

# Collaborative chiropractic management of breastfeeding difficulties in a neonate: A case study

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## ABSTRACT

Poor weight gain in the neonatal period is concerning. This paper outlines the management of care for a 3-week-old neonate that had significant weight loss and breastfeeding difficulty. Recognition of dysfunction in the mechanical aspects of breastfeeding by the International Board-Certified Lactation Consultant led to referral to a chiropractic clinic. This case study outlines the role that a chiropractor may play in encouraging the breastfeeding dyad with a collaborative approach. Chiropractic recognition of cervical, temporomandibular and shoulder dysfunction in the infant during the early crucial phase may assist this population in establishing good breastfeeding function. This paper describes the biomechanical, neurological, and clinical indicators, circumstances, and what role they may play in affecting the continuation of exclusive breastfeeding.

**Key Words:** Chiropractic, Infant, Neonate, Breastfeeding, Pediatrics, IBCLC.

### Introduction

Chiropractors are often utilised by parents of infants with breastfeeding difficulties. Early intervention to encourage and support the breastfeeding dyad is important in establishing a consistent and functional breastfeeding relationship. Chiropractors are well placed to recognise dysfunction that may have been due to a neuromuscular origin from inutero positioning or the birth process. Spinal dysfunction is one aspect that has been recognised as a factor that may contribute to poor latching or sucking.<sup>1-3</sup> Hawk et al (2018) concluded that there was a “moderate level of favourable evidence supporting the use of manual interventions for infants with musculoskeletal dysfunctions and suboptimal breastfeeding.”<sup>4</sup>

Breastmilk is, of course, the nutrition of choice for infants and very few mothers set out on their journey as a new mother thinking that they will not be able to engage successfully in this fundamental activity.<sup>5</sup> Breastfeeding success has lifelong benefits to both mother and child. Formula feeding is not ideal, but it is also a necessary alternative sometimes. When managing this population in clinical practice it is important that the health professional understands the normal mechanics of breastfeeding. The functional aspect of breastfeeding involves many neuromuscular and positional aspects to combine in harmony. A first-time mother faced with a difficult birth or lack of support could be a recipe for early cessation of breastfeeding. Chiropractors can play a significant role, alongside other health professionals, in encouraging exclusive breastfeeding where possible.

### Case History

A 3-week-old female neonate was brought to the clinic by her mother and father for chiropractic care after

recommendation from their lactation consultant. She had been assessed for tongue tie with an International Board-Certified Lactation Consultant (IBCLC) and suggested chiropractic care due to a complex birth and some ambiguity on whether tongue dysfunction was the main cause for breastfeeding concerns.

The infant had been struggling to attach and latch consistently to the breast. The mother reported pain and frustration at the length of time at the breast and the number of times she had to reattach the infant. The infant would often arch, fuss and cry at the breast while feeding and although the mother reported an abundance of milk supply the infant had not returned to birth weight at 2-weeks.

The parents discussed their distress for the infant and the fact that it was taking about an hour to feed the baby. She would then fall asleep at the breast waking about 40 minutes later ready for the next feed. Both parents reported they were exhausted and were considering moving to formula as it was all becoming too difficult.

The infant was their first live birth at a hospital, vaginally delivered after 25 hours of labour with use of forceps after 2 hours of final stage. APGAR scores were 7 and 9 at 1 and 5 minutes respectively. Birth weight was 3850g and head circumference was 35cm.

### Clinical Findings

Initial physical examination revealed an underweight (3210g), sleepy female infant. All vital signs were within normal limits.

Gentle palpation revealed right occiput restriction and

right shoulder A-P restriction. Moro reflex was diminished on the right in first and 2nd phase. Her right TMJ was also restricted, and on opening the jaw, the gape was narrow on the right side. The rooting and suck reflexes were slightly sluggish. On inspection there were some faded red marks on the side of her head which the parents explained were from the forceps. Tongue lateralisation and elevation was good but sluggish on the right, especially noted on crying. All other neurological examinations were within normal range.

### Chiropractic Diagnosis

This infant had a restricted C1/Occiput joint, right temporomandibular and glenohumeral joint restriction which could possibly be linked to a long labor and use of forceps at birth.

### Chiropractic Treatment

#### Visit 1: (3 weeks old)

Initial treatment consisted of Gonstead based ASRS occiput rocking articulation within the physiological range of motion in accordance with the Chiropractic Board of Australia's directive for treatment for the under 2-year-old. Appropriate modifications were made according to the infant's size, age, and skeletal maturity.

A right a-p glenohumeral impulse was also made to encourage better motion in right shoulder. The infants' arm held at 90° lateral abduction, the thumb and index finger of the hand holding the humerus contacting the proximal humerus as close as possible to the humeral head with the other hand stabilizing the scapula and clavicle to prevent shoulder girdle movement.

Gentle muscle release was also applied to her sub occipital muscles, right pterygoids, mentalis, orbicularis oris, digastric, suprahyoid and buccinator muscles. Particular attention was given to encourage right TMJ mobility.

#### Visit 2: (3.5 weeks old)

Three days later, the infant returned. The parents reported slight improvement on attachment and less fuss associated with feeding. Feeding time had reduced to 40 minutes. The same treatment was applied again with encouragement to discuss feeding options with their IBCLC again.

#### Visit 3 (4 Weeks old)

One week after the initial visit, the parents presented the infant and mother related that there was significant improvement. The mother reported a more comfortable, deeper latch and less fussiness when placed at the breast. Feeding was taking about 30 minutes. The infant had also increased her weight by 350g. The infant had improved in suck strength and function but Moro on the right was still

diminished. At this point she did not need another occiput treatment but did require another shoulder adjustment.

#### Visit 4: (5 weeks old)

She was seen once more a week later and again had gained another 350g. Shoulder function was still slightly decreased, and her jaw was still asymmetrical. Gonstead ASRS occiput rocking articulation was given on this visit along with suprahyoid muscle release, right GH joint adjustment and TMJ release.

During this appointment care options were discussed, deciding that we would leave the next treatment until she was 8 weeks (3 weeks later) and if at that point she continued to improve we would review again at 12 weeks old.

#### Visit 5: (8 weeks old)

Parent reported continued no maternal pain/discomfort, weight gain and improvement on attachment, alertness, and ability to feed "quickly" (20 minutes). She was no longer falling asleep at the breast and was consistently smiling and relaxed after a feed. Her weight at this point was 5090g. Mild dysfunction was noted in her right TMJ and Glenohumeral Joint with some mild functional asymmetry still present and gentle adjustments were given.

#### Visit 6: (12 weeks old)

During this review clinical assessment revealed a weight of 6107g, head circumference of 39cm and good functional head control on tummy time. Pull to sit was good with no head lag. Dysfunction was noted in her right TMJ and glenohumeral joint with some mild functional asymmetry still present.

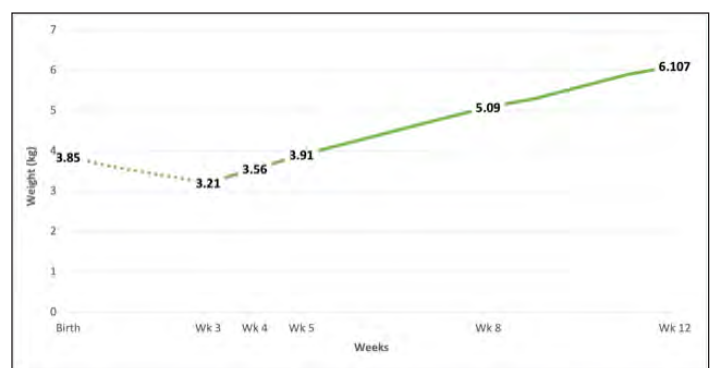


Figure 1. Weight graph for infant.

### Discussion

Breastfeeding can be a joyous, engaging time for a new mother or it can be fraught with high anxiety, pain, and frustration. Despite most mothers embarking on this journey, few continue successfully. Breast milk provides many benefits for the mother and infant including valuable

nutrition and immunological support. In 2017-18 around 61% of children between 4-47 months had been exclusively breastfed to at least 4 months of age.<sup>6</sup>

The impact of the birthing process and any possible bruising or strain to an infant's cranium, neck or extremities can be difficult to assess on an infant.<sup>7</sup> Equally as difficult is establishing any causal properties that can be contributing to suboptimal breastfeeding. In Australia an IBCLC is often the first point of contact for the mother that is struggling with breastfeeding. Irritation and strain on structures such as the cranium, neck, temporomandibular joint or shoulder could impede successful breastfeeding journey.<sup>8-12</sup> Recognition of dysfunction and management of these infants should be shared among a number of health practitioners to encourage the breastfeeding dyad for as long as possible. Lavigne found that about 50% of IBCLC's were comfortable recognizing musculoskeletal issues in babies and 91% noticed improvement in breastfeeding after manual therapy.<sup>13</sup>

To swallow with your chin up and neck in an extension, such as a Gonstead listed Anterior Superior Occiput (AS) is near impossible. If there is a restriction at this level, then the stylohyoid and styloglossus muscles which attach to the styloid process will be altered. An infant that has a substantial AS occiput position may also have other associated compensatory muscles in spasm such as levator scapularis and upper trapezius. The sub occipital muscles will also be in contraction and often these infants present with an abnormally "strong neck" from birth. The hypoglossal nerve exits just lateral to the occipital condyles and next to the occipital bone and atlantooccipital joint capsule. It has been suggested that the hypoglossal nerve can be irritated by cervicocranial dysfunction.<sup>14,15</sup> Dysfunction to the hypoglossal nerve may impair tongue function and an infant attempting to coordinate latch, suck, swallow and breathe. Disruption to this coordination could also be linked with mechanical insult at birth to the normal cervical motion and neurological structures which may lead to breastfeeding difficulties. Sixty muscles and the vagus, trigeminal, facial, hypoglossal, accessory nerves along with the brainstem are involved with the wonderful synchrony of latching, sucking, swallowing, and breathing associated with breastfeeding.<sup>16</sup>

Identifying a pattern of restriction in infants, associated with certain presentations, is important for quick recognition and consequent treatment. A Gonstead ASRS occiput on motion palpation will display right lateral flexion restriction, normal extension, and a right occipital flexion restriction.<sup>17</sup> When examining the C0/C1 joint — the practitioners' hand is looking for the atlanto-occipital space to either open (flexion) or close (extension) under the index finger.<sup>3,17,18</sup> In this case the right capsular ligament of the condyle lateral

mass articulation may become infiltrated with fluid and consequently the capsule can become distended and rise on the ipsilateral side, which is named ASRS.<sup>3,17,18</sup>

Poor motion in the neck or TMJ can compromise a neonate's ability to find a comfortable position for feeding and other muscles may be utilised to 'survive'.<sup>19</sup> This compensation can continue for many months or even years. Infants have a significantly larger range of cervical motion (Rotation 110 degrees and lateral flexion 70 degrees) than in adults and it is important to recognise any decrease in normal infant motion.<sup>20</sup>

The upper cervical spine function requires normal tone of sub occipital muscles, upper trapezius, sternocleidomastoid, levator scapularis to stabilise and perform normal tasks. Asymmetry in cervical range of motion could also be associated with positional plagiocephaly and upper cervical dysfunction.<sup>8,9,19,21</sup> Decreased cervical range of motion may lead to compensatory dysfunction in the muscles associated with the temporomandibular joint or shoulder.

Stewart noted that glenohumeral dysfunction was present in 70% of infants presenting with breastfeeding difficulties and Fludder and Keil identified the right glenohumeral joint to be more common than the left for extremity joint dysfunction in this age group.<sup>3,8</sup> A diminished unilateral Moro Reflex could also be an indication for a glenohumeral joint dysfunction. Marked spasm in the upper trapezius and or levator scapularis can, along with glenohumeral dysfunction reduce the range of motion of the shoulder. The scapula muscles are involved in stabilising and coordinating efficient glenohumeral motion.<sup>22</sup>

Addressing the orofacial myology component of an infant with breastfeeding difficulties has huge benefits for a disorganised suck.<sup>10</sup> Korbmacher 2005 reported orofacial myofunctional disorders in children such as incompetent lips have been linked with functional asymmetry of the upper cervical spine where they found 352 children with asymmetry in occipito-cervical region on x-ray and 70% had orofacial myofunctional disorders.<sup>23</sup>

There are so many factors that may influence a poor breastfeeding experience and possible early cessation of breastfeeding. Mothers and babies with suboptimal feeding require appropriate support which is specific to each dyad. It is important to recognise the muscular and biomechanical balances as well as any positional difficulties that may prevent them feeding efficiently. Tongue tie, oral muscle development, cranial nerve dysfunction, latching/ positional issues could be included in a huge list of functional issues that may present to the chiropractor's office.<sup>24</sup> In this case the referral for chiropractic treatment by the IBCLC was indeed a successful outcome. Dysfunction

in areas such as the shoulder, cranium, temporomandibular joint and cervical spine can impact on the normal mechanics of the breastfeeding infant.<sup>14,15,24-27</sup>

## Conclusion

The neonate experiencing breastfeeding difficulties in the absence of pathology should be evaluated by a chiropractor to ascertain any neuromuscular dysfunction that could be a contributing factor. Breastfeeding is a coordinated action involving a combination of the tongue, perioral muscles, neck function and jaw mobility. In this case, a 3-week-old infant presented with poor attachment, feeding behaviour and discomfort for the mother. After two chiropractic treatments the mother reported a more comfortable feed,

improved suck and latch function and a significant weight gain. In this case, chiropractic intervention played a crucial role in the improvement of breastfeeding success for this dyad.

A collaborative approach including an International Board-Certified Lactation Consultant (IBCLC) is important for the continued support for the breastfeeding dyad. Frank and consistent discussions between professionals in a collaborative case is essential. Low force manual therapy for the infant is specific, repeatable and includes a thorough assessment to ensure that the treatment required is necessary. Further research in this area is warranted with a larger more controlled sample group.

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