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PRIMARYEVIDENCE

Integrating temporal-sphenoid reflexes, sacro-occipital technique procedures, and reflexology for treatment of chronic cervical pain and reduced range of motion: A report of 2 cases

Harvey Feenstra and Charles L Blum

Abstract *Introduction:* The purpose of the following two case studies was to investigate how a combination of temporal sphenoidal (TS) reflexes, chiropractic manipulation, viscerosomatic reflexes, and foot reflexology could have a positive effect on cervical spine range of motion.

Case Reports: Case #1 involved a 38-year-old female with chronic (17-years duration) neck and low back pain. Case #2 involved a 43 year old male presenting with chronic (6-months) neck and low back pain with limited cervical range of motion.

Methods/Intervention: Treatment utilised sacro occipital technique (SOT) protocols, TS reflexes, cervical manipulation, and foot reflexology to treat chronic cervical pain associated with limited range of motion.

Results: Case #1, following the first treatment noted full range of motion in all directions and the presenting pain reduced from an 8 to a 3 on a pain scale of 1-10. Case #2 received 11 treatments over a 3-4 week period of time and by the 11th office visit right lateral flexion was full and presenting pain was reduced from an 7 to a 2-3, all other motions were full and pain free.

Conclusion: Further research is indicated with a larger sample and more outcome assessment tools to further investigate this method of care.

Indexing terms: Chiropractic; temporal-sphenoid reflexes; chronic cervical pain; cervical spine; sacro-occipital technique.

Introduction

Neck pain is a common disorder. (1, 2, 3, 4, 5) About 70% of adults will experience neck pain during their lifetime, and its point prevalence in the general population is around 22%. (1, 2, 4, 5) After low back pain, neck pain is the most common reason patients give for seeking chiropractic care, and the second most common reason for the use of spinal manipulation. (1, 6, 7) Treatment of neck pain is costly in terms of utilisation of health care services, disability, compensation payments and lost work productivity. (7, 8)

The cause of neck pain is multifactorial and can be due to musculoskeletal conditions, trauma, systemic conditions, infections, inflammatory conditions or neoplasm. (1, 4) Usually, the underlying cause of neck pain is non-specific and

'... a conservative approach as described in this report is able to achieve clinical benefits with noted patient improvement. The lesson is to have a range of clinical tools that can be tailored to the patient's presenting symptomatology ...'

cannot be related to a particular pathology as a cause of the presenting symptoms (4, 5) Numerous reviews (2, 3, 9, 10, 11) have assessed the evidence for the effectiveness of cervical spine manipulation and mobilisation in the treatment of non-specific neck pain with mixed results. (1) Very few clinical trials have studied manual therapy for subacute neck pain, (8, 12, 13, 14) with the research emphasis being placed on those subjects with complaints lasting for longer than 6 months. (14)

There is much discussion in the literature about the risk of stroke caused by cervical manipulation; however, Cassidy et al (15) found the risk of stroke associated with GP or chiropractor visits was equal. (1) This suggests that cervical manipulation may not be a cause of stroke, but associated with a stroke in progress. Chiropractors need to be aware that some patient's presenting with head or neck pain, may have a stroke in progress. (16)

Welcha and Boone suggest that cervical adjustments may result in parasympathetic responses, whereas thoracic adjustments result in sympathetic responses. (17) Historically chiropractors have suggested the positive effects of chiropractic adjustments on musculoskeletal and visceral health. (18, 19, 20) Some studies have investigated chiropractic vertebral subluxation, spinal manipulative therapy, and cranial adjusting in relation to autonomic function. (17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30)

The purpose of the following two case studies was to investigate how a novel combination of temporal sphenoidal reflexes, chiropractic manipulation, viscerosomatic reflexes, and foot reflexology could have a positive effect on cervical spine range of motion. (31, 32, 33)

Case Reports

Case #1

This case is a 38 year old female with chronic (17 years duration) neck and low back pain. She demonstrated limited cervical range of motion unresponsive to multiple prior interventions. Cervical range of motion evaluated flexion, extension, right and left lateral flexion and rotation. Prior to the adjustive procedure, the patient had marked restriction of range of motion and noted exquisite pain when limits of range of motion were reached in all directions.

Case #2

This case is a 43 year old male presenting with chronic (6 months) neck and low back pain with limited cervical range of motion. Cervical range of motion evaluated flexion, extension, right and left lateral flexion and rotation. Prior to the adjustive procedure, the patient had marked restriction and noted exquisite pain in the upper thoracic spine on right lateral flexion and left rotation restrictions which produced significant pain generalised to the cervical spine.

Methods/Intervention

This novel intervention utilises sacro occipital technique (SOT) protocols for analysis and treatment, temporal sphenoidal (TS) reflexes, cervical manipulation, and foot reflexology to treat chronic cervical pain associated with limited range of motion.

A general assessment of lumbar range of motion is assessed initially. SOT Category II protocols are performed, as appropriate, including a rib cage assessment by stretching the patients arms over their heads. If there is reduced motion on one or both sides, this is treated by releasing the ipsilateral *psoas* or sometimes also the quadratus lumborum muscles. Then the patient's pelvis is assessed for torsion and any sacroiliac joint instability (category two). If a category two imbalance is found then that is treated before proceeding to the cervical spine.

The cervical spine is analysed with the patient supine. Side-bending the head right and left is performed. The side that has no side bend or shows restriction (lateral flexion only, not rotation) is chosen as the posterior cervical side. The posterior cervical side is then rotated to the opposite

side and the doctor palpates for intersegmental muscular congestion, swollen facets or painful articular facets.

Once the most painful cervical articular facet is identified, the head is turned toward the opposite side. TS reflex points are palpated searching for the most sensitive point (e.g., *Cervical 3* would relate to either *Thoracic 4* or *5*, or *Lumbar 1*) as determined by patient sensitivity to palpation.

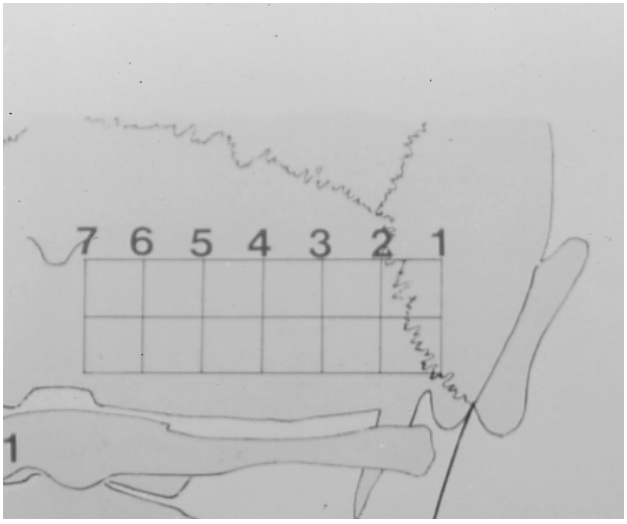
The region of cervical vertebra congestion is held in the downward position with the head turned so the TS reflex region is placed upwards. The doctor manipulates the tender TS reflex approximately 15 seconds and then has the patient give a deep cough. This is repeated until sensitivity at the TS reflex point is relieved, which usually takes less than a minute.

With the head turned away from the posterior cervical side, we have the patient look down towards their feet as the head is moved slightly into flexion while exhaling. A cervical adjustment is made as the patient moves their head upward and looks at the doctor's eyes while inhaling.

Utilising the occipital fibre CMRT relationship and TS reflex point relationship, a specific organ will be determined to be used with the foot reflexology aspect of the treatment protocol. Generally these point(s) will be very painful. They are manipulated with pressure for about 15 seconds followed by having the patient cough. The manipulation and coughing are repeated until the pain is gone, approximately 1-2 minutes, at which time the other foot is evaluated and treated in the same manner.

Chiropractic Manipulative Reflex Technique

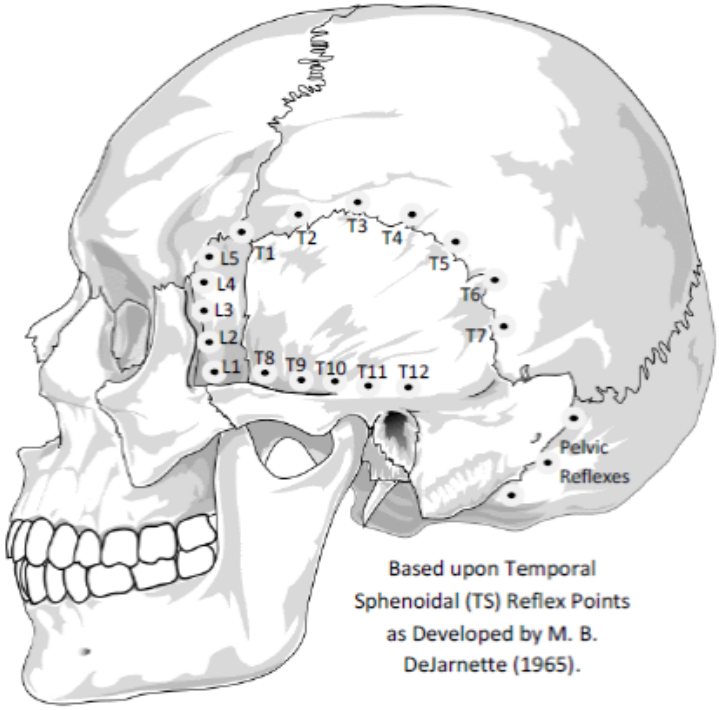
Cervical Vertebra - Occipital Fiber – Line Two - Fiber Association



Fiber 1: T1 (cardiac), T2 (myocardial), and T10 (intestinal) = **C1**
Fiber 2: T3 (respiratory), T11-12 (kidney) = **C2**
Fiber 3: T4 (gall bladder), T5 (gastric), and L1 (ileocecal) = **C3**
Fiber 4: T6 (pancreas) and L2 (cecal) = **C4**
Fiber 5: T7 (spleen) and L3 (glandular) = **C5**
Fiber 6: T8 (liver) and L4 (colon) = **C6**
Fiber 7: T9 (adrenal) and L5 (prostate/uterus) = **C7**

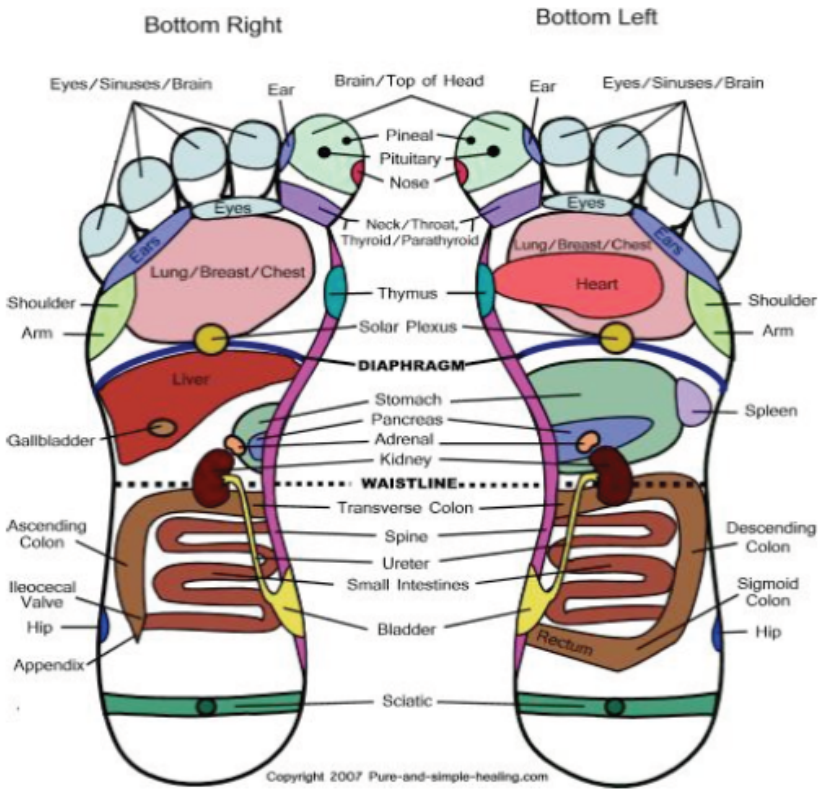
Maintaining the same position as when manipulating the TS reflex the head is maintained in this same position and the cervical spine is then adjusted in the following manner. Initially the patient is instructed to look footward, tilting chin downward, and exhale and then have the patient look upward, tilting chin upward, and inhale. At the instant the patient inhales and both tilts head and looks upward the doctor makes the cervical adjustment. If the patient prefers the doctor can also adjust the cervical spine using SOT's cervical stairstep procedure.

Temporal Sphenoidal Reflex Points



Based upon Temporal Sphenoidal (TS) Reflex Points as Developed by M. B. DeJarnette (1965).

FOOT REFLEXOLOGY CHART



Once completed, the patient's lumbar and cervical ranges of motion are re-assessed and compared to their initial presentation.

Specific care for case #1 involved releasing any imbalance in the *psoas* and supine pelvis (category two). Cervical congestion was found at C4 bilaterally, with a TS reflex point on the contralateral side at the T6 region also bilaterally and the TS reflex points were manipulated until no longer sensitive. C4 was adjusted on the right and left side and associated T6 reflex. Per DeJarnette's protocol, CMRT procedures for the pancreas were performed along with related foot reflexology points related to the pancreas.

Specific care for case #2 involved releasing any imbalance in the and supine pelvis (category two). Cervical congestion was found at C7 on the right, with a TS reflex point on the contralateral side at the T9 region on the left which was manipulated for 15 seconds and having the patient cough until TS reflex sensitivity was eliminated. In retesting right lateral flexion, the patient still reported upper thoracic pain. Therefore, occipital fibres were assessed and an area one, fibre 7, was noted on the left without sensitivity. Occipital fibre technique adjustment was used to T2 on the right and CMRT myocardial reflex work was utilised. Foot reflexology for the heart reflex (area below the little toe) on the right was very sensitive. After 15 seconds of stimulation, the foot reflex became non-painful. Cervical reflex area lateral side of '*big toe*' was also very painful. After 1½ to 2 minutes of manipulation this reflex point also became non-painful.

Results

The patient in case #1, following the first treatment, had her cervical range of motion reassessed. Full range of motion was noted in all directions and the presenting pain (8 on a pain scale of 1-10) was reduced to '*soreness*' (3 on a pain scale of 1-10). The patient in case #2 received 11 treatments over a 3-4 week period. By the 11th office visit right lateral flexion was full, but instead of pain in the upper thoracic (7 on a pain scale of 1-10) the discomfort was reduced to '*soreness*' (2-3 on a pain scale of 1-10). Left rotation was full without any discomfort. All other motions were full and pain free.

Discussion

In both cases the patients presented with long term cervical spine discomfort and limited range of motion that improved following treatment. Clinically attempts have been made to add or eliminate one or other aspect to the presented method, but what has been presented appears to be consistently effective for the treatment of chronic cervical spine pain with associated limited range of motion. This improvement in pain and increase in range of motion has been found to be an effective tool to assess patient progress and response to care in the long term. (34)

There have been studies that have demonstrated a relationship between cervical spine manipulation and improved cervical range of motion. (31, 32, 33) A relationship between the cervical spine and sacroiliac joint and a relationship between a category two (sacroiliac instability) and cervical spine extensor isometric strength (36) and lumbar range of motion (37) have been discussed in the literature. (35)

Temporal-sphenoidal (TS) lines or reflexes was first introduced by MB DeJarnette in 1965 (38) and later further investigated and developed by ML Rees. DeJarnette had already investigated and developed reflex methods of analysing patterns of vertebral imbalance using trapezius (39) and occipital fibre palpation (40)and treatment methods. The TS reflex was an additional tool using patient's report of pain to palpation at a region surrounding the temporal and greater wing of the sphenoid, essentially the region of temporalis muscle insertion. He postulated that sensitivity at specific points superior portion of the temporalis muscle insertion near the squamous portion related to thoracic 1 through 7 (anterior to posterior) whereas thoracic 8 through 12 (anterior to posterior related to regions near the temporal eminence towards the mastoid process. The

anterior portion of the greater wing of the sphenoid related to lumbar vertebra 1 through 5 (inferior to superior) and sensitivity at the occipitomastoid suture to the parietomastoid suture regions was related to the pelvis. (38)

The thoracic and lumbar points of sensitivity along the TS lines were determined by DeJarnette and Rees to have a relationship to DeJarnette's occipital fibre vertebral relationships as described in chiropractic manipulative reflex technique (CMRT). (41) CMRT methods have been gaining evidence in recent years as evidenced by studies on animals, (42, 43) a patient with situs inversus, (44) a controlled clinical pilot study, (45) and a small randomised controlled study. (46)

As chiropractors have been exploring the treatment of nonmusculoskeletal conditions with manipulative procedures, (47) incorporating foot reflexology into a patient clinical encounter seemed reasonable. Foot reflexology treatments apply pressure to specific points or areas of the feet. According to the principles of reflexology, areas of the feet correspond to different parts of the body, and applying pressure to these areas can affect the corresponding parts of the body. In some cases, pressure may also be applied to the hands or ears. (48)

For thousands of years, techniques similar to reflexology have been used in Egypt and China. A technique called '*zone therapy*' was developed in the early 20th Century by an American physician named William Fitzgerald. He suggested that maps of the foot could be used to diagnose and treat medical conditions. He divided the body into 10 zones and labeled what he believed to be the corresponding parts of the foot. He proposed that gentle pressure on the foot could bring relief to the corresponding zone. (48)

In the 1930s, Eunice Ingham, a nurse and physiotherapist, further developed these maps to include specific reflex points. Zone therapy was renamed '*reflexology*'. Reflexology charts have diagrams of the feet with corresponding parts of the body. The right foot corresponds to the right side of the body, and the left foot corresponds to the left side. (48)

Evidence for this method of care is limited but studies suggesting its effectiveness are slowly emerging. Recent research has found foot reflexology helpful in treating specific female conditions, (49, 50, 51) respiratory disorders, (59, 60, 61) various other disorders, (62, 63, 64, 65, 66, 67, 68, 69) and as a part of oncology treatment. (52, 53, 54, 55, 56, 57,58)

As with any case report or series, without a control group or comparison intervention it is difficult to rule out regression to the mean, ideomotor, or placebo effects. However, the chronicity of the patient's presentation, the previous unsuccessful methods attempted to resolve their condition, and the successful response to the specific intervention makes compelling evidence for further study.

Conclusion

These two case reports illustrate one patient who had chronic cervical spine pain and limited range of motion for 17 years (case #1) and another for 6 months (case #2) and who both responded favourably to SOT category two treatment, TS reflex and cervical manipulation as well as foot reflexology.

Further research is indicated for a larger sample with control group, and comparison interventions. Greater outcome assessment tools involving pre and post neck disability index forms and a reliable range of motion assessment tool would be useful.

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