

# TMD - Chiropractic and Dentistry:

## Two case reports

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**Introduction:** In conditions where a chiropractor or dentist has reached a therapeutic impasse with a patient's temporomandibular/cranio-mandibular disorders (TMD/CMD), co-treatment may be indicated.

**Intervention:** The treatment with these two patients had similar aspects in that they both presented with sacroiliac joint hypermobility syndrome (category two), cervical intersegmental restricted motion, and needed craniomandibular balancing therapeutic interventions.

**Results:** The essential findings in both cases showed reduced pain in TMJ function and/or symmetrical joint translation without crepitus. General relaxation in cervicocranial and craniomandibular musculature was noted by the patient, chiropractor and dentist. The focus was having the patient gain independence from chiropractic/dental care with reduced discomfort and increased function.

**Discussion:** Within a subset of patients body posture has been found to affect or be affected by dental occlusion, condylar position, and airway space. A main obstacle for chiropractic/dental co-treatment is the lack of awareness and knowledge of each other's professional treatment and diagnostic focus as well terminology. A relationship has been found between ascending/descending and CMD/TMD and postural dysfunctions.

**Conclusion:** While these two cases illustrate how the chiropractic and dental fields can work together for successful treatment outcomes, there is a need to determine what subsets of patients may fit this model.

**Indexing Terms:** Chiropractic; Subluxation; Dentistry; TMD; Co-treatment.

### Introduction

**S**ymptoms of temporomandibular/cranio-mandibular disorders (TMD/SCMDs) vary but often involve pain in the jaw musculature, pain or difficulty when opening the mouth and chewing, headaches, and ear pain.

Based upon assessments of pain in or around the jaw joint, these disorders are estimated to affect 10 million Americans. (1, 2, 3) A few epidemiologic studies indicate that the prevalence of self-reported pain symptoms and clinical signs of TMD pain is between 5-15%. (2, 4) Women in the third and fourth decades of life are much more likely than men to seek care for facial pain in the temporomandibular region. (2, 5)

A significant relationship between MRI diagnosed osteoarthritis (n = 307 140 males/167 females) and symptoms of TMD has been found. (6) A

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retrospective study by a single practitioner (n = 4,528) noted patients presenting symptomatically for TMD dental care also showed signs upon examination. (7) Imbalance in occlusion may have a TMJ disease-predictive potential. (8) In one study (n = 129) dental splints reduced pain in approximately two-thirds of the patients presenting with TMD (9) and another study found a psychological component. (10)

In conditions where Chiropractors or dentists have reached a therapeutic impasse with a patient's TMD/CMD, co-treatment may be indicated. This article presents two case reports demonstrating how co-treatment may proceed, initiated by a dental and/or a Chiropractic referral. (Figures 1 & 2)

## Case #1 Chiropractic to dental referral

### *The assessment*

A 41 year old female presented at my office referred by a chiropractor for her chronic TMJ dysfunction. The patient described that she has had a history of painful and limited chewing and the first time she started having TMJ symptoms, approximately 5 years prior, she was unable to close her jaw. She had been to a dentist and was wearing a dental night-guard but reported she was still 'grinding' her teeth for years. She also had concomitant neck and shoulder tension.

The patient presented with a sacroiliac hypermobility syndrome (category two), restricted intersegmental motion at C2/3, increased suboccipital muscle tension and restricted flexion at the C0/1 junction. Sphenobasilar range of motion (11) found imbalance in flexion/extension testing congruent with a chronic forward head posture (FHP). (12)

Outcome assessments were based on the patient's report of decreased pain and increased function. Palpation of muscle tension and point tenderness throughout each session demonstrated reduced tension, less use of pain medication and increased ability to function. Following two office visits she had a good response to treatment but her improvements were not lasting so a referral to a dentist for co-treatment was made.

The SOT TMJ and cranial diagnostic strategies described in other published studies (13 - 19) are still considered relatively novel. They incorporate pressures to the TM joint and cranium while evaluating TMJ excursions, translation, crepitus, and related craniocervical function. Following treatment an *Aqualizer* was used to limit any dental occlusion and the patient was seen by the dentist (usually within 30 minutes or less). To date the diagnostic strategies have not been sufficiently subjected to extensive inter/intra-reliability or validity studies. The patient was diagnosed with a chronic TMD/CMD, FHP, sacroiliac joint dysfunction, and cervicocranial syndrome

### *Excerpt of Chiropractor to dental communication*

The patient was seen today, presenting with a FHP cranial pattern associated with a vertical strain (sphenoid in extension and occiput in flexion). She seemed to need more advancing on the right than on the left, but responded so well to the increase in vertical by the *Aqualizer* the focus initially could be increasing her vertical and watching her progress. She did present with a vertebral joint restriction at C2/3 articular facets which was lateral and posterior on the left side by cervical stairstep analysis.

### *Dentist's interpretation and focus*

Initially anatomical midline is aligned through the splint by increasing the vertical dimension of occlusion (VDO) allowing pressure in the joints to be released and contracted muscles to relax. Following chiropractic treatment the splint was equilibrated to the new occlusion by maintaining the proper anatomical midline. The dental occlusion was modified to limit any

interferences from prior occlusion (e.g., improperly equilibrated crowns) which had stabilised the patient into craniomandibular disharmony. Due to the patient's FHP, airway space was improved with mandibular advancing and increasing the VDO while encouraging maintenance of the dental midline.

## Case #2 dental to Chiropractic referral

### *The assessment*

A 43 year old male was referred for Chiropractic care by his dentist to facilitate any pelvic, cervical and cranial involvement secondary to a full mouth reconstruction. The dental work used a (maxillary) Invisoline for orthodontic modifications along with occlusal modifications using a (mandibular) dental splint maintaining functional changes to the patient's body.

The patient reported he felt healthy but wanted to make sure his body maintained healthy and symmetrical function. He had a motorcycle accident 15 years earlier which affected his hip and pelvic function however he performed yoga for years and felt able to function.

Evaluation found marked reduced internal hip rotation on the right side and significant category two findings. On opening his mouth he had a right-sided deviation and left-sided 'click'. A significant decrease in cervical ranges of motion was present.

Outcome assessments were based upon the patient's report of decreased pain and increased function. Palpation of muscle tension, range of motion testing, and point tenderness during treatment and at the beginning of each session demonstrated reduced tension and an increased ability to function.

The SOT TMJ and cranial diagnostic strategies (13 - 19) were used for analysis and treatment. The patient's diagnosis was a category two with right hip dysfunction, cervical myofascitis, and TMJ sprain on left side with some dysfunctional joint translation. Following treatment an *Aqualizer* was used to limit any dental occlusion and the patient was seen by the dentist (usually within 30 minutes or less).

### *Excerpt of Chiropractor to Dental communications*

The patient was seen for a follow-up visit today and we are working on ascending patterns with home exercises to assist his progress. He has increased left *masseter* tension as compared to his right side and now opens evenly until he goes beyond approximately 2 fingers. Beyond a certain opening point his jaw will deviate to the right.

### *Dentist's interpretation and focus*

With *Aqualizer* removed and the dental splint replaced the focus is to sustain the new achieved occlusion with the splint and eliminate any discrepancies or make additions to the teeth's surface. With this occlusal modification, when the patient takes the splint out (e.g., to eat) there will be a reduced tendency for prior occlusion patterns to return. Specific adjustments were made to the splint to minimise the right deviation upon opening and to balance condylar function.

### *Treatment/intervention*

The treatment involved SOT management of the patient's primary TMJ dysfunction while stabilising whole body dynamics and function. The treatment with these two patients had similar aspects. They both presented with a category two, (20 - 24) cervical intersegmental restricted motion, and needed craniomandibular balancing (25) therapy.

SI joint treatment was performed with the patient supine, reducing pelvic torsion (26) and stabilising the posterior SI joint. (24) Exercises were given to prevent asymmetry of hip joint function as well as hip extension exercises to stimulate ligament integrity. (27)

Cervical treatment involved myofascial balancing methods and cervical stairstep procedures to improve intersegmental cervical function. (28) SOT sutural cranial procedures worked with improving symmetrical motion of the craniomandibular muscles. (29) When indicated, the patient was guided with specific home exercises for the cervical spine which focused on self massage of muscle overlying cervical articular facets on the side of intersegmental reduced motion.

Craniomandibular treatment focused on improving TM joint translation, balance, and reduced joint crepitus along with reduced tension and pain to palpation. (29) Motion at cranial suture and related dural tension (11) was reduced which was noted by the patient's greater relaxation and improved TM function. (29) When indicated, home exercises were given to both patients to help improve TM joint translation and/or gaining awareness to relax jaw, tongue, and suboccipital muscle tension. (29)

## Results

The essential findings in both cases showed reduced pain in TMJ function and improved joint translation without crepitus. General relaxation of the cervicocranial and craniomandibular musculature was noted by the patient, Chiropractor and dentist.

No specific side effects or risk over the past 15 years of personal clinical experience with Chiropractic dental co-treatment have been encountered. Positive short-term outcomes to treatment involved reduced pain, reduced muscle tension, and greater function of the TMJ as well as improved pelvic and cervical joint function. The ability of the patient to eat with reduced discomfort and improved sleep helped support the direction of care

Positive long-term outcome involved the patient's ability to have sufficient TMJ function so that their balanced occlusion protected their teeth from bruxism and their TMJ discs were translating without joint deviation/deflection or crepitus. As the patients learned how to relax their stomatognathic system they were able to prevent flare-ups. The focus was having the patient gain independence from Chiropractic/dental care with reduced discomfort and increased function.

## Discussion

With a subset of patients, body distortions ascending from the feet, pelvis, spine, and neck to affect TMJ dynamics affecting dental occlusion' (30, 31) condylar position. (32, 33), and airway space. (34, 35) With another subset of patients patterns of body distortions descending from TMJ dynamics affect dental occlusion, condylar position, and airway space. It is postulated that most patients exhibit both ascending and descending characteristics and to make lasting improvement with TMD co-treatment will be necessary.

A main obstacle for Chiropractic/dental co-treatment is the lack of awareness and knowledge of each other's professional treatment and diagnostic focus as well terminology. A relationship has been found between CMD/TMD ascending and descending relationships and postural dysfunctions. In one study (n = 22) a correlation was found between foot motion, position of the innominates, and vertical facial dimensions. (36) Tecco et al found an anterior cruciate ligament (ACL) injury may have an affect on muscle activity of head, neck and trunk muscles. (37) Apparently the spine's position can affect occlusion (38, 39) and occlusion can affect the neck, spine and pelvis. (40, 41)

Evaluating 45 asymptomatic subjects Sakaguchi et al concluded that:

1. 'Body posture was more stable when subjects bit down in centric occlusion.
2. 'Changes in body posture affected occlusal force distribution.

3. 'Altering body posture by changing leg length shifted the occlusal force distribution to the same side that had a heel lift. (42)'

*'In a clinical setting, when dental occlusion is developed and finished, body posture should be taken into account'. (42) 'If a patient has a length discrepancy, hip rotation or any other problem altering body posture, occlusal contacts may differ as the patient stands up and starts walking'. (42)*

One mechanism for the observed changes may be a relationship between how TMJ occlusion, head position and body posture relates to the body's natural neurological visual/vestibular righting mechanism. (43, 44)

This study could be improved if outcome assessment forms were used pre and post-treatment as well as objective measurement tools to monitor body posture, occlusion, condylar position, and mandibular tracking.

It is possible that the patient might have had a change in TMJ function and spinal dynamics independent of treatment. However the temporal nature related to their improvement, positive changes during co-treatment care, and their prior history of unresolved symptoms make a relationship between dental/chiropractic care and their response plausible.

Currently there are no Dental/Chiropractic TMD 'Need for Co-treatment' outcome assessment forms evaluated for reliability or validity. The Steigerwald -Maher form (45) may offer the Chiropractic profession some referral guidance and the Blum – Globe form (46) may offer the dental profession some referral guidance.

### Conclusion

The purpose of this case report was to illustrate how the Chiropractic and dental professions might work together treating patients with ascending and descending patterns of posture distortion.

University research institutions with focus on CMD/TMD co-treatment might yield important information.

While these two cases illustrate how the Chiropractic and dental fields can work together for successful treatment outcomes, there is a need to determine what subsets of patients may fit this model.

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### *About the lead author*

Dr. Panahpour did his undergraduate studies at the University of California, Los Angeles, and obtained his degree of Doctor of Dental Surgery at the University of the Pacific, Dugoni School of Dentistry. After graduating with a degree in dental surgery, he obtained further education at the New York Academy of Medicine.

In addition to his TMD, biomimetic, and systemic dental practice, Dr. Panahpour often works in teams with medical doctors and institutions to provide treatments for chronically ill patients around the world. 70% of his patients are referred for this collaborative care. These patients fly to receive care from around the world seeking his innovative treatment for chronic conditions after they have seen doctors from many other disciplines who could find no other way to help them.

Figure 1: Chiropractor's detailed algorithm for dental co-treatment

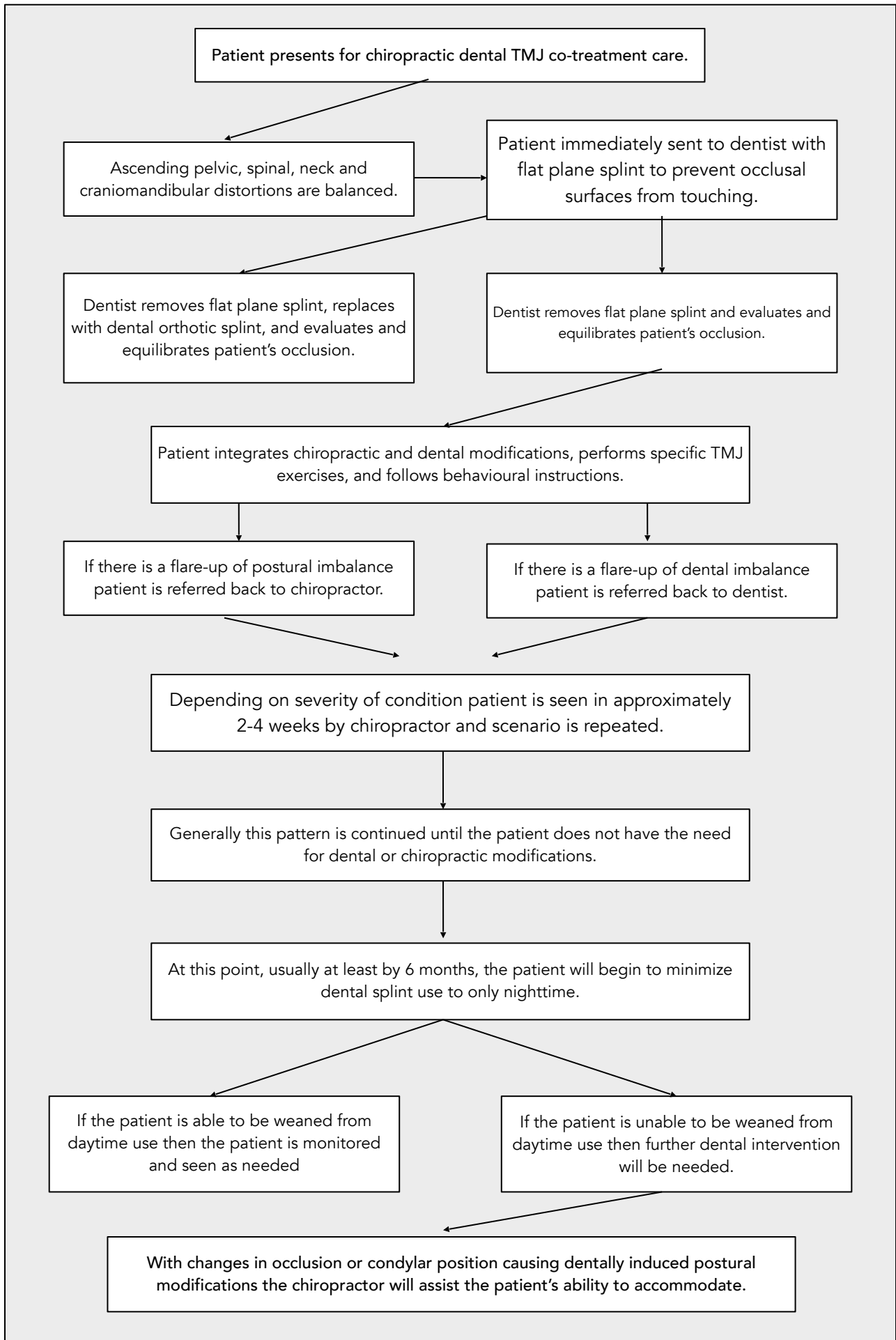




Figure 2: Chiropractic dental co-treatment algorithm overview

