## **Case Study**

# Reduction of Symptoms of Meniere's Disease & Trigeminal Neuralgia Following Upper Cervical Specific Chiropractic Care: A Case Study

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Rebecca Ellis D.C. <sup>2</sup>	<b>Objective</b> : To review and discuss the clinical outcomes of specific upper cervical and full spine chiropractic care on a 59-year-old female patient seeking care
1. Private Practice of Chiropractic,	following a trauma to the head and neck with diagnosed Meniere's Disease and Trigeminal Neuralgia.
2. Private Practice of Chiropractic, Spokane, WA	<b>Clinical Features</b> : The national presented with episodes of Menjere's Disease
	and Trigeminal Neuralgia (TN) following a fall on the stairs resulting in an impact to the base of her skull eighteen years prior. Following evaluations by her primary care physician, a rheumatologist, a chiropractor, and two otolaryngologists (ENT), symptoms have persisted despite treatment and changes in lifestyle and diet. The patient then sought upper cervical chiropractic care.
	<b>Intervention &amp; Outcomes</b> : The patient was adjusted with the Blair Upper Cervical Technique and the Thompson Technique. Over the course of 8 weeks, the patient had seventeen visits and one Blair cervical adjustment.
	<b>Conclusion</b> : This case study demonstrates how specific cervical chiropractic and light force full spine adjusting can have a positive improvement upon Meniere's Disease and Trigeminal Neuralgia symptomatology. Additional research is necessary to determine the relationship between spinal abnormalities, Meniere's Disease and Trigeminal Neuralgia.
	<b>Key Words</b> : Blair Technique, cervical, chiropractic, congenital abnormalities, congenital fusion, falls, full-spine, injury, Meniere's Disease, occipitalization, Trigeminal Neuralgia, adjustment, vertebral subluxation, Thompson Technique

#### Introduction

The Mayo Clinic describes Meniere's disease as a disorder of the inner ear leading to vertigo and hearing loss. It is characterized by recurring episodes of vertigo, tinnitus and aural fullness.<sup>1</sup> Trigeminal neuralgia is described as a chronic pain condition affecting the trigeminal nerve, affecting women more often than men, with mild stimulation causing great amounts of pain.<sup>2</sup> Mayo lists various treatments in the management of symptoms for both.

Meniere's Disease is very draining on a person's energy and their quality of life. With random occurring attacks of vertigo, activities of daily living (ADLs) can be very difficult. Further, the severity and frequency of the symptoms can be random or increase due to immune response, fluid dynamics or other factors.<sup>1</sup>

Trigeminal neuralgia attacks can be brought on by something as simple as sensation from a gust of wind or brushing your teeth. Attacks can feel like an electric shock or jabbing pain that can last from mere seconds to as long as minutes. The cause of the condition is tied to disruption of trigeminal nerve function. Often, some sort of compression is to blame, such as from a blood vessel or other structures in the body. It can also be a result of demyelination disorders.<sup>2</sup> Mayo Clinic makes it clear that there is no cure for Meniere's Disease, but that it might be possible to limit the frequency and severity of the vertigo episodes.<sup>1</sup> Provided that Trigeminal neuralgia is not caused by another condition, specific treatments might be suggested to reduce or block the pain. Those opting for non-surgical or non-pharmacological treatment might find alternative medicine, specifically chiropractic, an option, despite large populations being studied with this modality.<sup>2</sup>

#### Review of Literature

A review of the literature found not only had chiropractic been used in the management of Meniere's Disease but that the reduction of the subluxation at the craniocervical junction (CCJ) (also referred in chiropractic as upper cervical) in several patients showed a favorable response.<sup>3,4</sup> Similarly, Trigeminal Neuralgia (TN) symptoms have been shown to either resolve or improve with several techniques of chiropractic including but not limited to Diversified, Quantum Spinal Mechanics 3 (QSM3) and Blair Upper Cervical.<sup>4-6</sup> What was not found in the literature were patients presenting with both conditions and how they might improve with the reduction of a cervical subluxation.

It has been shown that by using specific cervical techniques, symptoms for Meniere's Disease following specific adjusting can resolve and ease symptoms. As described in Drs. Chung and O'Connell's case, after 22 adjustments to C1, the patient's major symptoms of vertigo and hearing loss had been completely eliminated.<sup>7</sup> In a case series published by Dr. Burcon, 10 patients started experiencing their symptoms after trauma to the neck, similar to the patient in our study. He went on to conclude that Meniere's Disease may not just be endolymphatic hydrops but that the vertebral subluxation complex (VSC) might also play a role.<sup>4</sup>

In our case, the patient not only received specific cervical care, but light force adjusting. While not the same, patients experiencing similar forms of gentle care have reported multisystem health changes. After the patient in one study received NSA care, stress education, range of motion (ROM) exercises and starting somato-respirator integration exercises, positives changes were found. Further, an auditory exam after four months of car showed improvements in hearing, especially at lower frequencies.<sup>8</sup>

## **Case Report**

#### History

When the patient initially presented to the clinic, it was for the treatment for symptoms she was experiencing after a trauma to the head and neck from eighteen years prior that was recently aggravated four days before to presenting to the clinic. Chief complaints ranged from cephalgia, cervicalgia, with occasional aural fullness and face pain. The pain lasts anywhere from minutes up to two consecutive days. It is made worst by cold air and looking up and is a little better with Pilates, eating a clean diet, sleep and managing stress.

The patient reported significant history of trauma. Eighteen years prior, she slipped on stairs and hit the base of her head.

To the patient's recollection, 2-3 years later, she suffered from whiplash after being in a motor vehicle collision in which she was rear-ended at 45 MPH.

Additional questioning about the complaints revealed the right ear pain started 10 years after her trauma and can be present independent of tinnitus. She also reported hearing loss in the right ear. Headaches and face pain can have sudden and lasting effects. November of that same year she suffered a vertigo attack she believes to have been caused by salt intake. During her presentation to the clinic, she reported left ear pain.

Further health history revealed asthma and wheezing from occasional allergies and a bilateral arm tremor, worse on the left.

## Chiropractic Physical Exam

Upon the first examination, the patient's thermography scan analysis revealed the patient had abnormal autonomic neurophysiology. Prone leg check revealed a 1/4 inch left short leg. Cervical syndrome was positive on the right. Modified Prill leg checks were positive on the left for both vertical and radial tests. Cervical range of motion was restricted in extension, right lateral flexion and both right and left rotation. Patient reported feeling unstable with cervical extension. Cervical distraction caused pain on the left in the region of C1.

Cervical palpation findings were positive for pain at the right of both C1 and C2. On postural evaluation, the head was not shifted nor tilted, but the ribcage had shifted 3/4 of an inch to the left and hips were tiled an inch to the left.

## Thermography Scans

Computerized infrared thermograph analysis using a wireless Tytron device was used to evaluate the presence of neurological pattern during the initial physical exam and during subsequent patient visits. Three scans were made during the exam to determine if a pattern was present, indicating abnormal autonomic neurophysiology and suggesting the presence of a subluxation. A pattern was established and confirmed on the second visit later that day prior to the patient's first upper cervical correction. Pattern is used on subsequent visits as an objective measure to help determine if the patient is holding their upper cervical adjustment or if an additional correction is needed.<sup>9</sup>

## Leg Length Inequality (LLI) Procedure

During the physical exam, leg length inequality was compared with cervical syndrome and Modified Prill Leg Checks as defined in the Blair Upper Cervical Technique (Blair). The Modified Prill Tests correspond to specific levels of the spine. The Vertical test corresponds to C1. The Rotational, aka Radial, corresponds to C2 and the Sacrum. The Medial test corresponds to the level of C3 and the lateral test for C4. For this patient's exam, only the Vertical and Radial were positive with leg shortening on the left.<sup>9</sup>

#### Radiographic Imaging Procedure and Analysis

Radiological exam was initiated after physical exam in order to assess the patient's spinal health and alignment. A Base Posterior (BP)[Figure 1], Anterior-Posterior Open Mouth (APOM) [Figure 2], Neutral Lateral Cervical [Figure 3], and right and left Cervical Oblique Protraco views [Figure 4 and 5] were taken as standard protocol for the Blair Technique. All five images were taken with the patient in a seated position in a posture-constant chair utilizing head clamps to limit motion during imaging.<sup>9</sup>

In addition to the Blair series of radiographs, Flexion-Extension images [Figure 6 and 7] were indicated in order to assess movement of the atlas relative to the occiput to rule in or out occipitalization of Atlas, which was visualized on the Neutral Lateral Cervical image. Flexion-extension images for the patient showed no movement of C0(occiput)-C1, confirming occipitalization. Anterolisthesis of C4 on C5 increased from 2.5 to 3.47 mm in flexion and reduced to 1.83mm in extension. Posterolisthesis of C5 on C6 of 3.35mm was also visualized with reduction in both flexion and extension to zero.

With the Blair protocol, a cervical subluxation listing was determined for C4 as Anterior-Left-Superior (ALS) as the primary misalignment. Occipitalization of Atlas was also noted in addition to congenital fusion of C2 and C3 with a mega-spinous and wasp-waist appearance. Blair Oblique Protracto images confirmed the occipitalization of atlas with no visible articulation between the occiput and atlas.

#### Blair Technique

The Blair Technique and analysis was utilized to assess and adjust the patient's VSC, found at the fourth cervical vertebra. Typically, the Blair Technique is applied primarily for the CCJ with the primary VSC found at atlas or axis. For this particular case, the primary subluxation was found to be at the fourth cervical level due to anomalies in the upper cervical/CCJ spine.

## Light Force Thompson Technique

In addition to specific cervical chiropractic care, light force adjusting was utilized to address the subluxations of the full spine. Light force adjustments involved utilizing the Thompson Drop Table technique without the use of drops or high-velocity, low-amplitude (HVLA) movements. A gentle pressure is applied with a specific vector to make the correction. This technique is not to be confused with the analysis or adjusting of Network Spinal Analysis (NSA). While it could be considered to be similar in the sense of being a gentle, full-spine adjustment, the analysis and adjustment is very different.

#### Treatment & Outcomes

Over the course of eight weeks of care, the patient had their cervical misalignment corrected once. This correction held through the duration of initial care plan which spanned into eight weeks due to patient scheduling and availability. Light Force Thompson Technique was utilized at each visit. At the time of re-evaluation, the patient's Global Well Being Scale had not shifted. The Numeric Pain Scale rating pain perceived right now was reported initially at zero and increased to one; this reflects that the patient was not currently experiencing episodes of TN or Meniere's Symptoms at the time of re-evaluation. Activity Limitations, originally reported at an 8/10 with the patient being able to do little to nothing during an episode of symptoms, was now at a 0/10 due to lack of having any episodes since starting care. The patient's indicated Global Perception of Change was "much better" compared to prior to starting care.

Follow up care since the time of re-evaluation has been limited, due to patient's availability to care due to extensive transportation. She can suspect when she is out of alignment due to the reoccurrence of symptoms and therefore schedules as needed. The patient lives three hours from the nearest office providing Blair Upper Cervical Technique care.

## Discussion

Meniere's Disease and Trigeminal Neuralgia negatively affect the quality of life and ability to perform activities of daily living for those that suffer from them, either independently or concurrently. Treatment for these conditions can be quite invasive and with varying levels of success and therefore many of those suffering look for alternative therapies. The primary focus of the Chiropractic care is to reduce the VSC. While this cannot guarantee the reduction of symptoms of Meniere's Disease or Trigeminal Neuralgia, it is clear that patients can benefit from being under Blair chiropractic care prior to trying interventions with more serious side-effects or complications.

A complex region of anatomy, the CCJ is an extremely compact and neurologically dense region. While the subluxation of one or more cervical vertebra may not be the direct cause of these conditions, the resolution of the misalignment might be what allows for other structures to resolve their dysfunction thus leading to a reduction or elimination of symptoms. The patient not only had an anomaly of C0/C1 and C2/C3, but the case was further complicated with trauma to the base of the head in a fall, in addition to a rear-end motor vehicle collision (MVC) with whiplash.

With the pairing of Blair Technique and Thompson light force adjusting, the patient was able to hold their cervical correction throughout their initial phase of care. After ten years of prior medical management, including but not limited to dietary changes, breathing exercises, toxin elimination, rheumatologist and ENT care, the patient was finally able to experience relief from her symptoms with minimally invasive, specific chiropractic care.

#### Conclusion

While case studies and other forms or research are limited on how chiropractic can improve health outcome for patients with Meniere's Disease or Trigeminal Neuralgia or both, it is clear that it might offer some relief by reducing a subluxation of the cervical spine. With success in management from various chiropractic techniques, more research and understanding is needed to understand what techniques might be best at reducing frequency and intensity of symptoms. It is also not well understood how congenital anomalies like occipitalization play a role in experiencing complications after trauma or limit improvements with chiropractic.

It is evident for this patient that some forms of previous chiropractic or medical management did not help resolve her symptoms. Blair Upper Cervical benefited the patient after many years of suffering. In addition to subjective complaint improvement, objective outcomes clearly point to an improvement of quality of life and ability to complete ADLs with less limitations. Her Activity Limitation scale and Global Perception of change were all significantly improved.

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## Figures



Figure 1. Base Posterior



Figure 3. Neutral Lateral



Figure 2. Anterior Posterior Open Mouth



Figure 4. Right Cervical Oblique Protraco



Figure 5. Left Cervical Oblique Protraco



Figure 6. Cervical Flexion



Figure 7. Cervical Extension