

Resolution of unilateral breast-feeding preference and reflux in a 14-week-old infant with a preferred head position following chiropractic care: a case report

By Kayla Beardsley, DC

Kayla Beardsley, DC
Shine Chiropractic, Bucks County, PA
Contact: kay.beards12@gmail.com

ABSTRACT

Objective: Joint misalignment or hypomobility, termed subluxation in the chiropractic profession, can affect even the pediatric patient. Subluxations may present as a multitude of symptoms in this population such as breast-feeding dysfunction, reflux, and a preferred head position, among others. **Presenting Concern:** A 14-week-old infant presented to a chiropractic office with breast-feeding dysfunction, reflux, and a left lateral head tilt. Breast-feeding dysfunction began around four weeks of age and the onset of reflux was nine weeks of age, gradually worsening with time. The infant's left lateral head tilt was noticed by mom, but she is uncertain of time of onset. **Interventions:** A course of chiropractic care was recommended: four visits over the course of three weeks. Modified chiropractic adjustments were administered to restriction of subluxation palpated in the pediatric spine. **Outcomes:** Complete resolution of breast-feeding dysfunction occurred following the first adjustment. Complete resolution of reflux and positional head preference occurred after the second adjustment. No outside referrals were warranted. **Conclusions:** Subluxation in the occipital cervical (C0C1) region which may present as a preferred head position is suggested to influence and produce symptoms such as breast-feeding dysfunction and reflux in the pediatric patient. As positive results were obtained in this case report, it is suggested that chiropractic care may be efficient and effective in evaluating and treating these complaints.

Key words: breast-feeding dysfunction, reflux, preferred head position, head tilt, chiropractic, pediatric.

Introduction

The World Health Organization (WHO) defines the term subluxation as "a lesion or dysfunction in a joint or motion segment in which alignment, movement integrity and/or physiological function are altered, although contact between joint surfaces remains intact. It is essentially a functional entity, which may influence biomechanical and neural integrity".¹ Evaluation of the pediatric patient in the chiropractic office includes examining the infant for subluxations or motion restrictions and then performing an adjustment, manipulation, or mobilization to improve these palpatory findings. In a study performed by Waddington et.al, occipital condylar compression was demonstrated in 95% of healthy newborns that were evaluated 6-72 hours post-delivery. In the same study, motion restriction of at least one cervical vertebra was found in 91% of these same newborns.²

Dysfunction of the occipitoatlantal joint (C0C1) may present in the chiropractic office as a head tilt, preferred head or neck position, torticollis, reduced range of motion, or a unilateral breast preference during breast-feeding.³ A subluxation of C0C1 may also affect cranial nerves (CN) IX, X, XI, and XII due to the proximity of the jugular foramen and hypoglossal canal to the occipital condyles.⁴ In the pediatric patient these cranial nerves play a role in breast-feeding as

they innervate the soft palate, pharynx, tongue, and additional structures associated with the suck-swallow-breath synchrony. Vagal tone may also be impacted and visceral symptoms such as alterations in heart rate, sphincter tone, and gut motility, as well as colic-like symptoms,⁴ vomiting and/or regurgitation may result. This case will report on a pediatric patient with reflux, unilateral breast-feeding dysfunction, and a preferred head position that resolved with a course of chiropractic care.

Case Report

A 14-week-old female presented to a chiropractic office by her mother with the chief complaint of "having a lot of spit up." Upon further questioning during the history, it was also gathered that the infant had preference for the left breast while breast-feeding, refusing to latch onto the right breast, as well as a left sided head preference.

The mother had a healthy and uneventful pregnancy with no traumas or hospitalizations reported. Mom underwent 3-4 ultrasound procedures during the pregnancy and was prescribed Zofran to help prevent nausea during the first trimester. The child was born vaginally, at 40.1 weeks gestation in a hospital setting. The mother had been induced and given an epidural. Total labor duration was 8 hours, with the second stage of labor lasting 15 minutes. There was no

birth trauma to the newborn reported.

The infant was exclusively breast fed for approximately one month before mom began supplementing with formula due to mild lactation difficulties and because the infant would not latch onto the right breast. Mom stated the onset of her newborns reflux was gradual but had been occurring more frequently in the past month. Reflux was described as constant vomiting that occurred for 30 minutes after each feeding and milk would be curdled.

Physical examination revealed a calm, alert, and apparently healthy 14-week-old infant. A left lateral tilt of the occiput on C1 was noted where the right occipital condyle was translated laterally. The infant's vitals including height, weight, head and chest circumference were within normal limits (WNL) for this age group. Primitive reflexes including plantar/palmar grasp, asymmetric tonic neck reflex, Moro, Babinski, Galant, Allis, Ortolani's, stepping, and placing were WNL for this age group with the exception of the rooting reflex which was absent. However, the infant had just been fed prior to examination and it was concluded to be a normal variant. Cervical range of motion (ROM) was reduced in right lateral flexion. Right temporomandibular joint (TMJ) ROM was reduced upon opening. Suckling was determined to be shallow and a posterior ankyloglossia (tongue tie) was also noted. No functional testing was performed to assess if the tongue tie was restricting tongue mobility and interfering with latch. Assessment of the gluteal cleft revealed a right deviation. Cranial motion restrictions were noted in bilateral sphenoid and left occiput. Spinal motion restrictions were noted at T5, T7, L1, the sacrum, and left lateralization of C1. There was a withdrawal reflex noted upon palpating the right thoracic paraspinals along the scapula as well as the musculature overlying the left transverse process of C1. The working diagnosis was craniocervical syndrome.

The first treatment was performed to restore motion to restrictions found in the cranial and spinal regions noted above. In the cranium and cervical spine, a light manual fingertip contact was taken at specific contact points on vertebral segments felt to have decreased motion. The correction was made in the direction needed to restore this loss of motion with a sustained, gentle, and vibratory stimulation. The Activator adjustment tool was utilized on the lightest setting to the thoracic, lumbar, and sacral spinal restrictions. Abdominal "I Love U" massage was also performed in the office.

Abdominal "I Love U" massage is manual stimulation of the abdomen performed with pressure from two to three fingers, beginning at the infants right lower quadrant and working to the left lower quadrant; following the direction

of the large intestine. First, the performer massages the letter "I" by working upwards from the right lower quadrant to the right upper quadrant. Beginning at the right lower quadrant again, the performer massages the letter "L" by massaging upwards to the right upper quadrant then across the abdomen to the left upper quadrant. Lastly, beginning at the right lower quadrant, the performer traces the "U" and ends in the left lower quadrant to form an "U"

It was recommended that mom perform the "I Love U" massage at least twice daily. Mom was also instructed to consult with a local pediatric dentist to perform a functional assessment of the tongue to evaluate if the posterior tongue tie was hindering the infants latch. The recommended chiropractic treatment plan was once a week for two weeks.

At the next follow-up appointment (visit #2), a week after initial examination and treatment, mom reported a potential adverse reaction to treatment: the infant had been fussy for approximately three days following the first adjustment. However, the vomiting had reduced from occurring for 30 consecutive minutes post feeding to occurring for 10 consecutive minutes post feeds. The infant also began latching onto the right breast fully with no difficulties.

Chiropractic treatment was rendered in the same way as visit #1 where motion restrictions were found at the left occiput, C1, T5, sacrum, and right temporomandibular joint and mobilized, appropriately modified for gestational age and size.

Due to the fussiness noted after the initial treatment, it was requested that the infant follow up again at the end of the week. At this appointment (visit #3), mom reports no fussiness had occurred following treatment #2. She also stated the infant continued to breast-feed equally on the left and right breast and no reflux was occurring following feedings. Objectively, the right occipital condyle was no longer translated laterally, resolving the lateral tilt of the occiput on C1. Also, the right temporomandibular joint had equal motion when compared to the left temporomandibular joint. Chiropractic treatment was rendered again in the same way as visit #1 and #2 where motion restrictions were found at C1 and sacrum and mobilized appropriately.

Follow-up was recommended within a week, but due to a holiday weekend the next follow up was scheduled for two weeks. At that appointment (visit #4) mom reports "perfect" breast-feeding, no fussiness, no reflux, and no left sided head preference. Mom did not make an appointment with the pediatric dentist due to the resolution of breast-feeding dysfunction. Table 1 (following page) summarizes service rendered, subjective, and objective findings at each visit.

Visit #: Date	Service Rendered	Symptoms/Subjective	Objective Findings
#1: 6/18/18	Chiropractic examination and adjustment.	Reflux for 30 consecutive minutes post-feedings, left-sided breast preference and left-head preference.	Motion restrictions C1, T5, T7, L1, sacrum, L occiput, R TMJ, B sphenoid. Withdrawal reflex and hypertonicity at L suboccipital and R thoracic paraspinal. L lateral tilt of occiput on C1.
#2: 6/25/18	Chiropractic adjustment.	Reflux for 10 consecutive minutes post-feeding and latching equally on both breasts.	Motion restrictions C1, T5, sacrum, left occiput, R TMJ. Decreased hypertonicity at L suboccipital.
#3: 6/29/18	Chiropractic adjustment.	Latching equally on both breasts. No reflux.	Motion restriction C1, sacrum. L lateral tilt of occiput absent. Full cervical ROM. Full TMJ ROM.
#4: 7/10/18	Chiropractic adjustment.	Latching equally on both breasts. No reflux. No left-sided head preference.	Motion restriction C1 No withdrawal reflex noted at any spinal level.

Table 1. Summary of service rendered, subjective, and objective findings at each visit.

Discussion

The prevalence of a preferred head position is a common finding in the pediatric population. In a clinical assessment 55 (65%) out of 90 infants were found to have an abnormal supine posture for his/her age, with a preferred head or neck placement being most common (73%).⁵ A preferred head position is generally the result of an occipitoatlantal (C0C1) subluxation which was present in 70% of infants experiencing breast-feeding difficulties in a study performed by Stewart, whereas a subluxation of the atlantoaxial joint (C1C2) was found in 30% of those same infants.⁶ In another study, Fludder et. al, set out to determine whether different regions of spinal joint dysfunction were associated with different presentations of behavior in their retrospective case series. Data was collected from 195 cases. When determining regions of spinal dysfunction related to preferred head position, 43.5% of infants presented with cervical joint dysfunction only. When evaluating breast-feeding difficulty, 56.5% also demonstrated cervical joint dysfunction.⁷ Misalignment of the occipitocervical spine may lead to altered biomechanics, reduced range of motion of the C0C1 junction or cervical spine, and perhaps pain when performing these active movements. In a standard, cross cradle hold during breast-feeding, the baby's head laterally flexes away from the breast it is latching onto, i.e.: right lateral flexion of the occipitocervical spine to latch onto the right breast.³ When you consider in the instance of this case report, there was left lateralization of the C1 vertebra and reduced ability to laterally flex to the right, this could account for the refusal to latch onto the right breast and a preference to feed from the left.

When the proximity of the jugular foramen and the hypoglossal canal to the C0C1 junction is considered, it can be appreciated how a subluxation of either an occipital condyle or C1 could decrease foramen patency and alter the

associated cranial nerves. Cranial nerves IX, X, and XII play a role in breast-feeding as they innervate the soft palate, muscles of the tongue, pharynx, and esophagus. Cranial nerve X (Vagus) is part of the parasympathetic nervous system and innervates visceral organs such as the heart, stomach, and intestines. In Fludder's study, 73.9% of infants with cervical spine dysfunction demonstrated vagal nerve symptoms such as an uncoordinated suck-swallow-breath synchrony, as well as reflux, regurgitation and/or vomiting.⁷ Additional vagal symptoms include altered heart rate, sphincter tone, and gut motility.^{4,8} Parasympathetic tone decreases in the presence of noxious stimuli,⁸ such as a subluxation, whereas the sympathetic nervous system reacts, increasing its activity. In the absence of external challenges, the parasympathetic nervous system optimizes the function of the internal viscera.⁸ Alteration in vagal function and an increase in sympathetic tone due to occipitocervical subluxation can be one explanation of reflux symptoms in this case report. Waddington et. al, suggests that removal of somatic dysfunction through manipulation has been found to reduce gastrointestinal symptoms² and more specifically, Welch et. al preliminarily suggests that adjustments to the cervical spine produce a parasympathetic response.⁹ Additionally, infants receiving tactile and kinesthetic stimulation, such as massage, demonstrated significantly increased vagal activity when compared to that of control groups.¹⁰ Gut motility has also been shown to increase with infant massage.¹¹ The "I Love U" massage that was performed and prescribed in this case report may therefore have aided in producing a parasympathetic response and decreasing the reflux experienced by this patient.

Conclusion

In this case, the correction of subluxation throughout the pediatric spine, with particular attention to the occipitoatlantal junction was followed by a reduction of reflux, reso-

lution of breast preference during feeding, resolution of the lateral head tilt and preferred head position. A limitation of this case reports is that conclusions are based on the outcomes of one individual. Outcomes obtained in this case report may have been the natural progression of the condi-

tion and may have resolved without outside intervention. More research is needed to investigate the role chiropractic care may play in reducing or resolving similar symptoms in infants.

References

- 1: WHO Guidelines on Basic Training and Safety in Chiropractic. 2005.
- 2: Waddington EL, Snider KT, Lockwood MD, Pazdernik VK. Incidence of Somatic Dysfunction in Healthy Newborns. *The Journal of the American Osteopathic Association*. 2015;115(11):654-665. doi:10.7556/jaoa.2015.136.
- 3: Fysh PN. *Chiropractic Care for the Pediatric Patient*. Arlington, VA: International Chiropractors Association, Council on Chiropractic Pediatrics; 2010.
- 4: Vallone S. Evaluation and treatment of breastfeeding difficulties associated with cervicocranial dysfunction: a chiropractic perspective. *Journal of Clinical Chiropractic Pediatrics*. 2016;15(3):1301-1305.
- 5: Alvestad Slettebo C, Miller JE. Prevalence of musculoskeletal dysfunction in infants presenting for chiropractic care in Norway: A cross-sectional study. *Journal of Clinical Chiropractic Pediatrics*. 2017;16(1):1355-1361.
- 6: Stewart A. Paediatric chiropractic and infant breastfeeding difficulties: A pilot case series study involving 19 cases. *Chiropractic Journal of Australia*. 2012;42:98—107.
- 7: Fludder CJ, Keil BG. Presentation of neonates and infants with spinal vs extremity joint dysfunction. *Chiropractic Journal of Australia*. 2018;46(1):79-91.
- 8: Porges SW. Vagal tone: A physiologic marker of stress vulnerability. *Pediatrics*. 1992;90(3):498-504.
- 9: Welch A, Boone R. Sympathetic and parasympathetic responses to specific diversified adjustments to chiropractic vertebral subluxations of the cervical and thoracic spine. *Journal of Chiropractic Medicine*. 2008;7(3):86-93.
- 10: Field T, Diego M. Vagal activity, early growth, and emotional development. *Infant Behavior & Development*. 2008;31:361-373.
- 11: Lee, H.K. The effect of infant massage on weight gain, physiological and behavioral responses in premature infants. *Taehan Kanho Hakhoe Chi*. 2005;35(8): 1452—1460.