

Improved digestion, sleep and mood in an 8-month-old male under Chiropractic care: A case report

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Background: An 8-month-old male was presented for Chiropractic care with parental concerns primarily related to sleep, muscle strength and digestion. In addition to these stated concerns, his parents were concerned about sleep, excessive gagging and vomiting on solid food, hypersensitivity to touch and a regression in skill levels. Hypotonicity and breastfeeding issues were also flagged as problematic.

Intervention: The infant was placed on a Chiropractic care plan, whereby he was managed using Diversified and Activator methods, in addition to spinal adjusting and peripheral adjusting, all modified to be appropriate for his age and tensile strength.

Outcomes: Significant positive changes were noted across all the stated areas of concern, concomitant with Chiropractic care. While the infant continued under Chiropractic care after the period of the initial care plan, the changes meant parents were able to work with the chiropractor to resolve issues relating to hypersensitivities, hypertonicity, feeding, sleeping, mood and more.

Conclusion: This case report shows multi-system improvements in the infant's physiology and development, and no other interventions were introduced during his time under care. This may provide a rationale for future studies examining sympathetic and specifically vagal tone, in infants under Chiropractic care and how this might contribute to mood, digestion and development.

Indexing Terms: Chiropractic; Subluxation; infant care; adaptability; vagal tone.

Introduction

Research into Chiropractic care for infants and paediatric populations has, up until now, been focused on either case report data, or larger studies related to safety, efficacy, tensile strengths and single, significant issues such as colic, breastfeeding and latch issues.

While the uninformed may assume there is no need for Chiropractic care in an infant, the plethora of data available in case reports shows there is cause for further investigation as supporting infant neurodevelopment and nervous system optimisation is important during this time of neuronal proliferation and growth.

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Core to this case are several areas of interest: breastfeeding, in particular latching, adaptability, hypertonicity and hypersensitivity. While the former indicates biomechanical issues relating to the mouth and cranium, other issues indicate elevated sympathetic tone. While hypertonicity has documented links to development, and in some cases developmental delay, there is also literature indicating that elevated sympathetic tone may be a complicating factor. (1, 2) Thus, a chiropractor's role in supporting autonomic balance and resolution of movement issues becomes a neurological issue and not a biomechanical issue alone.

This case documents improvements in sleep, muscle strength, and digestion in an 8-month-old male under Chiropractic care. This case contributes to the focus on non-musculoskeletal presentations emerging in chiropractic literature, and highlights the impact of age-appropriate Chiropractic care on children struggling with symptoms of poor adaptability and physical resilience. Additionally, as this article covers subluxation-based care for the infant, it should be noted that the *Australian Spinal Research Foundation's* definition of subluxation is '*a diminished state of being, comprising of a state of reduced coherence, altered biomechanical function, altered neurological function and altered adaptability*'.

Case details

An 8-month-old male, new to Chiropractic care, was brought to our Chiropractic clinic by his mother who reported that he suffered from severe gagging resulting in vomiting with soft foods following solid introduction six weeks prior. While the infant could tolerate firmer foods, he would gag on soft foods and reject spoon feeding. During the history and examination taken by the Chiropractor at the time of the presentation, numerous secondary complaints were noted. These comprised frequent night waking, and daytime fatigue, where previously he was a happy and settled baby. The infant had begun choking on water overhead during swimming lessons, which was abnormal compared to prior presentation. The infant could not tolerate his head or face being lightly touched and reacted to even having tissues near his face.

Medical history

The patient's medical history began with an unremarkable birth. He was the third child, born at 40+(11/40) weeks gestation. His birth was protracted, at just 1 hour and 20 mins with no birth interventions and no signs of trauma. However, maternal stress during gestation was noted. The mother worked as an emergency nurse, she reported having '*average*' morning sickness, and good mental health.

The mother reported that early breastfeeding efforts were marked by issues including shallow latching, maternal pain, nipple damage, and mastitis at 1.5 weeks old. However there were no weight gain issues. The infant had his tongue tie released with scissors by another health practitioner at four weeks old. Feeding improved significantly after this intervention, and stretches were done routinely. His tongue tie was diagnosed as reattached at 10 days post-frenectomy check and frenectomy with scissors performed again.

One month later, with the infant now aged approximately ten weeks old, feeding pain and latch regression were noted by the mother. At this point, the tongue tie was reassessed and revised again by scissors and with feeding positional instructions given. In the initial Chiropractic consultation, the mother noted that baby positioning during feeding made the difference, not the third tie revision. She also noted that the infant would never take a dummy or a bottle.

When asked about sleep, the mother remarked that the infant had slept well until six months old when he became affected by sickness and teething. At this point, he began waking four to five times at night. Thus, the infant became unsettled and fatigued during the day, which was reflected in his mood and behaviour, whereas he was previously a very happy, settled baby. His bowel

movements were reported as having been mucousy 'on and off since birth', with some distress in the car seat, although this was improving at the time of the initial consultation.

Clinical findings

Exam #1

The initial consultation revealed the following:

Joint & bone

The patient was found to have moderate cranial restrictions throughout his head, particularly on the right. There was mild right flattening with a *Plagiocephaly Index* of 3mm. Spinal range of motion (ROM) was moderately reduced in the neck and upper back, particularly on the right side. The pelvis was also restricted on the right side and the patient's shoulders and left elbow were found to be restricted.

Nerve & muscle

Areas of subluxation were noted at the right occiput and right C1, T2, T7, L5, S2 and right sacroiliac joint. The patient's cranial nerve tests showed reduced tone of the face, particularly on the left. His gag reflex is severely heightened and forward of normal location. There was a persistent tongue tie and bilateral buccal ties (L>R). His muscle tone was rated excellent overall with only mild left shoulder tone reduction noted. Muscle reflexes fired well overall too, and were only found to be reduced at the ankles.

Global posture

The patient had a strong left head tilt across all postures and no other persistent posturing was present in the shoulders or pelvis. Cranial imaging showed asymmetry with mild flattening at the right back, with some compensatory bulging at the right front and left back of the head.

Brain function

The patient's MORO (startle) Reflex was noted as persistent and heightened and there were also strong rooting reflexes present on both sides, which should have begun to integrate at this stage of development. Postural reflexes were found to fire well. Gross motor and socioemotional development was noted as being age-appropriate.

At the first examination, subluxations were found at the right Atlas and Occiput and right C1, T2, T7, L5, S2 and the right sacroiliac joint.

The 'Well Kids Examination Form' was used at the initial consultation and review consultations, with comprehensive structural, musculoskeletal and neurological testing including neurodevelopment assessment. A parent questionnaire including quality of life measures was also completed at the initial consultation and review.

The parent's verbal feedback including subjective progress with solids, sleep, and health history was taken from visit to visit.

Management

Following the initial consultation, the patient was placed on an initial care plan. He was to be seen twice weekly for four weeks, and then weekly for two weeks (including the review and review report visits).

The immediate goal was to support the patient's brain and body toward greater function and more neurological settledness with adjustments. The chiropractor aimed to see improved postural alignment, better ROM (especially pertaining to the cranium, neck, and shoulders), and achieve better autonomic balance with less brainstem sensitivity.

Specific areas of focus included the Occiput and C1 subluxation adjusting, Cranial and palate adjusting, spinal adjusting, and FPR reflex integration with vagal nerve stimulation.

During care, Diversified technique was used, having been modified to be age-appropriate for an infant. The Sacro-Occipital approach was also used with age-appropriate adjusting techniques with hands and tools such as activator and peripheral drop pieces.

Additional care recommendations included the following:

- ▶ Orofacial stimulation: allowing the infant to chew on silicone kitchen utensils frequently. The parents were also advised to spend 5-10 minutes each day touching his head, hair, forehead and cheeks with stroking and light touch. The Chiropractor advised parents to begin during feeds, and as his sensory overload/aversion reduces, it could be done while they were just sitting together. Over time, depending on the outcomes, the MyoMunchee was flagged as a possibility for further orofacial stimulation over the coming weeks.
- ▶ Sublingual tissue release: The Chiropractor advised to hold the baby upright, with his back to the caregiver's belly, and then to reach around and place your index finger in the mouth and under the tongue. The caregiver was to gently massage each side of the frenulum while looking in the mirror. This acts as a good distraction for the baby and the caregiver will be able to stay there longer. To further facilitate this, the Chiropractor advised caregivers to try and do a scoop and lift movement under the tongue from the gum, and to aim for at least 30 seconds.
- ▶ Vagal toning exercises: This could be as simple as low humming or singing with the infant held in the caregiver's arms so he could feel the vibrations.
- ▶ Deep pressure squeezes of the arms and legs all the way to the hands and feet were recommended to. This was recommended to aim for one to two minutes before mealtimes.
- ▶ Ball rocking and ball bouncing were recommended for five to ten minutes a day to stimulate further cortical maturity to override brainstem sensitivity.

Outcomes

The review session was scheduled following eight adjustments at a frequency of twice weekly. This included the adjustment provided at the initial consultation.

At the review session, parents reported that the infant had a much happier disposition than before Chiropractic care. The patient's MORO reflex had mostly integrated, with only an inhale response noted with head extension. His gag reflex was now more appropriately located, whilst still only mildly heightened on the right soft palate and right pterygoid region. His left head tilt persisted, induced by the persistent right posterior Occiput subluxation.

Clinical findings were significantly improved.

Exam #2:

Joint & bone

The patient's cranium was moving better overall, particularly through the back of the head. The Chiropractor could visualise the positive changes to head shape in posture images. While some residual tension remained through the frontal bones and coronal sutures, spinal ROM had improved significantly, particularly in the upper and lower back regions. His neck remained mildly restricted on the right and the left shoulder and elbow were still mildly restricted, but the right shoulder had normalised.

Nerve & muscle

Subluxation patterns remained quite similar, with right posterior occiput and right C1, R C7/ rib 1, T2, T9, and L5 still featuring. However, there was a mild reduction as compared with the initial consultation.

At the first examination, subluxations were found at the right atlas and occiput, and right C1, T2, T7, L5, and S2 as well as the right sacroiliac joint.

At this second examination, subluxations were found at the right posterior occiput, and right C1, right C7/rib 1, T2, T9, and L5.

The patient's cranial nerve tests showed significant improvement in oral sensitivity inducing gag reflex. However, a mild gag reflex remained heightened on the right including during gum/jaw palpation. At this review, pupillary constriction was mildly reduced and difficult to maintain, whereas the left pupillary constriction was excellent. Muscle reflexes continued to fire well overall with a reduction noted only at the ankles.

Global posture

The patient's head tilt persisted across all images, however the severity had improved significantly. Tilting was induced by the persistent right posterior occiput subluxation (with a lift at the right back of the neck). Tone and lift of the upper back were significantly improved in tummy time, and the patient had now progressed to using all fours.

Postural tone when seated was noted as appropriate, and there had been a significant improvement to the flattening and distortion at the right back, with greater 'rounding out' at the back right.

Brain function

The patient's MORO reflex was somewhat integrated but still mildly present, with a mild inhale response. Notably, however, his arms were no longer reacting. A mild right rooting reflex persisted, though with significant improvement and integration to the left rooting and sucking reflex now noted by the Chiropractor. A mild right palmar grasp reflex was now noted but postural reflexes continue to fire very well. Gross motor tests showed a mild reduction in chin tuck and left shoulder tone during pull-to-sit but rolling reflexes are symmetrical.

As for the initial concerns, the parents now noted that the infant had improved '*remarkably well*' when it came to gagging on soft foods. There was no longer any vomiting, this ceased within the first week of care. There was still some mild gagging occasionally, but the majority of his diet could be eaten without concern. Bowel movements could still be mucousy at times, and this was not always linked to maternal dairy intake, but significant improvements were noted in this and dietary function overall.

The infant's head and facial sensitivity had vastly improved and he was now fine with water over his head in the bath. Swimming lessons, however, had ceased due to his stress (around the time Chiropractic care began).

The patient's parents were happy to report that his sleep had significantly improved, with the infant now only waking once for feeds or sleeping through the night. His daytime sleep could now be three to four hours long and he was reported as being '*back to his happy self unless teething*'.

The parents also noted significant improvements in the following:

- ▶ Sleeping patterns and quality
- ▶ Crawling or walking ability
- ▶ Coordination and balance
- ▶ Freedom of movement/relaxed body
- ▶ More active movement/strength
- ▶ Achieving certain milestones
- ▶ Posture
- ▶ Resolution of feeding issues including a poor latch

- ▶ Decreased 'spitting up'

Discussion

This case details the care plan and outcomes of an infant receiving Chiropractic care for sleep issues, digestion and feeding, muscle strength, and general discontentedness. Notable improvements were reported by the mother of the infant, with his ability to eat safely, sleep quantity, mood, and overall quality of life for both the mother and child. There were also improvements observed in primitive reflex integration and orofacial function.

Since the infant received only Chiropractic adjustments and the additional home care recommendations, it follows that Chiropractic care was likely the main facilitator of the positive changes reported in this case. Previous case reports support the findings of this case report, particularly the improvements in latching and digestion. Cases of resolved latching issues, related to TMJ hypertonicity, mouth ties, and range of motion in the neck and shoulders, have suggested a connection between these complications and vertebral subluxations. (3, 4) Similarly, cases of improved reflux and digestion in infants receiving Chiropractic care were concurrent with corrections of subluxation, and improved cranial nerve function and cranial symmetry. (5, 6) This case contributes to the growing number of studies in this area, further highlighting the connection between subluxation and adaptability, particularly in infants.

Conclusion

A review of the evidence that Chiropractic care helps suboptimal breastfeeding (7) reports that:

- ▶ A low-to-moderate level of evidence exists that Chiropractic care can benefit the breastfeeding process, mainly from a lack of larger-scale studies, which can be more difficult to conduct ethically.
- ▶ The larger studies that do exist, exist mostly in the form of cohort studies. The reviewers offer the astute observation that even these studies, although showing encouraging results, lack control groups to compare changes against, and as such are only able to suggest potential links between Chiropractic care and the improvement in breastfeeding dysfunction.

This case highlights the broad benefits Chiropractic care can have beyond '*pain and movement*' especially in the very young.

As we work with optimising nervous system function across the lifespan through Chiropractic care a person's resilience and adaptability can and does improve. This case is evidence of the profound impact Chiropractic care can have on well-being concerns in infants.

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About the Chiropractor

Dr Amanda Watson is a passionate Chiropractor specialising in paediatric care. Her focus is on understanding children's bodily functions and nervous system development. In 2015, she founded *Empowering Mums*, an education-based business providing parents with tools to help their children thrive. Amanda has focused her post-graduate training on paediatric chiropractic. She is currently completing her Diplomate of Chiropractic Paediatric Neurodevelopment.

About the Case Report project

This Case Report is a part of the [ASRF Case Report Project 2021](#), a project designed to gather client studies from chiropractors and transform them into much-needed case reports, focused on the effects of chiropractic care on clinical presentations highly relevant to chiropractic, such as stress, immunity and adaptability. This project was made possible by the generous fundraising and contributions of ASRF supporters.

