

# Case Study

## Resolution of Amenorrhea, Rib and Low Back Pain Following Chiropractic Care to Reduce Vertebral Subluxation: A Case Report & Review of Literature

Jenny Stofer, DC, MS<sup>1</sup>  
Joel Alcantara, DC, PhD<sup>2</sup>

1. *Private Practice of Chiropractic, Golden Valley, MN*
2. *Research Director, the International Chiropractic Pediatric Association, Media, PA and Faculty of Graduate Studies, Southern Cross University, Gold Coast, AU*

### Abstract

**Objective:** To describe the health outcomes of a patient with amenorrhea, rib and low back pain following chiropractic care to reduce vertebral subluxation.

**Clinical Features:** A 26-yr-old female presented for consultation following a work injury in which she injured her rib and low back. She also had chronic amenorrhea of several years duration.

**Intervention and Outcome:** The patient received care characterized as Diversified Technique consisting of flexion-distraction and drop table as well as high velocity, low amplitude thrust spinal adjustments. Following three weeks of care, the patient reported improvements in her pain complaints and additionally her menstrual cycle returned.

**Conclusion:** This case report provides supporting evidence that patients presenting with symptoms consistent with musculoskeletal complaints and amenorrhea may benefit from chiropractic care.

**Key Words:** *amenorrhea, rib pain, menses, low back pain, vertebral subluxation, chiropractic, adjustment, manipulation*

### Introduction

The use of complementary and alternative medicine (CAM) by women prior to and during pregnancy and in the post-partum period and beyond is highly prevalent.<sup>1-3</sup> As most adults in the United States, they present to chiropractors for neck pain and low back pain<sup>4-5</sup> in addition to wellness and prevention.<sup>6-7</sup>

Of interest in this case report is a woman presenting for chiropractic care with neuromusculoskeletal (NMSK) complaints who following a course of chiropractic care experienced relief from pain and resolution of chronic amenorrhea.

### Case Narrative

A 26-year-old female presented for a chiropractic consultation for care of right rib and low back pain following a lifting accident at work. The patient was working as a bartender which required her to perform activities that were repetitive in nature. A history and physical examination were performed with notable findings of amenorrhea for several years.

Motion palpation revealed vertebral subluxations at the L3-L4

functional spinal unit (FSU) characterized by restrictions in the posterior to anterior motion and a right-rotation malposition of L<sub>3</sub> relative to L<sub>4</sub> vertebral body.

The patient consented to a course of chiropractic care at a frequency of 3-4 times per week for three weeks. Care was characterized as Diversified Technique utilizing a flexion/distraction table. Side posture adjustments characterized as high velocity, low amplitude thrusts were applied to the L<sub>3</sub>-L<sub>4</sub> FSU in addition to utilizing a drop piece for adjustments to the sacrum and sacroiliac joint. A posterior-anterior thrust was also applied to adjust the ribs at the T6 costovertebral junctions on the patient's right side.

Spinal adjustments to the cervical spine were performed at the C<sub>5-6</sub> FSU and the C<sub>1</sub>-C<sub>2</sub> FSU. Adjunctive therapy in the form of soft-tissue therapy was applied to her erector spine muscles, bilaterally. A strap was used across her lumbosacral junction in the horizontal direction.

Following three weeks of care, the patient reported improvements in her rib and low back pain complaints. In addition, the patient reported to be menstruating normally

again following care.

## Discussion

The patient described in this case report presented for chiropractic care with a chief complaint of rib pain and low back pain. Following a course of care, the patient reported resolution of her NMSK complaints. Of interest in this case report was the additional report by the patient of cessation of long-standing amenorrhea. In our efforts to document benefits of chiropractic care beyond their NMSK complaints, we will focus our discussion on the subject of patients presenting with NMSK complaints with resolution of amenorrhea along with relevant issues for chiropractors in the care of such patients.

The prevalence of amenorrhea that is not due to pregnancy, lactation, or menopause has been placed at 3-4% of women.<sup>8-9</sup> Amenorrhea has been defined as: (a) the absence of menstruation for three or more months in women with past menses (i.e., secondary amenorrhea) or (b) the absence of menarche by the age of 15 years in girls who have never menstruated (i.e., primary amenorrhea).<sup>10</sup>

Although the separation of primary versus secondary amenorrhea is said to be artificial; for the patient presented, she more likely had secondary amenorrhea. In a study to examine the epidemiology of secondary amenorrhea, Pettersson et al.<sup>11</sup> found a prevalence of 3.3% for secondary amenorrhea. The three main causes of amenorrhea are in 3 broad categories: (1) Anatomic causes, including pregnancy, that almost always can be identified by physical examination alone, (2) Ovarian failure such as menopause and (3) Endocrine disturbances resulting in chronic anovulation. It is beyond the scope of this paper to address this topic on the causes of amenorrhea. We therefore recommend to the reader the article by Rebar.<sup>10</sup> In addition to the above categories leading to amenorrhea, we should also not forget that weight loss can result in amenorrhea as well as regular endurance training.<sup>12</sup>

## Implications of Chiropractic Care

As a context to further discussions on the chiropractic care of patients with amenorrhea, we performed a systematic review of the literature (see Table 1). Our review found five case reports and two case series. Similar to previous cases published, the patient herein presented with a primary complaint involving NMSK complaint(s) and after a course of chiropractic care, the patient experienced improvement in her presenting complaint in addition to resolution of amenorrhea. In addition to the Gonstead Technique and Applied Kinesiology, the published literature involved care described as Diversified Technique.

## Limitations

We caution the reader on the generalizability of the case report presented based on the post-positivist paradigm of research. With an epistemology of objectivity, confounders to making cause and effect inferences in the case presented include the lack of a control group to account for natural history or effects of placebo as well as the demand characteristics of the therapeutic encounter.

However, based on the paradigm of constructivism where reality is dictated by individual experiences and objectivity is not the aim of research, this case report is epistemologically congruent with evidence-informed practice that supports our need to learn from our clinical experience in informing patients with similar clinical presentations that they can benefit from chiropractic care.

## Conclusion

This study provided supporting evidence on the possible benefits of chiropractic care in patients with amenorrhea and neuromusculoskeletal pain.

## References

1. Yusof J, Mahdy, Noor RM. ZA Use of complementary and alternative medicine in pregnancy and its impact on obstetric outcome. *Complement Ther Clin Pract*. 2016; 25:155-163.
2. Hall HR, Jolly K. Women's use of complementary and alternative medicines during pregnancy: a cross-sectional study. *Midwifery*. 2014;30(5):499-505.
3. Steel A, Adams J, Sibbritt D, Broom A, Gallois C, Frawley J. Determinants of women consulting with a complementary and alternative medicine practitioner for pregnancy-related health conditions. *Women Health*. 2014;54(2):127-144.
4. Coulter ID, Hurwitz EL, Adams AH, Genovese BJ, Hays R, Shekelle PG. Patients using chiropractors in North America: who are they, and why are they in chiropractic care? *Spine (Phila Pa 1976)*. 2002;27(3):291-296.
5. Hurwitz EL, Coulter ID, Adams AH, Genovese BJ, Shekelle PG. Use of chiropractic services from 1985 through 1991 in the United States and Canada. *Am J Public Health*. 1998;88(5):771-776.
6. Blum C, Globe G, Terre L, Mirtz TA, Greene L, Globe D. Multinational survey of chiropractic patients: reasons for seeking care. *J Can Chiropr Assoc*. 2008;52(3):175-184.
7. Alcantara J, Ohm J, Alcantara J. The use of PROMIS and the RAND VSQ9 in chiropractic patients receiving care with the Webster Technique. *Complement Ther Clin Pract*. 2016;23: 110-116.
8. Fries HS, Nillus SJ, Petterson F. Epidemiology of secondary amenorrhea: II. A retrospective evaluation of etiology with special regard to psychogenic factors and weight loss. *Am J Obstet Gynecol* 1974; 118:473.
9. Bachmann GA, Kemmann E. Prevalence of oligomenorrhea and amenorrhea in a college population. *Am J Obstet Gynecol* 1982; 144:98-102.
10. Rebar R. Evaluation of Amenorrhea, Anovulation, and Abnormal Bleeding. In: De Groot LJ, Chrousos G, Dungan K, Feingold KR, Grossman A, Hershman JM, Koch C, Korbonits M, McLachlan R, New M, Purnell J, Rebar R, Singer F, Vinik A, editors. *Endotext* [Internet]. South Dartmouth (MA): MDText.com, Inc.; 2000-2017 Jan 27.
11. Pettersson F, Fries H, Nillus SJ. Epidemiology of secondary amenorrhea. I. Incidence and prevalence rates. *Am J Obstet Gynecol*. 1973;117(1):80-86.
12. Beals KA. Eating behaviors, nutritional status, and menstrual function in elite female adolescent volleyball players. *J Am Diet Assoc*. 2002 Sep;102(9):1293-6.

13. Laframboise MA, Borody C, Stern P. The female athlete triad: a case series and narrative overview. *J Can Chiropr Assoc.* 2013;57(4):316-26.
14. Ko M, Khauv K. Resolution of secondary amenorrhea of 20 years in a woman undergoing subluxation-based chiropractic care. *J Pediatr Matern & Fam Health - Chiropr.* 2012 Spring;2012(2):38-42.
15. Goodsell L, Shtulman I. Resolution of secondary amenorrhea following reduction of vertebral subluxations: A case report. *J Pediatr Matern & Fam Health - Chiropr.* 2011 Spring;2011(2):59-65.
16. Gauthier E, Mullin L. The effects of Gonstead chiropractic care on a patient with primary amenorrhea: a case report and review of related literature. *J Pediatr Matern & Fam Health - Chiropr.* 2010 Summer;2010(3):116-121.
17. Sims L, Lee J. Resolution of infertility in a female undergoing subluxation based chiropractic care: Case report & review of literature. *J Vert Sublux Res.* 2007; AUG(6):1-6.
18. Adams JP. Chiropractic and nutritional management and its effect on the fertility of a diabetic amenorrheal patient: a case report. *J Vert Sublux Res.* 2003; OCT(12):1-2.
19. Curtis G, Young M. Chiropractic management of idiopathic secondary amenorrhoea: a review of two cases. *Br J Chiropr.* 1998 Apr;2(1):12-14.

Reference	Age	Commentary
Laframboise et al. <sup>13</sup>	Case Series	Four patients (two 27-year-olds, a 23-year old and 16-year-old) presented with a variety of signs and symptoms of the female athlete triad including low caloric intake, osteoporosis, amenorrhea and/or endothelial dysfunction. A conservative treatment approach was utilized in each case (i.e., nutritional advice along with rest, ice, rehabilitation, manual therapy, and cessation of running for three weeks) including education on the female athlete triad, education on increased caloric intake and a referral to the family physician.
Ko & Khauv <sup>14</sup>	A 39-year-old	The patient presented for chiropractic care with low- and mid-back pain, tension-and sinus-type headaches, and a 20-year history of secondary amenorrhea. The patient suffered from secondary amenorrhea with painful menses at a frequency of 3-4 months per year since she was 18 years old. Low-dose estrogen was medically prescribed at 37 and 39 years of age to induce her menses. The patient's last menses was 3 months prior to initiating chiropractic care. Following the second visit, the patient reported experiencing her first menstrual cycle in three months. Over a period of 25 visits spanning an 8-month period under chiropractic care (i.e., Diversified Technique), the patient reported seven monthly menstrual cycles over 8 months of care, decreased musculoskeletal pain, and improved general health.
Goodsell & Shtulman <sup>15</sup>	A 21-year-old	The patient presented with a 5-year history of back pain and amenorrhea following sacral trauma. Physical examination including motion and static palpation, postural assessment and the use of thermography and surface electromyography found vertebral subluxations at C <sub>1</sub> , T <sub>1</sub> , T <sub>11</sub> , and L <sub>4</sub> . Chiropractic care (i.e., Diversified Technique) over 12-week period resulted in the patient reporting having her first normal menstrual cycle in 5 years. At 16 weeks of care, the patient reported having normal, regular menstrual cycles for the first time in her life.
Gauthier & Mullin <sup>16</sup>	A 25-year old	The patient had a history of not reaching menses by the age of 18 and only menstruated when on prescription birth control pills. Vertebral subluxations at the patient's right occiput and the S2 sacral segment was addressed with the Gonstead Technique. After three visits, the patient reported her first menstrual period without the use of birth control. Natural progesterone cream was also used as a supplement to chiropractic care and may have been a contributing factor.
Sims & Lee <sup>17</sup>	A 23-year old	The patient presented for chiropractic care to improve her overall health, in the hope that she may ultimately be able to have a child. At the time of the physical examination, the patient had a six-week history of numbness and tingling in her left foot, and within a month the temporary bouts of numbness included both of her legs and feet. The patient was cared for with Diversified Technique over a period of 2 ½ months of care and Toggle/Webster Technique protocols exclusively thereafter. Visits included thermography as an instrumentation procedure. At 3 ½ months of care, the patient reported experiencing her first natural menstrual cycle.
Adams <sup>18</sup>	A 22-year-old	The patient presented with Type 1 diabetes, inability to have a menstrual period without the use of birth control medication, bilateral hip and knee pain, and a skin lesion on her lower leg. At a frequency of spinal adjustments of 3-4 times per month during the first four months of care utilizing Applied Kinesiology, the patient began having regular menstrual cycles.
Courtis & Young <sup>19</sup>	Case series of an 18-year-old and 17-year-old	The 18-year-old attended care 8 times receiving adjustments to the T <sub>6</sub> , T <sub>9</sub> AND L <sub>5</sub> as well as cervical mobilization and SOT pelvic blocks. At 6 weeks follow-up from care, the patient experienced her first menses. The 17-year-old received SOT pelvic blocking, spinal adjustments to the cervical spine and cervico-thoracic junction and soft-tissue work to the sub-occipital muscles along with ergonomic and postural advice. Chiropractic Manipulative Reflex Technique was directed at the L <sub>5</sub> vertebral body along with spinal adjustments to the T <sub>9</sub> -T <sub>10</sub> and L <sub>3</sub> -L <sub>4</sub> vertebral segments. Three weeks later, the patient experience PMS and one month later, menstruation occurred.

**Table 1.** Systematic review of the literature on the chiropractic care of patients with amenorrhea.