

Improvement in migraines, neck pain and balance in a 57-year-old female with Krabbe Disease: A case report

Samantha Coupe, Ruth Postlethwaite and Clare McIvor

Background: Krabbe disease is rare and symptomatically it is a complex disorder. This case report details a Chiropractor's management of an 57yo female with Krabbe disease, experiencing pain and disability as a result of their illness, over eight years. The treating Chiropractor followed the Advanced Biostructural Correction protocol for care and noted improvements in pain, neurological function, and general quality of life.

Outcomes: The patient was scanned and evaluated regularly, but at her six-month evaluation, significant improvements were noted. She reported that she had stopped having the extreme head/neck episodes. Prior to care, her episodic migraines with vomiting were a monthly occurrence. Since her care began, they ceased completely. Her neck problems gradually improved along with her whole posture.

Conclusion: Chiropractors may play a significant role in the care, function and longevity of people with neurodegenerative disorders, but only more research is needed to confirm this proposition and to explain how and why.

Indexing Terms: Chiropractic; Subluxation; Advanced Biostructural Correction Technique; ABC; Krabbe Disease; Quality of Life; Neurodegenerative.

Introduction

Degenerative diseases of the central nervous system (CNS) present a unique challenge for sufferers and health practitioners alike. But while diseases such as Amyotrophic Lateral Sclerosis (ALS) or Muscular Dystrophy have obtained some benefit from significant awareness campaigns and research fundraising efforts, rarer diseases like Krabbe Disease remain poorly understood and difficult to diagnose. Unfortunately, all three diseases remain incurable, and thus research efforts are focused on prolonging life and retaining quality of life until cures can be found.

Krabbe Disease

Krabbe Disease is a rare disease belonging to this cluster of Central Nervous System Diseases. (1) It is usually diagnosed in childhood, with a low prevalence of less than one per 310,000 live births. (1) Rarer still is Adult Onset Krabbe

... Prior to care, her episodic migraines with vomiting were a monthly occurrence. Since her care began, they ceased completely. Her neck problems gradually improved along with her whole posture ... '



Disease, which is thought to represent only 10% of all cases. (2)

This disease is known to erode neurological function and creates widespread symptoms including paraesthesias, mood alterations, ataxia, spasticity, visual disturbances, and psychomotor challenges among other symptoms. (3)

The CNS has a unique immune system that maintains the health and stability of the internal environment surrounding the brain and spinal cord. An important aspect of cell and system health is the efficient removal of waste products, which is carried out by lysosomes. When there are disruptions to lysosomal function, this can lead to toxicity and inflammation, which can negatively impact healthy tissue in the local area. Globoid cell leukodystrophy (GLD), also known as Krabbe disease, is a genetic disease that is caused by a deficiency in galactosylceramidase (GALC). In patients with GLD, there is a gene mutation at chromosome 14, which codes for the lysosomal hydrolase GALC. (3)

GALC is an enzyme that breaks down galactolipids, specifically for GLD, galactosylceramide and psychosine; an important component of myelin and a byproduct of myelination respectively. Galactosylceramide can be metabolised by other enzymes, but psychosine cannot and is highly cytotoxic when it accumulates. These metabolites are found in high concentrations in Schwann cells and oligodendrocytes as they are microglial cells responsible for the turnover of myelin and the processing of waste metabolites. It is unclear exactly how the accumulation of psychosine manifests its cytotoxicity, but when it cannot be broken down as normal, and accumulates both intra- and extracellularly, it leads to apoptosis of microglial cells. This cell death triggers both demyelination and microglial cell activation, including globoid cell formation, although in which order, it is still unknown. (4)

Symptomatically, this is a complex disorder. Adult Onset Krabbe Disease, which has the lowest incidence usually has chronic progressive pyramidal tract injuries as the main presentation. (3) It may begin with burning sensations in the arms and legs, and progress to mood and behaviour changes, ataxia, spasticity, vision changes or blindness, seizures, hearing loss and deafness. Usually, death occurs within ten years of diagnosis. (5)

Most sufferers of Adult Onset Krabbe Disease suffer mentally and physically, especially as the disease progresses. As it is so rare, and so poorly understood, vital time is often lost solving the medical mystery prior to diagnosis.

This case report details a Chiropractor's management of an individual with Krabbe disease, experiencing pain and disability as a result of their illness, over eight years. The treating Chiropractor followed the Advanced Biostructural Correction (ABC™) protocol for care and noted improvements in pain, neurological function, and general quality of life.

At the time of writing, no other Chiropractic evidence (case report or otherwise) exists on the topic of Krabbe Disease. While this case report is a single case only, and makes no claim towards curing the condition, extending quality of life and supporting longevity is important for sufferers.

Case details

A 57-year-old female who had been under regular Chiropractic care presented for assessment at an Advanced Biostructural Correction-based Chiropractic clinic.

Upon presentation, the patient reported a complex medical history, including a pending diagnosis of a neurological disorder. She reported having been '*strong and healthy*' well into her thirties. She then suffered a bad case of food poisoning while travelling abroad and believed this contributed to leaky gut syndrome and many food intolerances. She then suffered from a fall off a ladder, injuring her at L5/S1 from which point her health began to deteriorate. This included numerous episodes of acute back pain during which she could only walk bent in flexion.

She tried numerous modalities to reduce pain and successfully manage her back pain, including lengthy programs of physiotherapy and exercise, with some programs being intensive (three hours per day, five hours per week). She reported that her pain and disability only became worse. She attempted 'Rolfing' treatment, whereby practitioners work on fascia and connective tissues to improve mobility, but reported that it only worsened her back. She then, in 1992, sought a specialist for cranial treatment which she believed left her with acute and chronic pain episodes that would continue for the next eighteen years, during which she also began to suffer from chronic episodes of neck pain and headaches.

The patient had consulted five neurologists over the course of her illness, with one undertaking nerve conduction tests to prove nerve damage to both motor and sensory pathways. Due to a lesion seen on an MRI in 2017 she was diagnosed with ALS (Amyotrophic lateral sclerosis), but the patient did not progress as a typical ALS patient. It was later suggested that the illness could be Primary Lateral Sclerosis or even Multiple System Atrophy. A second neurologist referred her to a specialist neurological service, where the medical team authorised genetic tests to confirm a likely recessive mutation on the GALC gene.

This was confirmed in 2020, as was her diagnosis of Adult Late Onset Krabbe Disease. Blood tests confirming the diagnosis ascertained the patient's enzyme level, which returned a mere 10% of normal levels.

The patient was now in excess of nine years post-diagnosis. Her progression began in 2011, with neck pain, headaches, and migraines that would induce vomiting. During this time, she described herself as chronically unwell with a 'drunk' like gait. By 2012, she was experiencing deteriorating balance and an inability to stop herself from falling. She described this as being '*like she lacked the reflex*' to stop herself from falling. In September of 2013, she experienced a fall at which point she fractured both ankles. After recovery with a plaster and a moon boot, she began to experience neuropathy. By 2017, her condition had increased to include neuropathy and weakness.

In addition to pain, headaches, and neuropathy related to her condition, she also suffered from right knee pain due to osteoarthritis. A Chiropractic examination revealed significant anterior head carriage, loss of cervical lordosis, and anterior pelvic tilt. These were confirmed by X-ray, photographic postural analysis and range of motion testing. Primary subluxations were located at C7 and L5, with multiple meningeal adhesions and anterior vertebra.

The patient entered into a care plan in which she was seen twice a week and checked and adjusted using ABC technique. Initial aims of care were to relieve neck pain and migraines. As the disease had a poor prognosis, and recovery was not expected, a secondary aim of care was to help with balance, falls reduction and quality of life as the disease progressed.

While her original presentation for care was in 2011 at age 57, she has since remained under regular care. She is now 70 years of age and retired.

Outcomes

The patient was scanned and evaluated regularly, but at her six-month evaluation, significant improvements were noted. She reported that she had stopped having the extreme head/neck episodes. Prior to care, her episodic migraines with vomiting were a monthly occurrence. Since her care began, they ceased completely. Her neck problems gradually improved along with her whole posture.

She has had no vomiting migraines since 2012, when they had been a regular symptom (occurring at least monthly) over 18 years prior to her presentation.

In 2015 her breakdown side was changed from right to left and her balance improved. She reported this adjustment solved her falling problem almost instantly.

Since the commencement of care, the patient has reported a complete cessation of migraines, a significant reduction in neck pain, and a more relaxed and upright posture. She also reported improved balance. These findings were verified by objective and subjective measures (photographic postural analysis, x-rays and patient reports).

Over the course of her treatment, the patient reported '*slow but remarkable improvement*' that allowed her to continue functioning despite her diagnosis of Krabbe Disease. She stated:

'ABC has been a life-rope at a time I was ready to give up. ABC was my last option and did not fail me. I made slow, but remarkable improvements. I did not know until November 2020 that I had Krabbe, a metabolic disease that creates a neurotoxin that builds up in each cell and in the brain, causing white matter disease and demyelination of the nerves, then muscle loss and finally paralysis. It was a frustrating back-drop to my slow response to ABC, but I consider ABC as one of the main reasons why I have been able to function from 2011 until now (2024).'

In the past year, the patient reported that her body had reached a tipping point in terms of toxic load and consequent neurological damage. While she has outperformed her prognosis and remains strong willed and optimistic, there remains no cure for the underlying condition. Despite this, the patient still responds to adjustments and reports that she leaves each Chiropractic care session 'in better shape than I entered'.

Discussion

As there is no other chiropractic evidence pertaining to Krabbe Disease, and only very limited evidence with regard to Degenerative Diseases of the Central Nervous System (such as Motor Neurone Disease or Amyotrophic Lateral Sclerosis), research is yet to establish any meaningful hypotheses behind any benefits that may occur concurrent with chiropractic care.

All that is currently known is that this patient referred to her care as "life saving." The care given to this patient, using Advanced Biostructural Correction (a chiropractic technique used to check and adjust subluxations) did create profound postural changes that took the patient's body out of the forward flexed posture. Brieg (6) theorised that when we decrease 'stretch' on the nervous system, the symptoms of degenerative neurological disease may also decrease. He showed that stretch on nerve impairs conductivity. He also showed doing cadaver studies that flexion increases stretch.

The hypothesis is that as ABC focuses on the Anterior subluxation it has a large impact on upright posture. With improvements in posture and decrease in forward flexed slumped resting posture we expect decrease stretch on the nervous system. This reduction in stretch improves conductivity of nerves.

It was hypothesised that nervous system care was therefore vital for neurodegenerative diseases of the central nervous system, both in terms of timing care frequency appropriately, and for prolonging both life and quality of life. All three considerations are important for this case too, and should be considered in future research on chiropractic, quality of life, and neurodegenerative disorders.

Krabbe Disease is one with a life-limiting prognosis. Therefore, slowing the disease's progression is a matter of prolonging life and preserving quality of life. At the time of writing, the

only comparable case report in circulation is Ullman et al's paper on the Chiropractic management of a Motor Neurone Disease Sufferer. (5) In this paper, it was observed that the progression of the disease slowed significantly to the point where the patient's ordinary medical care team remarked on the patient's progress. It was also observed that whenever the patient dropped below his optimal care timing (for holidays or other reasons), the chiropractor would have to work hard to bring him 'almost' up to where he was prior to the pause.

Conclusion

The patient in Ullman's report believed that Chiropractic had given him more time with his children, just like this patient believes her Chiropractic care to be '*life-saving*'. Both statements indicate significant improvements in Quality of Life and significant slowing of progression. While it is impossible to know how fast the disease would have progressed without Chiropractic care, this subjective and self-reported feedback is worthy of consideration and further investigation.

Can Chiropractic care slow the progress of neurodegeneration, thus adding life to years and years to life in a literal sense?

While Chiropractic is increasingly being understood as a profession that cares for the nervous system, and while we are known as a profession that can aid in correcting poor posture, the link between posture and nervous system function has not yet been fully explored. Further to this, research is a long way from understanding why posture is important for people with neurodegenerative diseases or how Chiropractors can support them.

Chiropractors may play a significant role in the care, function and longevity of people with neurodegenerative disorders, but only more research is needed to confirm this proposition and to explain how and why.

Ruth Postlethwaite
BBiomedSc
Writer, ASRF

Clare McIvor
BBus(Admin),
GD Comms(ProfWrit,Edit),
GD(Psych)(Cand)
Writer, ASRF

Samantha Coupe
BChiroSc, MChiro.
Private practice of Chiropractic
Melbourne City Chiropractic
coupechiropractic@gmail.com

Cite: Coupe S, Postlethwaite R, McIvor C. Improvement in migraines, neck pain and balance in a 57-year-old female with Krabbe Disease: A case report. Asia-Pac Chiropr J. 2025;6.1. www.apcj.net/papers-issue-6-1/#CoupeKrabbeDs

References

1. Ghabash, G., Wilkes, J., Barney, B. J., & Bonkowsky, J. L. (2022). Hospitalization Burden and Incidence of Krabbe Disease. *Journal of child neurology*, 37(1), 12–19. <https://doi.org/10.1177/08830738211027717>
2. Durães, J., Salsano, E., & Macário, M. D. C. (2021). Adult-Onset Krabbe Disease: The Importance of a Systematic Approach to Brain MRI Findings. *Neurology. Clinical practice*, 11(1), e15–e17. <https://doi.org/10.1212/CPJ.0000000000000780>
3. Jain, M., & Jesus, O. D. (2023, August 23). Krabbe Disease. Nih.gov; StatPearls Publishing. <https://www.ncbi.nlm.nih.gov/books/NBK562315/>
4. Nicaise, A. M., Bongarzone, E. R., & Crocker, S. J. (2016). A microglial hypothesis of globoid cell leukodystrophy pathology. *Journal of Neuroscience Research*, 94(11), 1049–1061. <https://doi.org/10.1002/jnr.23773>
5. Ullman E, Postlethwaite R, McIvor C. Chiropractic management of a 30-year-old male with Motor Neurone Disease: A case report. *Asia-Pac Chiropr J*. 2021;2.3. URL www.apcj.net/papers-issue-2-3/#UllmanALS
6. Brieg A et al. Adverse mechanical tension in the central nervous system. Stockholm, 1978. https://openlibrary.org/books/OL4569954M/Adverse_mechanical_tension_in_the_central_nervous_system

About the Chiropractor

Samantha studied her Bachelor and Masters in Chiropractic at Macquarie University in Sydney. It was in the second year anatomy labs that she met her future husband and business partner Ben Coupe. Throughout university Sam worked in a GP's office which gave her insight into the limitation traditional medicine has with respect to structural body problems.

After graduation Sam worked for almost 4 years in Scotland which is where she learnt Advanced BioStructural Correction™. It was her time in Scotland that allowed her to try many different styles of chiropractic, however after learning ABC™ she was so impressed with its consistent and predictable results she has devoted years to becoming a Master level certified practitioner. She was also one of the first practitioners worldwide to be accredited to teach the technique. When not in practice she is not only travelling to teach Chiropractors ABC™, but is now also responsible to leading instructor training worldwide.

With two children Arlo 10 and Albie 7, Sam practices part time and is passionate about women's health and longevity. She loves the diverse range of clients she sees in the city office and has a particular focus on pain caused by stress and poor posture. She loves CrossFit and feels movement is a huge factor in good health.

