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CLINICALEVIDENCE
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Parkinson's' Disease and Soft Tissue Orthopedics (STO): A Case Report

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Narrative: Parkinson's Disease is more common in the elderly and prevalence rises from 1% in those over 60 years of age to 4% of the population over 80. The mean age of onset is around 60 years and the disease is attributed to selective loss of neurons in the substantia nigra.

Increased homocysteine levels seem associated with PD and have also been found related to inflammatory bowel disease, for which colonoscopy may be required with its risk of bowel perforation, as occurred with this patient. She required surgical resection for a perforation of the colon after which her examination findings revealed a patient who had deteriorated significantly from her last office visit.

Soft Tissue Orthopedics was the main therapeutic approach in the Chiropractor's office including temporal sphenoidal (TS) diagnosis, extremity and cranial-dural-sacral assessment, nutritional therapy, proprioceptor disruption reflex points. A complete package of care was provided and at last treatment she was found to be strong, stable, with significant balance and stability, and only a slightly noticeable tremor in her left ankle.

Indexing terms: Chiropractic; *Soft Tissue Orthopedics*; Parkinson's Disease; bowel resection; temporal sphenoidal reflex points.

Introduction

This case report focuses on a patient with Parkinson's' disease (PD) with a relationship to genetic mutation involving the *methylenetetrahydrofolate reductase* (MTHFR) gene mutation along with acute traumatic stress resulting from unforeseen surgical procedures. It appeared that the patient's symptom picture and objective findings became significant after a surgical resection of the ascending colon caused by a resection due to perforation from a routine colonoscopy.

> *... it is possible for a diagnosis of PD to be wrong, however this takes nothing away from the care provided to this patient and the positive results she achieved ...'*

PD is the second most common neurodegenerative disorder after Alzheimer's disease representing approximately 0.3% of the whole population in industrialised countries. PD is more common in the elderly and prevalence rises from 1% in those over 60 years of age to 4% of the population over 80. (1) The mean age of onset is around 60 years, although 5–10% of cases, classified as young onset, begin between the ages of 20 and 502. The incidence of PD is between 8 and 18 per 100,000 person–years. (1) The disease is attributed to

selective loss of neurons in the *substantia nigra*, and its cause is enigmatic in most individuals. Symptoms of PD respond in varying degrees to drugs, and surgery may offer hope for patients no longer adequately controlled in this manner. (2) Currently there are studies on using stem cells to treat PD are under way but the prognosis depends on the patient's age and symptoms. (3)

Symptoms of PD include muscle rigidity, tremors, and changes in speech and gait. While the aetiology of PD remains mostly unknown. (3) Both genetic susceptibility and environmental factors are sometimes considered to be putative contributors to its origin. Recent epidemiologic studies have focused on the possible role of environmental risk factors present during adult life or aging, once pure genetic forms of PD are rare. Several possible risk factors may be implicated related to life style, past history, family history, occupational history and other exposures to potential neurotoxin agents. (4) A 2012 Swedish study noted that a '*33% overall excess risk of PD was noted among patients with an autoimmune disorder; the risk was increased during the first 10 years of follow-up after hospitalization of autoimmune disorders*'. (5)

'*Depression is a common finding with approximately 35% of patients with Parkinson disease (PD) and is often persistent. The underlying mechanisms of depression in PD are not known in detail, but changes in brain structure, signalling by neurotransmitters, and levels of inflammatory and neurotrophic factors are all suggested to contribute to its development*'. (6) Along with depression dementia has also been found associated with PD. A German study on the epidemiology of PD with dementia (GEPAD) (n=1449) found 28.6% met DSM-IV criteria for dementia, 33.6% met criteria for depression, and 61% additionally had other clinically significant psychopathological syndromes. (7)

The *methylenetetrahydrofolate reductase* (MTHFR) gene encodes an enzyme that plays an important role in processing amino acids, specifically the conversion of homocysteine to methionine. Mutations in the MTHFR gene lead to impaired function, or inactivation, of *methylenetetrahydrofolate reductase.* (8) Approximately 40% of Americans are carriers of MTHFR deficiency, while 10% have the condition. Since mutations in the MTHFR gene can lead to increased homocysteine levels this condition has been found associated with various cardiovascular related conditions. (9, 10)

Aside from cardiovascular related conditions elevated homocysteine levels has also been found related to inflammatory bowel disease (11) and elderly related dementia. (12) Is there any possible relationship between MTHFR and PD? Fong et al found that the '*influence of folate/ homocysteine conversion is considered to be important in the pathogenesis of PD*'. The findings from their study provide support for the '*synergistic effects of polymorphisms in the folate metabolic pathway genes in PD susceptibility; the increased PD risk would be more significant in carriers with the polymorphisms of MTHFR, MTR, and MTRR genes*'. (13) In another study they also discussed how increased homocysteine levels might accelerate dopaminergic cell death in Parkinson's disease (PD) through neurotoxic effects. (14)

Bowel perforation injuries during a colonoscopy result in a hole in the bowel. '*Perforation has been estimated to occur in approximately 0.2% of diagnostic colonoscopies and 0.6% of colonoscopies where biopsy is also performed,* (15) *but may in fact occur less frequently.* (16) *In 50–60% of cases, perforation occurs at the rectosigmoid region of the large bowel, with an additional 10–20% perforation rate at the cecum*'. (17, 18) Advanced age, female sex, the presence of multiple co-morbidities, diverticulosis, and bowel obstruction have been shown to increase the risk of perforation. (19)

A retrospective study (n=30,366) by Lüning found that of the colonoscopies performed, '*35 colonic perforations occurred (0.12%). All the patients underwent a laparotomy: for primary repair in 18 cases (56%), for resection with anastomosis in 8 cases (25%), and for resection without anastomosis in 6 cases (19%). The postoperative course was uncomplicated in 21 cases (60%) and*

complicated in 14 cases (40%), including mortality for 3 patients (8.6% resulting from perforations and 0.01% resulting from total endoscopic colon procedures)' (20)

As the human genome is being explored and evaluated in relation to human health and disease, the MTHFR gene has been shown to be an indicator for inflammatory conditions relating to cardiovascular health as well as neurological conditions as related to PD due to the inability of folic acid to be converted to methyl folate resulting in decreased levels of *Dopamine*, *Serotonin*, *glutathione*, and *tetrahydrobioterine*, which is critical in nerve production, protection and adequate balance of brain neurotransmitters.

Previously, alternative therapies involving nutritional therapy, and Chiropractic-related soft tissue procedures have not been investigated adequately for treatment of the PD patient but most studies tend to focus on surgical intervention and drug therapy. The methodologies offered in this paper may offer hope for PD patients suffering from this debilitating and degenerative disease.

The premise for this hope and help for patients suffering from PD is that utilising a holistic model may offer an alternative low risk intervention. *Soft Tissue Orthopedics* (STO) discusses a holistic model utilised with this patient called the *Triune of Health: A balance of body, mind, and spirit*. This model does not attempt to generalise PD patients but presupposes that no two patients, although exhibiting the same condition, illness or symptoms, will have the same underlying cause. This was particularly evident with this patient who presented with what appeared to be PD exacerbated by a MTHFR gene mutation and post-surgery for a perforated colon.

Case Report

Assessment

The patient is a 75 year old, petite, vivacious woman, widow, grandmother who is extremely sensitive, compassionate, fun loving, young in her being, open to explore health on all levels, follows through, compliant, well put together, and self-sufficient. She is a recovering alcoholic, history of breast cancer (surgery-right breast), cataract surgery, colon resection, angina, and recently had a diagnosis of PD in 2012.

The patient was an ongoing patient and upon returning for care in May of 2012 after surgical resection for a perforation of the colon, examination findings revealed a patient who had deteriorated significantly from her last office visit in March of 2012.

Her neurological and orthopaedic assessments revealed significant disturbances in her balance, co-ordination, and gait. Involuntary tremor was noticed in her left leg, and ankle. She was extremely weak, with muscle weakness of the lower extremities, inflexibility and rigidity of limbs and joints, with short-term memory loss.

The patient was also referred for an allopathic neurological assessment in case co-treatment became indicated. The neurologist confirmed the diagnosis of PD (May, 2012). Blood chemistry profiles were performed focusing on the gene's mutation as relating to the MTHFR. This was performed because as the human genome is explored, it is becoming more important to have knowledge of a patient's genetics, mutations and their determinant role in health and disease. Therefore with the patient's presentation of PD it was considered of great value to better understand the relationship between the gene mutation, MTHFR and its role in her health and illness.

Treatment & intervention

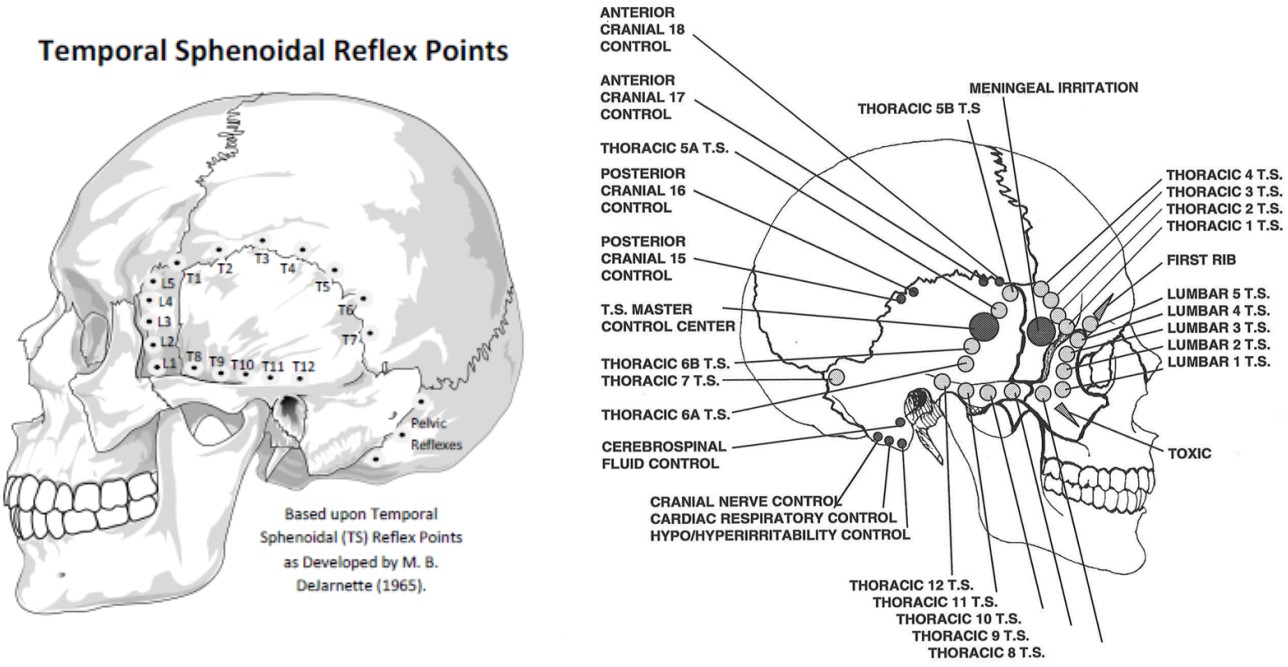
From a Chiropractic perspective utilising sacro occipital technique (SOT) as developed by MB DeJarnette, (21) she was determined to have a category one presentation. (22) A category one is a multifactorial presentation which focuses on the anterior sacroiliac joint having a fixation

secondary to pelvic torsion along with altered sacral nutation affecting CSF circulation from the lumbosacral cistern cranialward.

Soft Tissue Orthopedics as developed by ML Rees utilises various diagnostic and reflex testing that includes temporal sphenoidal (TS) diagnosis, (23) extremity and cranial-dural-sacral assessment, nutritional therapy, proprioceptor disruption reflex points, as well as orthopaedic and neurological tests. Spinal level dural port subluxations and reactive trapezius analysis were also performed as part of the assessment and examination.

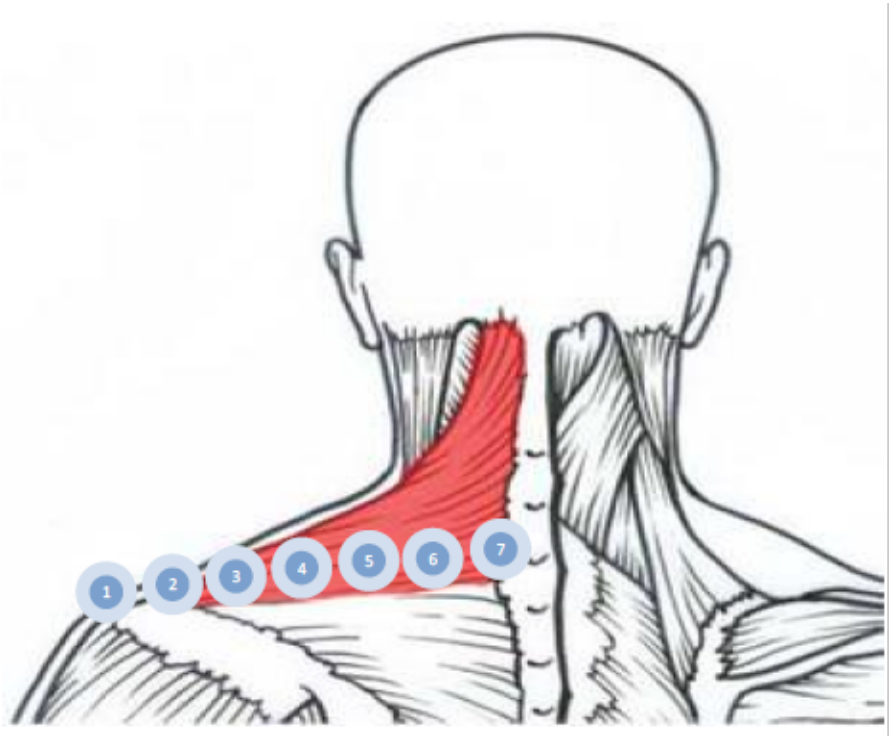
TS diagnosis discovered by DeJarnette and then further developed by Rees utilises points of sensitivity to palpation around the perimeter of the sphenoid and temporal bone as reflex points to assess and treat specific regions of the spinal column, soft tissue, and related viscera. While the patient's predominate category presentation related to cranial-dural-sacral (category one), features of other categories (two and three) also incorporated the investigating and treating of extremity kinematic chain influences.

Adjunctive nutritional therapy was guided by the TS findings as well as laboratory analysis related to the MTHFR gene mutation. Proprioceptor analysis (e.g., Anterior Iliac Wing Proprioceptors) is an aspect of STO that utilises specific reflex patterns and symptom presentations to localise predominant regions of proprioceptive imbalance in the body for treatment. Orthopaedic and neurological testing involves commonly used orthopaedic and neurological test to help corroborate the STO analysis and patient's response to treatment.



Dural port subluxations, typically related to SOT's occipital line two fibres and used in chiropractic manipulative reflex technique (CMRT), (25, 26, 27) were analysed utilising the TS line assessment and STO treatment protocols. The trapezius fibre analysis was an assessment tool initially developed by DeJarnette in the 1960s (28) and later expanded this assessment in the 1970s to involve what he termed the reactive trapezius (29) which involved specific pressures to the trapezius fibres. The trapezius fibres are located on the prone patient at the superior aspect of

the trapezius muscle divided into seven nodules between the acromioclavicular notch and lateral aspect of T1. (30) When a trapezius fibre would react to specific pressure by mounding this would indicate a possible pathological relationship between a vertebra and organ in its reflex arc. DeJarnette highly recommended a localised radiograph of the vertebral region if this reactive trapezius reflex arc was found to rule out any pathology.



Reactive Trapezius Fibers and Pressure Utilized							
Trapezius	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Thoracic	T1, T2, T10	T3, T11, T12	T4, T5	T6	T7	T8	T9
Lumbar			L1	L2	L3	L4	L5
Pressure	4.0 lbs / 1.8kg	3.5 lbs 1.6kg	3.0 lbs 1.4kg	2.5 lbs 1.2kg	2.0 lbs 0.9kg	1.5 lbs 0.7kg	1.0 lbs 0.45kg

The results of the initial examination found a category one, left occipital compression syndrome, reactive trapezius as relating to lumbar 4 (colon syndrome), and specific STO proprioceptor reflex points (31) (coronal neuronal pool number 5, anterior iliac wing number 4 left, and sternocleidomastoid proprioceptor 2 right).

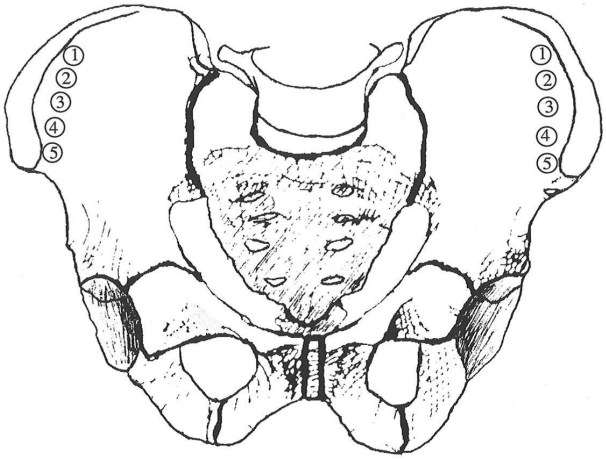
Gait testing showed extreme weakness upon left to right. Spider lace adhesions relate to findings during palpation of the bi-lateral mesenteric apron and colon. These adhesions were considered positive because they were sensitive to touch, there was restriction of the fascia surrounding the viscera, and STO related reflexes (vascular tree) were also sensitive to palpation.

Treatment incorporated TS diagnosis, visceral manipulation, and nutritional therapy. A method of assessing acute and chronic neurological conditions developed by Davis (32) was used clinically and is entitled the '*Glands of Self Destruct (GSD)*'. These GSD are reflex points areas on the body that purportedly become sensitive when there is acute or chronic neurological stressors in the region of the GSD reflex. To date 20 GSD areas have been found by Davis on the body and this patient had marked sensitivity at the lateral border of the right costal margins between ribs 3-9 (GSD reflex #1 – Dorland Gland). (32)

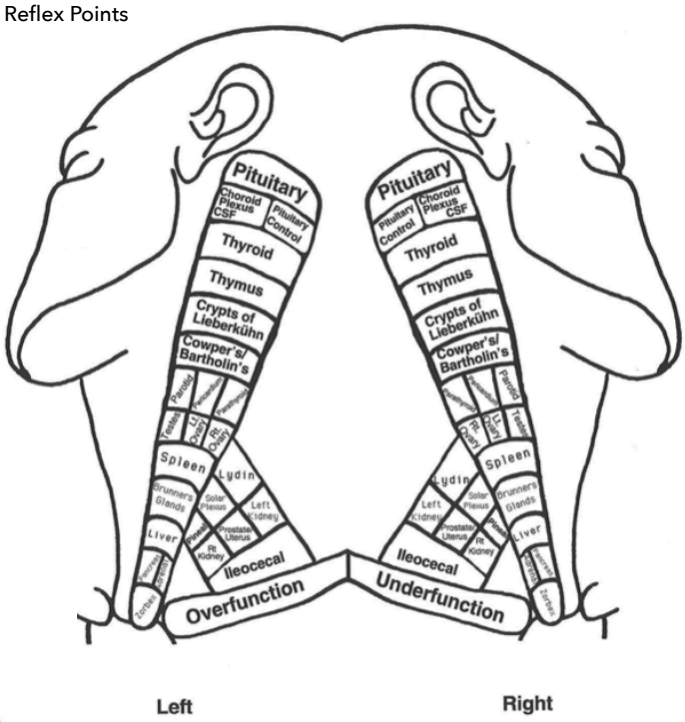
Results

In January 2013, the patient was re-evaluated by her third neurologist, a world renowned specialist, who found a ninety-five per cent improvement in her condition. He stated '*You baffle me, I do not see the signs and symptoms that you presented with*.' Her response to care was fairly profound because the two previous neurologists who told her '*You may want to consider it is important to get your life in order since you don't have much time left*'. As of her last treatment on January 22, 2013 as she was found to be strong, stable, with significant balance and stability, and only a slightly noticeable tremor in her left ankle.

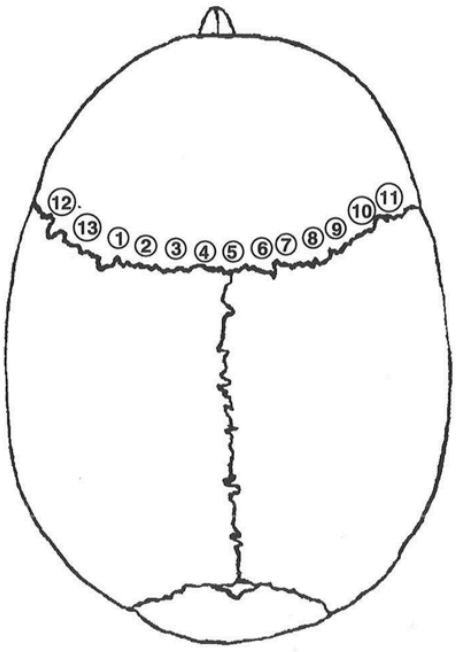
STO Proprioceptive Reflex Points



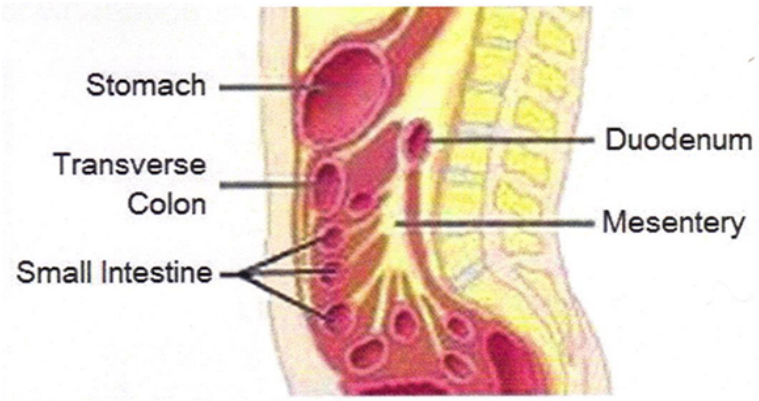
Anterior Iliac Wing Pools



Sternocleidomastoid Pools

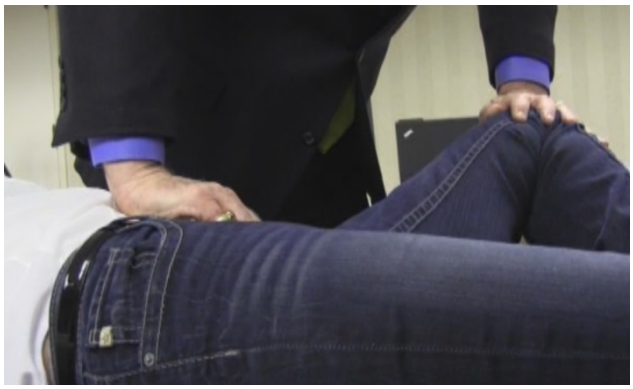


Coronal Neuronal Pools

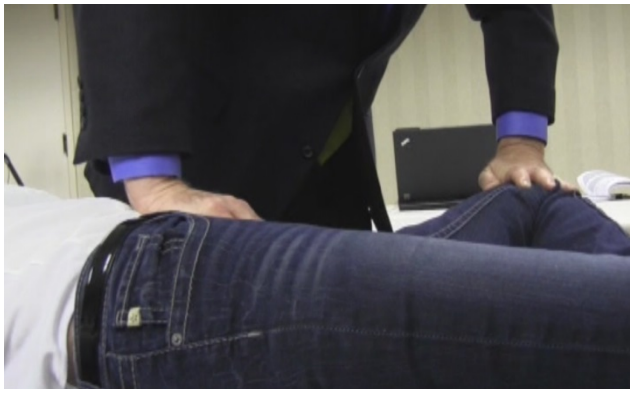


1. Palpate for tender areas on the medial lower legs (circulatory tree) between the knee and the ankle. Tender areas indicate a lack of blood supply (ischaemia) in the mesenteric apron.

2. Press into the soft tissue as shown below. While holding the tissue with one hand, bring the patients knee up with the other.



3. Continue to hold the tissue while stretching the leg out to the side as shown. (Ask the patient to give you a little bit of resistance while still allowing you to move the leg out.)



4. Stretch the leg all the way out.

From: Davis K. Using Temporal Sphenoidal Diagnosis/Bloodless Surgery for Rapid Assessment and Correction of Vital Organ Dysfunction and Related Spinal-Level Subluxations. Three Days with a Master Consolidated Reference Guide. 2012:277-278.

Due to her response to care at this time it was recommend that she consider lifetime support for the MTHFR gene mutation, maintained with nutritional support since it is theorised this would prevent a reoccurrence of her symptomatology. Continued assessment and focus on treatment protocols appears to be important along with adjunctive procedures in treating the patient and emphasising their particular presentation and not the disease or condition.

The Triune of Health as discussed by Rees and utilised in STO incorporates a holistic mindset which incorporate various physical neuromusculoskeletal distortions and their effect or interrelationship on the physical, biochemical, structural, mental/emotional and spiritual aspects of a patient. (33, 34). Ultimately the role as physician/doctor provides an opportunity to guide and help patients to take responsibility for the health and well being. Patient directed care involves physicians being teachers by instructing the patient how they can help make quality choices in their life style habits, rest, relaxation, and other stressors that can greatly alter their ability to maintain health and wellbeing.

Discussion

An informative brief overview of essential and PD tremors and possible relationship to chiropractic was discussed by Daniels. (35) Even though there have been a series of case studies or retrospective studies discussing a role of chiropractic in the treatment of PD (36 - 42) the level of evidence is relatively low and greater controlled studies will need to be performed to gain a greater understanding of chiropractic's possible role in the treatment of patients with PD. While it is unlikely that chiropractic may directly reverse any *substantia nigra* neuronal damage, still the treatment may help improve flexibility, balance, and strength.

Ultimately, the role of long term chiropractic care may be to provide early diagnosis, appropriate referral, and provide palliative care to improve the PD patient's quality of life and increase their activities of daily living. (35, 43) One aspect of this care could be utilising nutritional consultation and to facilitate any concomitant affects to a PD patient's presentation secondary to MTHFR gene mutation with vitamin supplementation such as an assimilable form of folic acid (*methylfolate* - sublingual) or adequate vitamin B to improve PD symptomatology. (44)

While various health practitioners determined the patient's diagnosis of PD it was notable that after six months of care the patient was able to walk into the office without aid, whereas on her initial visit for her presenting condition she had an unsteady gait, with significant balance disturbances and lack of co-ordination. Of significance to the patient she indicated that she had recently '*danced the night away at a wedding*'.

It is possible that the patient presented with a '*pseudo*' PD presentation, which was able to confuse various neurologists who specialise with these patients. It may be that she had a form of PD that was only slightly present but the threshold for its presentation was lowered by the MTHFR gene mutation and increased stress due to the perforated colon. Once these stressors were reduced or eliminated then her PD presentation likewise was allowed to go into remission.

Conclusion

This case discussed a patient who appeared to present with PD, had concomitant MTHFR gene mutation, and presentation complicated by a history of a perforated colon. The care was multifactorial involving holistic analysis and treatment (Triune of Health) and various STO assessments and treatments as developed by Rees.

Since this is only a case report without the ability to offer a control group or comparative procedures it is difficult to generalise the findings to the population at large. However this may offer a window into the treatment of PD patients who have MTHFR gene mutation and similar presentations as in this case.

Further research is indicated into the role of SOT, STO, and nutritional modification in the treatment of PD and if a specific subset PD may be best suited for this low risk conservative care.

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Soft Tissue Regional Orthopedics shall be considered that branch of Orthopedics the purposes of which are, by noncutting techniques, to prevent and correct soft tissue deformities, to preserve and improve the function of organs and organ systems and their nerve supply when such function is threatened or impaired by defects, lesions or diseases. (Rees, M.L. 1966)

In short, Soft Tissue Orthopedics (STO) is the correction of deformities and ailments of regional vital organs. STO is taught at seminars under the sponsorship of the Sacro Occipital Research Society International (SORSI) or the International Systemic Health Organization (ISHO). It has been taught since 1966.

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About the Chiropractor

Dr. Kenneth Y. Davis is the founder and developer of the Davis Advanced Health System, an integrative and preventative system of Advanced Chiropractic Procedures and Adjunctive Therapies that incorporate Craniopathy, Soft Tissue Orthopedics, Sacro Occipital Technique, Applied Kinesiology, Bio-Vibrational Therapy & Clinical Nutrition.

Dr. Davis is in private practice in Montclair, New Jersey and New York, New York for the past 46 years where he has enjoyed a waiting list practice. His patients have included professional athletes from the football and basketball arenas that have included Jason Kidd, now head coach of the Dallas Mavericks, and Michael Strahan of the New York Giants. Other celebrities have included Lorraine Bracco of the Sopranos, Dr. John, legendary musician, and Bobby Brown, CEO of Bobby Brown Cosmetics.

A graduate of the Columbia Institute of Chiropractic in 1976, where he also taught Sacro Occipital Technique for several years, Dr. Davis was certified as a Sacro Occipital Technique Instructor by Dr. M.B. De Jarnette and was certified by Dr. M.L.Rees in Soft Tissue Orthopedics. He has also acquired over four hundred post graduate hours in Applied Kinesiology having been mentored by Dr. George Goodheart, Founder and Developer of Applied Kinesiology. A Charter Member of the International Craniopathic Society, past executive treasurer, and principle instructor in the International Systemic Health Organization.

Dr. Davis is also co-developer of Natural Force Healing that he has been teaching throughout the United States and Internationally. Dr. Davis has 3 research papers published Asia-Pacific Chiropractic Journal, highlighting the use of Soft Tissue Orthopedic Techniques

and Piezoelectrical Methods.

Since 2009, Dr. Davis, has been presenting Three Days with a Master Series, three one day classes based on Dr. M.L. Rees' Temporal Sphenoidal Diagnosis, Bloodless Surgery, and Applied Nutritional Trophology. In 2011, he was presented with Dr. Rees' over fifty years of research by his son and daughter, Michael and Debra Rees in starting an archive of this research for practitioners throughout the world.

In 2012, Dr. Davis partnered with Gray Graham, owner of Biotics Research NW, in developing ENAT, Energetic Nutritional Assessment Technique which is currently being taught in the Pacific Northwest, the Midwest and Northeast.

In 2014, Dr. Davis moved his 37.5 year practice to Montclair, New Jersey where his practice has focused more on Wellness Based, Educational/Curriculum programs implementing a team approach that focuses on Cranial/Visceral Manipulation, Natural Force Healing, Lifestyle and Exercise Physiology, and Metabolic Typing.

Dr. Davis, continues to mentor and teach his Three Day Essentials program at his office in Montclair, New Jersey, where Health Care Practitioners are immersed for three days to learn the Davis Advanced Health System, as well as creating Continuing Education Programs, for Chiropractors and Physical Therapists for the Institute of Continuing Education in New Jersey.

In 2018, Dr. Davis at age 66, took up Body Building and competed in two National Championship NPC shows in New Jersey, where in June of 2019, he placed fourth in the over 60 class. In 2022, He was awarded with his Pro Card, having reached his goal of becoming a professional bodybuilder at age 70, competing in his first professional competition in Baltimore, Maryland, one month later. He was also featured on the April, 2019 and May, 2022 cover of Parrillo Press Magazine (focusing on Nutrition, Wellness, and Body Building).

In 2023, Dr. Davis, competed in three Pro Events, The Maxfit Pro, in Fort Walton Beach, Florida, The World Masters Championships, Placing first in Mens's 212 Bodybuilding, 70 plus… Daytona Pro was the last competition of 2023, placing second in Men's 70 plus competition, and dropping down to the 60 plus, Men's Physique division (never having competed in this division, placing in the top five.

In 2024, Dr. Davis competed in Men's Physique and Men's Bodybuilding in The Miami Pro, The Tampa Pro, The Worlds Master's Championship and will be competing I the Daytona Pro. Dr Davis has placed in the Top 5 in these events.

In 2024 he completed his second book, Holistic Bodybuilding, The Aging Antidote, available on Amazon and Barns and Noble, which not only describes his journey into competitive bodybuilding, but presents the three key factors for health and longevity: weight training, cardiovascular exercise, and optimal nutrition.

He is featured on the cover of the July, 2024 edition of Top Doctor Magazine, as well as being on the advisory board of the magazine, contributing monthly articles. In addition, he continues to play and study with world renown Keyboard Player, Tony Monaco on the Hammond B3 Organ.