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CASEREPORT

SOT cranial therapy for the treatment of paediatric torticollis: A chiropractic case report

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Narrative: Torticollis is considered to be the third-most common orthopaedic diagnosis in childhood. Untreated torticollis may have an affect on a child's motor development, possibly related to delays in crawling, rolling over, and standing skills.

This four-month-old female presented with torticollis, epigastric discomfort, difficulty latching, digestive issues, and blood in her stools. Her condition was not improving with home positional modification or parental massage, yet responded at the first office visit to chiropractic SOT, cranial, and CMRT interventions with improved cervical range of motion and reduced static tilt of the head.

Indexing terms: Chiropractic; sacro-occipital technique; SOT; torticollis.

Introduction

Congenital torticollis is commonly associated with a musculoskeletal problem or, in more serious cases, an underlying non-musculoskeletal pathology. Typically, it is characterised by a head and neck tilt, often combined with a rotational preference of the neck and unilateral shortening of the sternocleidomastoid muscle. (1)

> *'... Immediately following care the patient no longer had any head tilt and latch improvement was noted. By the third visit all orthopaedic testing normalised, symmetry was noted in her sternocleidomastoid muscles...'*

Torticollis is considered to be the third-most common orthopaedic diagnosis in childhood. (2) Cabrera-Martos et al note '*the incidence of congenital torticollis ranges from 0.3% to 16%*' (3) whereas Nilesh and Murkerji report the incidence of congenital muscular torticollis ranging from 0.3% to 2% in newborn infants or young children. (4)

Birth trauma appears to be the main etiological factor in congenital muscular torticollis, and one study found that mandibular hypoplasia may be a useful early sign of this condition with the side affected possibly dependent on the side of shoulder delivered first. (5) Another study supported that '*low birth weight, breech presentation, and motor asymmetry are prognostic factors associated with longer treatment duration*'. (6) A prospective study of all congenital muscular torticollis patients seen in one paediatric facility over a 12-year period isolated and identified

'*three clinical subgroups of sternomastoid tumour (SMT; 42.7%), muscular torticollis (MT; 30.6%), and postural torticollis (POST; 22.1%). The SMT group was found to present earlier - within the first three months - and was associated with higher incidence of breech presentation (19.5%), difficult labor (56%), and hip dysplasia (6.81%). Severity of limitation in passive neck rotation range was found to correlate significantly with the presence of SMT, bigger tumour size, hip dysplasia, degree of head tilt, and craniofacial asymmetry*'. (7)

Untreated torticollis may have an affect on a child's motor development, possibly related to delays in crawling, rolling over, and standing skills. Aside from motor delays, the asymmetrical muscular function could be a contributor to plagiocephaly. (8, 9, 10) Congenital muscular torticollis has also been implicated in contributing to '*permanent craniofacial deformity, facial asymmetry and changes in the cervical vertebrae if not treated during early childhood*'. (11) In addition, infants with torticollis had a decreased ability to adequately breastfeed or '*latch on*'. (12)

There has been some evidence to support utilising physical therapy, (13, 14) soft tissue mobilisation, (15) and stretching techniques, (16) as well as conflicting evidence to support the use of kinesiotape applications. (17, 18) The purpose of this case report is to share chiropractic interventions for a child with congenital muscular torticollis utilising cranial, chiropractic, and visceral reflex/manipulations.

Case Presentation

A four-month-old female with torticollis and digestive upset was brought to this clinic for chiropractic assessment and treatment. The parent reported their child's four month history of a right head tilt and torticollis (see pre-treatment picture), difficulty '*latching on*' when breastfeeding, epigastric discomfort, digestive issues, and blood in her stools.

Birth interventions included an epidural, three rounds of *Pitocin*, and one week of labor with failure to descend, inevitably leading up to the need for a Caesarian section delivery with a vacuum extraction. For four months the parents had tried home massage, caution with head placement when sleeping and feeding, and other types of positional modifications, which were ineffective in reducing their child's torticollis.

Pre-Treatment

Post-Treatment

Methods

Examination revealed a right head tilt with a functional right leg shortening. Supine position showed an abnormal tonic labyrinth test, in which her hands went into fists, legs into flexion and an attempt to lift her head. An increase in right heel tension was noted and hanging body test was abnormal, revealing her body going into extension and head turning to the right.

Normal results were found with grip, Moro, spinal gallant, tonic neck reflex and Babinski testing. Suck testing revealed hypersensitive gagging and very weak posterior tongue movement. It was noted that she would bite with more force in the front of her mouth along with increased pressures from the anterior aspect of her tongue. Upper labial frenum restriction was noted without presence of lingual frenum restriction.

Increased right sternocleidomastoid muscle tension was visualised and palpated; right posterior occiput flattening with left orbital compression and left ear flare was visible. Increased muscle tension was palpated at the left lateral atlas vertebral level, and thoracic paraspinal muscle tension and hypertonicity was present from T4-6. Also noted was an increase in muscle tension along the sacrospinalis region bilaterally, with right sacrum posteriority. Tension was also noted in the diaphragm and stomach area with guarding and apprehension to touch.

Treatment consisted of three chiropractic sacro occipital technique (SOT) cranial treatments (19) over three weeks incorporating SOT paediatric methods, (20) chiropractic manipulative reflex technique (CMRT) for the T5-gastric level, (21) and craniofacial balancing. (19) An infant probiotic was also recommended after the initial appointment.

Results

Immediately following care the patient no longer had any head tilt (see post-treatment picture) and latch improvement was noted. By the third visit all orthopaedic testing normalised, symmetry was noted in her sternocleidomastoid muscles, and no blood was noted in her stool.

Discussion

Chiropractic care for congenital muscular torticollis has been gathering an evidence base of information supporting its efficacy, predominately through case reports. (1, 22 - 37) One case by Pederick (37) describes chiropractic cranial care of a seven-month-old male child with congenital muscular torticollis (wry neck). He described the care as including '*long-duration cranial adjusting, and soft-tissue technique to the whole body with special attention to the cervical region, and parental management of home care procedure*'. (37) At the first treatment Pederick focused on utilising '*longitudinal and cross-fascial release procedures to the trunk and extremities. Core fascial release-procedures were applied to the spinal cord, namely lumbo-sacral stretch and cranial base decompression*'. The parents were given some home activities to perform to aid in building greater neck symmetry. The infant was treated approximately two times a month for about four months, at which time cranial symmetry was noted along with normal cervical ranges of motion. (37)

Caution must always be exercised with generalising findings that occur with a case report since there are so many possible confounding variables. This case relies on the parent's description of their child's behaviour and function, which may represent some hopeful bias on their part. Ideomotor effects and regression to the mean challenge the finding of this study, since with some cases of congenital muscular torticollis the child can recover without care.

What is compelling with this case is that the parents had been attempting to modify their child's behaviour and positioning as well as performing gentle massage to the tensioned muscles prior to beginning chiropractic intervention without effect for four months.

A change in her neck and range of motion occurred immediately after treatment, along with reduction in guarding to palpation of her stomach and diaphragm following the third treatment.

It is unclear if the reduction in the bloody stools related to the chiropractic intervention or recommendation for probiotic intake.

Conclusion

This case study discusses the care of a four-month-old female child presenting with torticollis, epigastric discomfort, difficulty latching, digestive issues, and blood in her stools. Her condition was not improving with home positional modification or parental massage, yet responded at the first office visit to chiropractic SOT, cranial, and CMRT interventions with improved cervical range of motion and reduced static tilt of the head.

Greater study is needed to identify if there is a subset of infants presenting with congenital muscular torticollis and digestive issues that could benefit from this approach.

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