

**DENTAL CHIROPRACTIC NON-SURGICAL CO-TREATMENT OF A 48-YEAR-OLD MALE PATIENT WITH A DEVIATED SEPTUM, HEADACHES, AND TMJ DYSFUNCTION: A CASE REPORT**

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**Dental Chiropractic and TMJ Dysfunction**  
Shirazi et al

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**ABSTRACT**

**Objective:** A 48-year-old male presented for care due to complaints of a deviated septum, headaches, and temporomandibular (TMJ) dysfunction.

**Clinical Features:** The patient noted occluded nasal breathing rated at 1-2 on a 1-10 scale with full airway function at a 10 (10 representing full airway function). He also had right-sided suboccipital migranous headaches occurring once-a-week, lasting 24-48 hours. The headaches were relatively unresponsive to medication and rated at an 8 on a pain scale of 1-10 with 10 being most painful possible. Visual inspection revealed a left nose deviation and TMJ deflection with crepitus.

**Intervention/Outcome:** The patient's initial chiropractic care included 17 cranial facial release (CFR) nasocranial balloon treatments, sacro occipital technique (SOT), and a sacroiliac joint (SIJ) support belt. The dentist prescribed a temporomandibular/obstructive sleep apnea (TMD/OSA) night and daytime appliances, acupuncture, and cold laser therapy. The patient was referred to another chiropractor for SOT cranial and chiropractic manipulative reflex technique (CMRT) care (6 office visits). The patient responded favorably to the interdisciplinary care and noted increased/improved nasal breathing rated at 7 with associated significant reduction in headache frequency/intensity.

**Conclusion:** Two chiropractors (CFR, SOT, Cranial, and CMRT) and a dentist/acupuncturist treated this patient leading to improved nasal breathing and reduced TMD/headaches.

**Key Indexing Terms:** Headaches, Deviated Septum, Temporomandibular Joint, TMJ, Sacro Occipital Technique, SOT, Craniofacial Release Technique, CFR, Dental Chiropractic Co-managed Care.

## INTRODUCTION

Unraveling a complex patient presentation is a challenging endeavor and often necessitates interdisciplinary cooperative care. This case report focuses on a 48-year-old male patient with a history of a deviated septum, breathing difficulties, headaches, and TMJ dysfunction. Initially in the differential diagnosis process, it is crucial to consider whether these conditions are more likely independent or possibly interrelated, necessitating interdisciplinary care.

A review of the literature suggests that a relationship may exist between reduced oxygenation and headaches. (1) Supplemental oxygen has been used to treat some types of headaches successfully.(2) Deviated septums affect oxygenation and ease of breathing. Two kinds of septal defects may be found “independently, or together: 1) anterior cartilage deformity of the quadrilateral septal cartilage, caused by direct trauma or pressure at any age; and 2) combined septal deformity involving all the septal components, caused by compression across the maxilla from pressures occurring during pregnancy or parturition.” (3) In one study, the incidence of septal deformity in adult skulls was found to be 21% straight, 37% deviated and 42% kinked.(3) The prevalence of deviated septum, as estimated by the population of the USA being managed for this condition at any given time, is approximately 1 in 124 or 0.80% or 2.6 million people.(4)

Viewing the patient’s presentation from another perspective, there are relationships between obstructive sleep apnea (OSA), temporomandibular joint disorders (TMD), and headaches. Substantial improvements in headaches have been reported as a result of successful management of sleep disorders that may incite headaches from heavy snoring or the various forms of insomnia.(5) Other studies have found that “treatment of the temporomandibular region has beneficial effects for patients with cervicogenic,”(6) temple,(7) myogenous, and tension headaches.(8) Of interest is that the OPPERA study determined that there is “a significant association of OSA symptoms and TMD, with prospective cohort evidence finding that OSA symptoms preceded first-onset TMD.”(9)

Surgery for deviated septums has been employed since ancient Egyptian times for breathing disorders and headaches.(10) The principles behind deviated septal surgery remain much the same today with of course procedures undergoing refinement over the millennia.(10) Surgical procedures for a deviated septum have been shown to be efficacious in improving nasal airway space.(11,12) However, any surgical procedure presents risk. Because of that risk, a new medical procedure touted as an alternative to surgery called “balloon septoplasty” is being performed by otolaryngologists.(13) This “new” procedure involves having the doctor “snake a balloon” within the nose and into the nasopharynx using a device to increase pressure and expansion of the nasal passage way. A similar procedure has been used since the early 20th century by chiropractors and naturopaths. (14) This procedure was used along with sacro occipital technique (SOT), chiropractic/cranial techniques and dental TMJ care (15) for this patient.

## CASE HISTORY

A 48-year-old male presented with complaints of occluded breathing on the right side of his nose rated at 1-2 on a 1-10 scale with full airway function at a 10. He also presented

with right-sided suboccipital headaches described as migraines occurring once a week and lasting 24-48 hours. The headaches were relatively unresponsive to medication and rated at an 8 on a pain scale of 1-10 with 10 being most painful possible. Visual inspection of the patient revealed a nose deviation to the left. The TMJ in static posture deviated to the right, and a right sided side-bending sphenobasilar cranial strain pattern was observed. (16)

Upon jaw opening, the incisal midline moved from the right toward midline and even slightly past midline to the left and then on full opening back to center without any joint crepitus. C1 imbalance was noted on the right as displaced in an anterior superior right transverse process posterior along with an inferior position of the occiput on the right side. In addition, C7 and T1 spinous rotations were noted oriented towards the left with right unilateral costotransverse and scalenus muscle mid-belly sensitivity to palpation.

### **Initial Chiropractic Methods/Intervention**

The patient was treated a total of 17 times with cranial facial release (CFR), cranial balloon treatments,(17-20) and sacro occipital technique (SOT) care including pelvic blocking for sacroiliac joint hypermobility and pelvic torsion.(21) Following SOT care, manual cranial adjusting procedures were employed.(22) A sacroiliac joint (SIJ) support belt was given to help stabilize the patient's right sacroiliac joint.

### **Initial Chiropractic Results**

The patient responded favorably to care and noted increased/improved breathing from right side and left side of his nose with the right side rated at 7 out of 1-10 post CFR treatment. The patient's headaches reduced from once a week to once every two weeks with less severity (4-5/10) and decreased duration instead of lasting all day to hours at a time.

However, since headaches persisted though less severe with TMJ altered translation, the patient was referred to a chiropractor certified in SOT cranial technique with a specialty in TMJ dental co-treatment. This chiropractor trained in craniodental co-treatment then referred the patient to a dentist for dental TMJ care anticipated to help further improve the patient's airway.

### **Dental - Chiropractic Methods/Intervention**

The dentist had a primary focus of TMJ treatment with acupuncture training. The dentist prescribed a TMD/OSA night appliance, daytime TMJ repositioning appliance, acupuncture, and cold laser therapy. The TMD/OSA appliance was utilized, even though the patient did not have a home sleep study, which is used to monitor apneic and/or hypopneic events. There was evidence of UARS (upper airway resistance syndrome), a common finding with nasal septal defects which cause resistance to breathing (23-25) and often related to bruxism. (26) The nighttime appliance was fabricated to hold the patient's TMJ in centric relation (CR) simultaneously reducing the patient's bruxism 50-100%, in

addition to preventing the mandible from assuming a retrognathic position during supine sleeping. (27)

The daytime TMJ appliance was prescribed to be worn during all waking hours for 10 weeks, even while eating. The swallowing reflex occurs 2000-3000 times a day which makes one's teeth touch, and in the case of the TMJ disorder occurring with the patient, triggers the nociceptive effect on the joint capsule and associated structures, a similar action to chewing food and speaking.(28) The daytime appliance placed the patient in the minimum speaking space position that allowed CR the phonetic position, and only came in contact to hold CR when swallowing or chewing,(29). In this manner, repeated nociception is decreased or eliminated altogether. One reason why TMJ disorders are so critical in the management and treatment of tension headaches is their relationship with the cervical spine and forward head posture. (30-33)

Acupuncture protocols were used by the dentist to address TMJ pain and headaches as a means to complement the TMJ dental care. (34) Red laser was also used (30 seconds) to increase microvascularization via increased nitric oxide levels, with added pulsed long frequency (808 nanometers) to increase ATP production of mitochondria for cell function. (35) The chiropractor working specifically with the dentist continued with SOT and SOT cranial care. However as the patient condition was stabilizing and the headaches were not completely resolving, further assessment revealed the patient had a viscerosomatic reflex imbalance. This imbalance related to a SOT viscerosomatic assessment process, which incorporates sensitivity at specific areas along the occiput, related vertebra in a reflex arc associated with the sensitive occipital reflex area, viscerosomatic referred pain distribution, patient history, and clinical findings (laboratory analyses). With this patient palpatory sensitivities were noted at their occipital fiber area 3, their right 4<sup>th</sup> thoracic transverse process, and at their gall bladder referred pain locations. These findings indicated a possible gall bladder reflex contribution to the patient's presentation so chiropractic manipulative reflex technique (CMRT) was employed. (36)

### **Dental – Chiropractic Results**

The patient is still under dental/chiropractic care for approximately 12 months, initially seen twice a month for 4 months and then reduced to once a month for the remainder of the period. Headaches have continued to reduce to 80% in frequency, duration and intensity. Range of jaw motion and translation is much improved (as visualized) with commensurate nasal breathing that has consistently been improving, which in turn has helped reduce the patient's UARS and inability to sleep through the night. The CMRT treatment for the gall bladder viscerosomatic reflex pattern further helped reduce the patient's headaches. While the patient is still under care, the prior chronic and severe headaches have continued to resolve.

### **DISCUSSION**

This patient had chronic long-term breathing difficulties secondary to a deviated septum and its effect on airway and TMJ function along with unremitting severe headaches. A study by Zicari et al, "showed a strong correlation between oral breathing and malocclusions, which manifests itself with both dentoskeletal and functional alterations,

leading to a dysfunctional malocclusive pattern.”(37) Ability to breathe fully through the nasal passages and stomatognathic function particularly relates to the tongue, allowing the airway to improve and reducing UARS. Generally with mouth breathing, the tongue will lie at the bottom of the mouth leading to a Class II retro-mandibular position drawing the tongue backwards into the airway space. (37) Since the tongue has attachments to the mandible, its retro-positioning draws the tongue into the oropharyngeal space, compromising optimal airway function.

The complex nature of the patient’s presentation led to a comprehensive group of therapeutic interventions that consisted of nasal balloon technique, CFR, SOT chiropractic and cranial procedures, dental TMJ care, acupuncture interventions for TMJ discomfort, cold laser therapy, and chiropractic manipulative reflex techniques. With complex case presentations that incorporate various treatment modalities it is difficult to determine which modality was the most effective, or if the whole treatment protocol was needed to have an optimal outcome for the patient. An important aspect of how the care was determined was a balance between patient presentation, differential diagnosis, and patient preference for a conservative method of care.

## CONCLUSION

A 48-year-old male was treated for chronic nasal airway compromise secondary to a deviated septum and what appeared to be related TMD and chronic headaches. Two chiropractors and a dentist with dual training in dentistry and acupuncture treated this patient with a positive outcome consisting of improved breathing, reducing TMD and headaches. As with any case study it is difficult to generalize findings to patient populations at large. However, considering the all too common and long-time unresponsive and unremitting breathing problems, TMD, and headaches, the observed response to care is compelling. Further studies with similar patient presentations are warranted to determine if this type of conservative collaborative care can represent a low-risk treatment option.

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