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Improvement in balance and mobility in a 68-year-old female with plantar fasciitis: A case report

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Background: A 68-year-old female presented for Chiropractic care with a primary complaint of chronic neck, shoulder, and upper back pain, persisting for over five years. The patient described longstanding difficulties with gait and mobility. She was a 'knife walker,' supinating her feet while walking, and surgical interventions had failed to lessen her symptoms, which now included plantar fasciitis.

Intervention: The patient commenced a course of Chiropractic care during which she was managed using the Advanced Biostructural Correction Technique.

Outcomes: The patient achieved marked improvements in postural and subluxation findings, which were concomitant with a significant improvement in balance and mobility, and a reduction in pain.

Conclusion: This case report illustrates the potential for Chiropractic care to simultaneously address neurological function and structural alignment, thus creating proprioceptive changes that facilitate better balance and mobility.

Indexing Terms: Chiropractic; Subluxation; Advanced Biostructural Correction Technique; ABC; plantar fasciitis; knife walk; balance.

Introduction

Among the challenges that present alongside subluxation older adults are those of altered gait and vestibular function. Altered gait may be a result of tissue degeneration or altered biomechanics such as subluxation, injury or pathology at the site. Woven in with this multifactorial aetiology, vestibular function is a challenge that more often has neurological origins, if pathology related to the inner ear is ruled out.

Often, in a typical medical setting, treatment of end symptoms such as plantar fasciitis may become the focus of treatment. However, looking at the issue from a Chiropractic lens, 'above down inside out', we have an opportunity to scrutinise the other potential origins of this pathology. For example, how might biostructural elements such as slumping, postural sway, hyperkyphosis, hyperlordosis, forward head posture or a combination of these impact a person's gait, and by virtue of this, plantar fascia?

> *... The patient expressed particular satisfaction with the increased confidence in her ability to move safely and independently which positively impacted her day-to-day activities and overall Quality of Life.... '*

This case report examines the chiropractic management of a person who presented with plantar fasciitis and difficulties with gait and balance. We know that plantar fasciitis is one of the most common causes of heel pain, affecting both active and sedentary individuals. It occurs when the plantar fascia, a thick band of connective tissue that supports the arch of the foot, becomes irritated or inflamed, often due to repetitive stress or altered biomechanics. (1) This condition can lead to significant discomfort during weight-bearing activities, limiting walking, running, and overall mobility. Over time, it may contribute to compensatory changes in gait, which can place further stress on the lower extremities and spine. (2)

In this case, we see a common compensatory pattern in plantar fasciitis, that of as knife walking. This term describes a gait alteration in which an individual walks with a rigid or guarded foot posture, placing excess pressure along the outer edge or specific portions of the foot to avoid heel pain. The resulting movement is often sharp and uneven, as though the person were walking on a blade. Knife walking can lead to altered biomechanics throughout the lower limb and pelvis, perpetuating stress and dysfunction in both local and global movement patterns. (3) How subluxation might play into this system of dysfunction, pathology and altered biomechanics is individual, as is the placement of knife walking in the cascade of symptoms. We need to question whether it was an adaptation from prior injuries that placed plantar fasciitis as more of a downstream symptom due to compromised biostructural changes.

The Chiropractic understanding is that rarely, if ever, do these things occur in a vacuum. Correct the subluxation, enable biostructural correction, and the other outcomes are then more likely to take care of themselves.

Gait, which involves coordinated input from the musculoskeletal and nervous systems, is broader than knife walking alone Subluxations, as functional disturbances in spinal and extremity joints, can disrupt proprioceptive feedback and motor control, potentially contributing to faulty gait mechanics and vestibular function. Chiropractic care focuses on the assessment and correction of these dysfunctions, with the goal of restoring proper movement patterns and reducing strain on affected tissues. (4) By addressing these biomechanical and neurological factors, Chiropractic may play a role in improving gait and reducing the compensatory movements, such as knife walking, that perpetuate plantar fasciitis.

Emerging research and case reports suggest that subluxation-based Chiropractic care can influence neuromuscular function, postural stability, and lower limb biomechanics. (4, 5) This case report explores the relationship between Chiropractic care, balance, mobility, and symptom reduction in a patient with plantar fasciitis, highlighting how a subluxation-based approach may contribute to both pain relief, vestibular function and recovery.

Case details

A 68-year-old female presented for Chiropractic care with a primary complaint of chronic neck, shoulder, and upper back pain, persisting for over five years. The patient reported some relief with weekly massage therapy since October 2023, noting mild improvements in her forward posture since commencing this intervention. Her pain was aggravated by her occupation in administration which required sitting for more than six hours per day. She expressed concerns regarding her posture and longevity.

The patient described longstanding difficulties with gait and mobility. She was a 'knife walker,' supinating her feet while walking. This supination began some time in her thirties, as she was playing sport regularly, and became more severe over time. She underwent surgical intervention on the right ankle in 2017, including fusion following unsuccessful fixation with five pins. Despite this, she continued to experience pain and dysfunction, and although her surgeon recommended a similar procedure for the left ankle, she declined further surgery.

She reported plantar fasciitis that had improved somewhat with regular massage but continued to limit walking tolerance. She struggled with stair negotiation, requiring firm use of a handrail to descend, and described poor balance overall. The knife walking, plantar fasciitis and poor balance all contributed to significant mobility challenges, thus contributing to her severely limited physical activity level.

Her past history included two notable falls. Over 20 years ago, she sustained a cycling accident in which her front wheel became lodged in a grate, throwing her over the handlebars. She landed on her chin but did not seek medical treatment. In primary school, she fell from a fence and became caught on barbed wire, sustaining a suspected hip dislocation, which was briefly assessed by her general practitioner but not investigated further. She remarked that she felt there was a difference in her hip heights following this accident, but this remained speculative.

Previous podiatric care included multiple prescriptions for orthotics, none of which provided lasting relief. The patient had no current exercise routine, although she owned a small trampoline, which she admitted lacking motivation to use. She had previously maintained an active lifestyle, including windsurfing, hiking, cycling, and basketball, but her current level of health and mobility prevented this. At the time of presentation, she was taking no regular medications apart from occasional paracetamol and was novice to Chiropractic care.

Her goals were to address ongoing pain in the cervical and upper thoracic regions, improve posture, and maintain mobility and independence as she aged.

Clinical findings

Upon presentation at our clinic the patient underwent a thorough examination in which she was assessed using the Advanced Biostructural Correction protocol. During this examination it was found that she had a restricted cervical range of motion bilaterally, with a 60% reduction in flexion which was painful, a 40% reduction of movement in extension, and a bilateral rotation reduction of 20%. Restricted lumbar range of motion was also identified, with bilateral movement reduced by 20%, bilateral rotation reduced by 40% and extension movement reduced by 20%.

Her Right gluteal muscles and bilateral *psoas* showed severe (+4) weakness. The right hip flexor showed moderate to severe (+3) weakness.

Numerous subluxations were found throughout the spine, with a higher concentration around the cervicothoracic junction and lumbar spine, with significant forward loading in the cervical spine.

Management

Following examination the patient commenced a care plan during which she was seen twice per week for eighteen weeks, and was checked and adjusted using the ABC protocol. Re-examinations were undertaken every twelve sessions, and additional care recommendations were given to introduce regular exercise (swimming and walking) to her routine, and ergonomic advice. Postural changes monitored with before and after photos at each exam

Primary aims of care were symptomatic relief for her plantar fasciitis, neck pain and back pain, as well as improvements in mobility, balance, posture, and range of motion.

Outcomes

At her first progress examination, restrictions to her bilateral flexion range of motions was now only reduced by 20%, representing a significant improvement of 40%. Bilateral rotation remained at 20%. Lumbar range of motion also saw significant improvements, with left lateral flexion now only reduced by 20% and right lateral flexion now full and pain free. Right rotation

was reduced by 20% and the left was full and pain free. The left hamstring, right gluteal muscles, bilateral *psoas* and left anterior tibia were all still showing signs of severe (+4) weakness, but the hip flexor was now within normal limits.

Along with objective measures, the patient reported significant positive changes in balance and mobility. She was now able to walk down stairs with more ease. Where previously, she would have to cling to the handrail, she now described herself as being able to '*skip down the stairs*'. Marked postural improvements occurred concomitantly with objective measures such as improved range of motion.

While these changes were notable and significantly contributed to increased Quality of Life, she continued knife walking. Thus, it should be considered that knife walking is likely a permanent adaptation from her ankle injuries, with plantar fasciitis more of a downstream symptom borne of the compromised biostructural aspects of her lower limbs.

However, the improvements in her postural findings, such as decreased slump, resolution of sway back, reduction in hyperkyphosis and hyperlordosis along with a decreased forward head posture, in addition to the resolution of her neck pain were significant. These factors are likely supportive outcomes that help explain why her balance and confidence in movement improved so much.

Discussion

This case highlights the improvements in balance and mobility that can occur alongside Chiropractic care. Over the course of treatment, the patient experienced a marked reduction in plantar fasciitis symptoms along with improvements in mobility and balance. She expressed particular satisfaction with the increased confidence in her ability to move safely and independently, including no longer relying on a handrail to navigate the stairs, which positively impacted her day-to-day activities and overall Quality of Life.

From a clinical perspective, these changes may be linked to the correction of subluxations and the subsequent effects on posture and neurological function. By addressing forward posture and related mechanical stressors, Chiropractic adjustments may have reduced dural tension and influenced the neurological pathways within the brainstem and cerebellum. These changes are likely to have supported improved proprioception and coordination, which are fundamental to stable balance and gait.

This case raises the possibility that Chiropractic care for optimal neural and biostructural function may allow for improvements even when more permanent adaptations like knife-walking remain.

Conclusion

Improvements in balance are something I commonly observe in practice, and this case is a clear example of the impact such changes can have on an individual's confidence and independence. Advanced Biostructural Correction (ABC) appears to offer a unique and simultaneous effect on both structural alignment and neurological function.

Given these outcomes, greater awareness and use of ABC within the Chiropractic profession may be beneficial, as well as further research into its role in improving balance, gait, and musculoskeletal health.

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About the Chiropractor

Dr Joshua Tymms is a highly regarded chiropractor who has dedicated his career to helping patients achieve optimal health and wellness. Born and raised in Perth, Western Australia, Joshua completed his chiropractic studies at Murdoch University, graduating in 2006. He is level 3 certified in Advanced Bio-Structural Correction and has been recognised for his expertise and dedication to the field. In 2021, his contributions to the profession were recognised with an Outstanding Service to the Profession award from the Australian Chiropractors Association (ACA).

One of his particular interests is postural correction. He has a deep understanding of the connection between posture and overall health, and he works closely with his patients to correct any imbalances or misalignments that may be contributing to their pain or discomfort. The ABC technique offers hope to those who have not been successful with other manual therapies and are considering more invasive options.

In addition to his professional life, Dr Tymms is a dedicated family man. He is married to Brooke, and together they have a daughter, Indiana. His family is a source of constant inspiration and motivation, and he approaches each day with a deep sense of purpose and commitment to his patients and his community.