

Improvement in digestion and coordination following chiropractic care in a 4-year-old male: A case report

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Abstract: *Objective/Clinical Features* 4-year-old male presented for chiropractic care with digestion and coordination issues. One year prior to presenting, the child had their tonsil and adenoids removed. Through a recent assessment by an occupational therapist, the child was found to have poor balance. The child was taking *Movicol* under direction from their general practitioner, to assist with constipation and stool holding. The child was also having difficulties falling asleep at night, but once asleep he could sleep for 12 hours. Examination by the Chiropractor revealed poor eye tracking, poor balance symmetry, generalised under-activity in reflex responses, and retained primitive reflexes. The examination revealed subluxations at C0, C2, C7, T2, T7, S2, S3, and LSI.

Intervention/Outcomes The schedule of care was 2 sessions a week for 6 weeks, after which a review was done. Following the review the schedule was revised to 2 sessions a week for 4 weeks, and further revised to one session a week for 4 weeks. The child was also supported by a naturopath, taking probiotics and gut care support. It was also advised that he keep up a soy and dairy free diet. At the 6-week review there was significant improvement noted in the child's digestive and coordination issues. There was also an improvement in the child's sleep. Areas of subluxation had reduced to C4, T2, L1, S2 and LSI. A significant improvement was seen in cranial nerve function, muscle function, reflexes, and with the resting tone of the nervous system.

Conclusion Chiropractic care may contribute to improvements in adaptability manifesting, in this case, as an improvement in digestion and coordination concomitant with chiropractic care

Indexing Terms: Chiropractic; Subluxation; digestion; balance.

Introduction

Early childhood is a pivotal time in terms of development. This is true not just for physical and nervous system measures but for psycho-social development. While the role of chiropractic care in the life of a child has been debated, the potential impact of care across the lifespan becomes particularly significant when a child is showing retention of primitive reflexes, difficulty with issues such as balance, coordination, and following instructions, as well as decreased function, such as digestion.

These issues span multiple different body systems, but with nervous system function sitting atop them all, the logical approach to care needs to be optimising the nervous system by removing subluxations and interferences to its operation.

... This case shows that subluxation-based chiropractic care can offer benefit even when the care is not directed at any specific symptomatology ...'



Can subluxation-based chiropractic care then offer any significant benefit if the care is not directed at specific symptomatology? The *Australian Spinal Research Foundation* defines the Vertebral Subluxation as 'A diminished state of being, comprising a state of reduced coherence, altered biomechanical function, altered neurological function and altered adaptability.' (1)

The present case report indicates that this may indeed have taken place with a 4-year-old patient under care, thus improving adaptability, nervous system function and by extension, improving several areas of health and wellbeing.

Background

A 4-year-old boy presented for chiropractic care with a history of adenoid and tonsil removal (approximately one year previous). At the time of presentation, he had recently been assessed by an occupational therapist and found to have poor balance. He had been taking *Movicol* under the instruction of his GP (General Practitioner) for chronic constipation and stool holding. He had difficulty getting to sleep at night, but once down, he could sleep for up to 12 hours. He was presented to the clinic with issues with constipation and stool holding.

His examination included a history soliciting details of his birth and gestation. He was born at 37-weeks' gestation following spontaneous rupture of membranes. His mother received an epidural for the vaginal delivery which was assisted with forceps following foetal distress. However, he was alert at birth and returned an APGAR score of 9,9. He sustained facial bruising and a cone-head shape as a result of the birth.

Following the birth, the mother could not walk for 4 days, which was thought to be epidural damage to the left leg. She suffered sciatica on the left side.

As a neonate, the patient was breastfed for four months and then put on formula. He suffered from colic and reflux, including silent reflux for which he was medicated. It was reported that he would grunt a lot when going to the toilet.

Examination

A thorough examination revealed poor eye tracking and poor balance symmetry. He had generalised underactivity in reflex responses and retained primitive reflexes. It was also noted that he had poor attainment of typical 4-year-old gross movement patterns. He also appeared to have poor body awareness, poor right arm swing, and poor balance overall. The examination revealed subluxations at C0, C2, C7, T2, T7, S2, S3, and LSI.

At the initial consult, the chiropractor noted concerns with spinal movement quality, particularly in the neck and pelvis. There were also significant postural imbalances, poor cortex inhibition of primitive reflexes and lack of spinal strength maturity, as well as poor focus with eye movement. Retained primitive reflexes included bilateral *Rooting*, *Palmar*, *ATNR*, and *Galant* reflexes. Gross motor assessment revealed difficulties jumping with two feet, difficulties performing the heel walk and toe walk, and inability to hop on one foot five times. *Romberg's* test revealed a right lean, and the patient found it difficult to walk in a straight line. Discriminative touch manoeuvres (bilateral touch) could be achieved with difficulty.

The immediate goals of care were to support the patient's body to function better by adjusting the areas of subluxation with particular focus on the neck and pelvis. Aims also included stimulation of cortical function and building stronger tone within the body. Long term goals were to see improved posture, weight distribution, improved body movement and maturity, with a goal of seeing integration of primitive reflexes.

Management

Following examination, a 6-week care plan was commenced with a frequency of two visits per week. He was also referred to a naturopath for other health support and placed on probiotics and gut care support. It was also advised that he keep up a soy and dairy free diet.

Following the completion of the original care plan, his care schedule was revised to 2 sessions per week for 4 weeks followed by 1 session per week for 4 weeks – a total extension of eight weeks care (See Appendix A for specific dates and adjustments).

Outcomes

At the 6-week review, his mother noted improvements in sleep quality, general behaviour, and mood. He was less clumsy and tripping/falling less than he did prior to care. He was now achieving certain milestones and seemed to have improved coordination and balance. The stool holding and constipation had significantly improved since the beginning of care. So too had his stomach distention, excessive wind, and bloating as well as crying hours, general resilience, and ability to bounce back from fatigue or illness. It was reported that he still had some issues concentrating on tasks but starting to see some improvement.

The chiropractor noted significant improvements in posture, postural balance, compliance with examinations, and resilience with completing tasks and following directions. Relevant clinical findings included the following:

Orthopaedic

- ▶ Cranial bone restrictions followed a similar pattern with the front and temporal regions affected.
- ▶ Range of Motion of the neck had improved very well, with mild restrictions remaining.
- ▶ Mild extension restrictions were seen in both the thoracic and pelvis.
- ▶ Left SI extension restriction was also seen.
- ▶ All peripheral joints were moving well.

Nerve & Muscle

- ▶ Areas of subluxation had reduced to C4, T2, L1, S2 and LSI.
- ▶ Cranial nerve function, muscle function and reflexes were now excellent.
- ▶ A huge improvement with resting tone of the nervous system was noted.

Global Posture

- ▶ Body tilt had improved well.
- ▶ Head tilt had also improved significantly.
- ▶ Pelvic tilt was more evident.
- ▶ Side images showed improved alignment (even though the head is held up).
- ▶ Left body sway was noted in the follow up imaging

Brain Function

- ▶ Moro, Palmar, ATNR, and Galant reflexes were still present.
- ▶ Compliance was still difficult with tests later in the exam, however the patient's resilience to get through them had significantly improved.
- ▶ He was now able to hop two times on each foot, and perform a heel walk and toe walk.
- ▶ Less overflow movements noted with movement patterns (better function overall).

- ▶ Walk/running videos showed right arm swing improvements, but his right side was still not as active as the left.

These findings show significant improvements across multiple body systems, concomitant with a reduction in subluxations. Some goals of care had not been fully reached (though significant improvements had been made), and hence the further care plan was proposed. Still, the patient was exhibiting significantly more ease in pivotal areas of function and development.

Discussion

This case report indicates that, in this case, chiropractic care may have assisted in improvements in balance, coordination, digestion, and physical and mental resilience in a 4-year-old patient. While further research is required to understand the mechanisms behind such improvement, and case reports cannot yield the power to make generalisations for the wider population, it is significant that these improvements occurred simultaneously with a significant reduction in vertebral subluxations. While further chiropractic care was required and recommended to ensure the full integration of all primitive reflexes, the improvements were notable and concomitant with the completed care plans and thus care continued.

Treating the vertebral subluxation as a measure of reduced nervous system adaptability gives potential insight into why these improvements may have occurred side by side.

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About the Chiropractor

Dr Jacey Pryjma obtained her Bachelor of Chiropractic Science in 2005, and later her Master of Chiropractic in 2007, from Macquarie University. Jacey founded Well Kids in 2013, developing the Well Kids Program, and is now the Director of the [Australian Children's Chiropractic Centre](#) in New South Wales, Australia

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.

Appendix

	Adjustment	Results
07/04/2021 initial		
23/04/2021	Sutures: sagittal front and post, L Lambdoid Cranials L: Parietal, Temporal Cranials R: Frontal, Temporal Cranial ROM + special cranial techniques: rotation of Sphenoid and Occiput around transverse plane, Lateral shear through sphenoid	Cervical ROM Occipital ROM Thoracic ROM SI movement All improved
27/04/2021	Sutures: sagittal front and post, R squamous Cranials L: Frontal, Parietal, Temporal Cranials R: Frontal	Thoracic ROM SI movement
30/04/2021	Sutures: sagittal front and post, L Coronal, R Coronal Cranials L: Frontal, Parietal, Temporal Cranials R: Frontal	Cervical ROM Occipital ROM Thoracic ROM SI movement
04/05/2021	Sutures: sagittal front and post, L Coronal, R Coronal, R squamous Cranials L: Frontal, Parietal, Temporal Cranials R: Frontal Cranial ROM + special cranial techniques: rotation of Sphenoid and Occiput around transverse plane, Lateral shear through sphenoid	Cervical ROM Occipital ROM Thoracic ROM SI movement

07/05/2021	Sutures: L Coronal, R Coronal Cranials L: Parietal, Temporal Cranials R: Frontal Cranial ROM + special cranial techniques: rotation of Sphenoid and Occiput around transverse plane, Lateral shear through sphenoid	Cervical ROM Occipital ROM Thoracic ROM SI movement
11/05/2021	Sutures: Sagittal front, L Coronal Cranials L: Parietal Cranials R: Frontal Cranial ROM + special cranial techniques: rotation of Sphenoid and Occiput around transverse plane, Lateral shear through sphenoid	Cervical ROM Occipital ROM Thoracic ROM SI movement
14/05/2021	Sutures: Sagittal front, L Coronal Cranials L: Parietal Cranials R: Frontal Cranial ROM + special cranial techniques: rotation of Sphenoid and Occiput around transverse plane, Lateral shear through sphenoid	Cervical ROM Occipital ROM Thoracic ROM SI movement
18/05/2021	Sutures: Sagittal front, L Coronal, L Lambdoid, R Lambdoid Cranials L: Parietal, Occiput Cranials R: Frontal, Occiput Cranial ROM + special cranial techniques: rotation of Sphenoid and Occiput around transverse plane, Lateral shear through sphenoid	Cervical ROM Occipital ROM Thoracic ROM SI movement
21/05/2021	Sacral/pelvic: S2 hold Prim Reflex: HEMISPHERE L, HEM BODY LINK, HEM SYNC, FPR, MORO	Cervical ROM Occipital ROM Thoracic ROM SI movement

25/05/2021	<p>Sutures: Sagittal front, Sagittal post, L Lambdoid, R Lambdoid</p> <p>Cranials L: Occiput</p> <p>Cranials R: Occiput</p> <p>Cervical: R L/F</p> <p>Thoracic: T4 act, T7 act</p> <p>Sacral/pelvic: S2 hold</p> <p>Prim Reflex: HEMISPHERE L, HEM BODY LINK, HEM SYNC, FPR, MORO</p>	<p>Cervical ROM</p> <p>Occipital ROM</p> <p>Thoracic ROM</p> <p>SI movement</p>
28/05/2021	<p>Sutures: Sagittal front, Sagittal post, L Lambdoid, R Lambdoid</p> <p>Cranials L: Occiput</p> <p>Cranials R: Occiput</p> <p>Cranial ROM + special cranial techniques: rotation of Sphenoid and Occiput around transverse plane</p> <p>Cervical: C1 L/F seated</p> <p>Thoracic: T4 prone act</p> <p>Lumbar: L3 act</p> <p>Sacral/pelvic: L SI ext push</p>	<p>Cervical ROM</p> <p>Occipital ROM</p> <p>SI movement</p>
01/06/2021	<p>Sutures: Sagittal front, Sagittal post, R squamous, L Lambdoid, R Lambdoid</p> <p>Cranials L: Occiput</p> <p>Cranials R: Occiput</p> <p>Cranial ROM + special cranial techniques: rotation of Sphenoid and Occiput around transverse plane, Lateral shear through sphenoid</p> <p>Thoracic: T4 prone</p> <p>Sacral/pelvic: L SI ext drop</p> <p>Primitive Reflex: MORO</p>	<p>Cervical ROM</p> <p>Occipital ROM</p> <p>Thoracic ROM</p>
04/06/2021	<p>Sutures: Sagittal front, Sagittal post, L Lambdoid, R Lambdoid</p> <p>Cranials L: Frontal, Occiput</p> <p>Cranials R: Frontal, Parietal, Temporal, Occiput</p> <p>Cranial ROM + special cranial techniques: rotation of Sphenoid and Occiput around transverse plane, Lateral shear through sphenoid</p> <p>Cervical: R L/F</p> <p>Thoracic: T4 act, T7 act</p> <p>Sacral/pelvic: S2 hold</p> <p>Primitive Reflex: HEMISPHERE L, HEM BODY LINK, HEM SYNC, FPR, MORO</p>	<p>Cervical ROM</p> <p>Occipital ROM</p> <p>Thoracic ROM</p> <p>SI movement</p>

