is directed at bringing a dysfunctional joint to tension by taking out extraneous slack in surrounding tissues in order to reach the joint's elastic barrier. A thrust is then delivered along a specific vector in order to reintroduce proper motion. The patient was also advised to supplement her diet with Woman's Purpose Multi-Vitamins, omega-3 oils and Greens First.

The patient noticed that her menstrual cycle, which was currently on day six, stopped the first day she was adjusted. She also reported a normal 4-5 day cycle the next month. This had not happened since the birth of her first son, more than three years prior. The patient's upper back and neck tension decreased only slightly, however, on the third visit she stated that her headaches had lessened and were resolved thereafter. 26 days and eight adjustments later the patient reported that she was pregnant. At the time of writing this paper, the patient has made 19 total visits with the goal of detecting and correcting vertebral subluxation and is six months pregnant.

**Discussion**

Approximately 9.3 million women have used some form of infertility treatment at some point in their lives. The CDC reported that there were 7.3 million infertile women in the U.S. in 2002, with 1.2 million women having had an infertility-related medical appointment. The business of fertility is growing as the industry supplying infertility intervention has grown from 40 clinics in 1986 to 430 in 2007. Current medical treatment includes: Clomiphine citrate (CC) and gonadotropin hormone used for ovulation therapy; intra-uterine insemination (IUI) alone or combined with ovulation induction; and in-vitro fertilization (IVF) and its modifications.

Associated risks of this model include depression, ectopic pregnancies, multiple gestations, reproductive scarring, heavy bleeding, infection, ovarian hyper-stimulation syndrome, and anesthesia complications. It has also been reported that children born through this model may be at an increased risk of a rare genetic disorder that predisposes them to cancer, as well as increased health problems, worse perinatal outcomes, increased hospitalizations, an increased risk of cerebral palsy and developmental and psychological disorders.

In addition to the associated risks and emotional investment, infertility treatments can incur financial hardships. Behrendt reports that couples are spending $750 on Mind/body infertility retreats, up to $3,300 a month on injections and $25,000 on egg donation procedures. Some infertility protocols cost up to $30,000 per menstrual cycle and are leaving women who are desperate to conceive, both physically and emotionally bankrupt.

As opposed to viewing the female reproductive system as a hormonal pool to manipulate, chiropractic focuses its energy at working with the body’s own natural mechanisms to restore balance and homeostasis. Chiropractic addresses the nervous system – the system that directly and indirectly regulates all body functions – and seeks to remove any interference to its fullest expression. It has been suggested that all concepts of subluxation involve two commonalities: kinesiologic dysfunction and some form of neurologic involvement.

The tissues of the intervertebral motion segment include a rich supply of both the somatic and autonomic nervous system. It has been suggested that vertebral subluxations are associated with exaggerated sympathetic activity as well as exaggerated paraspinal muscle tone. Korr proposes, “High sympathetic tone may alter organ and tissue responses to hormones, infectious agents and blood components.” Subluxations have been shown to result in reflex responses of the autonomic nervous system, which could lead to pathological visceral function. Moreover, reproduction is not of immediate importance in survival. In the presence of a stress-induced hyper-sympathetic state, in the form of vertebral subluxation, reproductive function may be challenged.

There is a growing body of evidence that links the management of vertebral subluxation to the restoration of proper function within a woman’s reproductive system and therefore enhancing the ability to conceive. A literature search of the Index of Chiropractic Literature was performed using the following search criteria, searching for peer reviewed citations: “infertility” AND “chiropractic” (keywords) – 27 results. A search of the Annals of Vertebral Subluxation Research and The Journal of Pediatric, Maternal, and Family Health within McCoy Press produced 34 articles using the keyword, “infertility.” Table 1 documents the results from these searches and builds upon the current reviews of infertility within the literature.

Twenty-two articles were found in the literature documenting the care of twenty-five women.

The ages of the patients ranged from 21 years of age to 65 years of age. Sixteen of the patients had sought allopathic treatment for either infertility or menstruation irregularities prior to seeking chiropractic care. The length of infertility ranged from six months to 12 years, though, one patient achieved resolution of a 47-year history of amenorrhea at the age of 65. Length of chiropractic treatment ranged from two weeks to 20 months and the care resulted in 23 of the 25 patients with documented conception. Two of the 25 patients were not attempting conception, and are described in articles by Goodsell and Ressel.

**Conclusion**

This case follows the care of a patient presenting with a chief complaint of upper back and neck tension as well as tension and migraine headaches. The patient’s history also revealed a
3-year history of menstrual pain, heavy bleeding, menstrual cycles of two weeks in duration and infertility. Following one session of care for the removal of vertebral subluxation the patient reported normal menstruation. Following approximately one month and eight adjustments the patient reported she was pregnant. More research with a higher level of design is encouraged and supported in order to further establish the efficacy of chiropractic care in the promotion and restoration of health.

References

Table 1. Infertility in the Chiropractic Literature

<table>
<thead>
<tr>
<th>Author</th>
<th>Age</th>
<th>Length of Infertility</th>
<th>Technique</th>
<th>Previous Care/Hx</th>
<th>Length of Chiropractic and Conception</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adams</td>
<td>22</td>
<td>Primary Amenorrhea</td>
<td>AK/Full Spine</td>
<td>None</td>
<td>Within 20 months</td>
</tr>
<tr>
<td>Alcantara</td>
<td>33</td>
<td>4 yrs</td>
<td>Diversified</td>
<td>Acupuncture, infertility meds, 2 failed IVF</td>
<td>Within 6.5 weeks</td>
</tr>
<tr>
<td>Alcantara</td>
<td>33</td>
<td>2 yrs</td>
<td>Diversified</td>
<td>2 rounds of Clomid</td>
<td>Within 8 weeks</td>
</tr>
<tr>
<td>Alcantara</td>
<td>35</td>
<td>7 mo</td>
<td>Diversified</td>
<td>Hx of irregular menses</td>
<td>Within 2 weeks – miscarried. Again in 5 months – carried to term</td>
</tr>
<tr>
<td>Anderson-Peacock</td>
<td>36</td>
<td>5 yrs</td>
<td>TRT</td>
<td>Inserol, blocked L fallopian tube, damaged R fallopian tube</td>
<td>Within 3 months</td>
</tr>
<tr>
<td>Anderson-Peacock</td>
<td>35</td>
<td>2 yrs</td>
<td>TRT</td>
<td>None</td>
<td>Within 2 months</td>
</tr>
<tr>
<td>Bedell</td>
<td>27</td>
<td>9 mo</td>
<td>TRT</td>
<td>Clomid &amp; Synth Progesterone, ulcerative colitis &amp; 2 miscarriages</td>
<td>Within 3 months</td>
</tr>
<tr>
<td>Blum</td>
<td>32</td>
<td>7 yrs</td>
<td>SOT &amp; CMRT</td>
<td>None</td>
<td>After recovery from colitis</td>
</tr>
<tr>
<td>Cohn</td>
<td>31</td>
<td>9 mo</td>
<td>Diversified</td>
<td>None</td>
<td>Within 5 weeks- non-viable. Again at 13 wks- carried to term</td>
</tr>
<tr>
<td>Gauthier</td>
<td>25</td>
<td>Primary Amenorrhea</td>
<td>Gonstead</td>
<td>Birth Control</td>
<td>Within 19 days</td>
</tr>
<tr>
<td>Goodsell</td>
<td>21</td>
<td>Amenorrhea for 5 yrs</td>
<td>Motion Palpation</td>
<td>Lupron &amp; oral contraceptives</td>
<td>Cycles restart within 12 weeks</td>
</tr>
<tr>
<td>Kaminski</td>
<td>31</td>
<td>&gt; 1 yr</td>
<td>Diversified (3 mo.) TRT (6 mo.)</td>
<td>Clomid for 3 mo, laparoscopy</td>
<td>Within 9 months</td>
</tr>
<tr>
<td>Lyons</td>
<td>27</td>
<td>5 yrs</td>
<td>Gonstead</td>
<td>Fertility Meds</td>
<td>Within 1 month</td>
</tr>
<tr>
<td>Nadler</td>
<td>42</td>
<td>Perimeopause</td>
<td>TRT</td>
<td>None</td>
<td>Within 5 months</td>
</tr>
<tr>
<td>Phillips</td>
<td>37</td>
<td>3 yrs</td>
<td>SOT &amp; Gonstead</td>
<td>IVF</td>
<td>Within 3 months</td>
</tr>
<tr>
<td>Ressel</td>
<td>65</td>
<td>Amenorrhea since 18</td>
<td>Thompson</td>
<td>None</td>
<td>Cycles restart in app. 4 weeks</td>
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<tr>
<td>Rosen</td>
<td>34</td>
<td>12 yrs</td>
<td>SOT</td>
<td>IVF &amp; fertility meds</td>
<td>Within 6 weeks</td>
</tr>
<tr>
<td>Schwanz</td>
<td>29</td>
<td>8 yrs</td>
<td>Gonstead</td>
<td>40-60 day menstrual cycles</td>
<td>Within 3 weeks</td>
</tr>
<tr>
<td>Senzon</td>
<td>34</td>
<td>IVF</td>
<td>NSA</td>
<td>IVF, FSH &amp; Gonadotropin Releasing Hormone</td>
<td>3 months with IVF</td>
</tr>
<tr>
<td>Shelley</td>
<td>32</td>
<td>2 yrs - IVF</td>
<td>DNFT</td>
<td>Artificial Insem, Clomid &amp; IVF</td>
<td>Within 3.5 months with IVF</td>
</tr>
<tr>
<td>Sims</td>
<td>23</td>
<td>1 yr</td>
<td>Diversified</td>
<td>Birth control from 17-22</td>
<td>Within 4.5 weeks</td>
</tr>
<tr>
<td>Stone-McCoy</td>
<td>29</td>
<td>6 mo</td>
<td>Diversified</td>
<td>PCOS</td>
<td>Within 2 months</td>
</tr>
<tr>
<td>Vilan</td>
<td>28</td>
<td>6 mo</td>
<td>Diversified &amp; Cox</td>
<td>Prevera &amp; Clomid, Artificial Insemination, irregular menstruation</td>
<td>Within 6 months</td>
</tr>
<tr>
<td>Wolcott</td>
<td>28</td>
<td>2 yrs</td>
<td>Full Spine</td>
<td>Clomid &amp; Perganol, ovarian cancer</td>
<td>Within 14 adjustments</td>
</tr>
<tr>
<td>Yost</td>
<td>28</td>
<td>1+ yrs</td>
<td>Diversified &amp; Thompson</td>
<td>Infertility med &amp; conception</td>
<td>2 conceptions – none carried to birth</td>
</tr>
</tbody>
</table>

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Infertility