

Summer 2011

Dear Colleague:

As always, we wish to thank you for your trust and the wonderful patients referred to our office.

This quarters newsletter covers the following topics...

1. Referred Pain from Muscle Trigger Points in the Masticatory and Neck-shoulder Musculature in Women with Temporomandibular Disorders
2. Long-term Oral Appliance Therapy in Obstructive Sleep Apnea Syndrome: A Controlled Study on Temporomandibular Side Effects
3. Signs and Symptoms of Temporomandibular Disorders and the Incidence of Tinnitus
4. Randomised Cross-over Study of Oral Appliances for Snoring



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Regards,

Dr. James Metz

upper trapezius and suboccipital muscles were examined for TrPs by an assessor blinded to the subjects' condition. TrPs were identified with manual palpation and categorized into active and latent according to proposed criteria. The referred pain areas were drawn on anatomical maps, digitalized, and measured.

The occurrence of active and latent TrPs were different between groups. In all muscles, there were significantly more active and latent TrP in patients than controls. Significant differences in referred pain areas between groups and muscles were found: the referred pain areas were larger in patients, and the referred pain area elicited by suboccipital TrPs was greater than the referred pain from other TrPs. Referred pain areas from neck TrPs were greater than the pain areas from masticatory muscle TrPs. Referred pain areas of masticatory TrPs were not different. The local and referred pain elicited from active TrPs in the masticatory and neck-shoulder muscles shared similar pain pattern as spontaneous TMD, which supports the concept of peripheral and central sensitization mechanisms in myofascial TMD.

The current study showed the existence of multiple active muscle TrPs in the masticatory and neck-shoulder muscles in women with myofascial TMD pain. The local and referred pain elicited from active TrPs reproduced pain complaints in these patients. Further, referred pain areas were larger in TMD pain patients than in healthy controls. The results are also in accordance with the notion of peripheral and central sensitization mechanisms in patients with myofascial TMD.

Referred Pain from Muscle Trigger Points in the Masticatory and Neck-shoulder Musculature in Women with Temporomandibular Disorders



Fernández-de-Las-Peñas C, et al.
J Pain 2011 Jan;11(12):1295-304

The purpose of this study was to describe the referred pain patterns and size of areas of trigger points (TrPs) in the masticatory and neck-shoulder muscles of women with myofascial temporomandibular disorders (TMD). Twenty-five women with myofascial TMD and 25 healthy matched women participated. Bilateral temporalis, deep masseter, superficial masseter, sternocleidomastoid,

Long-term Oral Appliance Therapy in Obstructive Sleep Apnea Syndrome: A Controlled Study on Temporomandibular Side Effects

Doff MH, Veldhuis SK, et al.
Clin Oral Investig. 2011 May 3

The objective of this study was to assess variations in the occurrence of temporomandibular disorders (TMDs) and the risk of developing pain and function impairment of the temporomandibular complex in obstructive sleep apnea syndrome (OSAS) patients treated with either an oral appliance (mandibular advancement device) or continuous positive airway pressure (CPAP) in a 2-year

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Sleep Apnea...continued

follow-up study. In addition, the authors assessed the relationship between the mean mandibular protrusion and the frequency of wearing the appliance during follow-up with the occurrence of pain and function impairment of the temporomandibular complex. Fifty-one patients were randomized to oral appliance therapy and 52 patients to CPAP therapy. TMDs (diagnosed according to the Axis I Research Diagnostic Criteria for TMD), pain intensity and disability and mandibular function impairment were recorded at baseline, after 2 months, 1 year and 2 years of therapy.

Only in the initial period of treatment the occurrence of pain-related TMDs was considerably higher (24%) in the oral appliance group compared to CPAP (6%). Oral appliance therapy furthermore resulted in more temporomandibular pain compared to CPAP. However, there were no limitations in mandibular function in both groups during the (entire) follow-up period. Although generally not serious and of transient nature, oral appliance therapy results in more pain-related TMDs in the initial period of use compared with CPAP therapy. Oral appliance therapy is associated with increased pain in the temporomandibular complex in the initial period of use. *Because of the transient nature, this pain is not a reason to contra-indicate an oral appliance in OSAS patients. Moreover, TMDs and the risk of developing pain and function impairment of the temporomandibular complex appear limited with long-term oral appliance use.*

Signs and Symptoms of Temporomandibular Disorders and the Incidence of Tinnitus

Bernhardt O, Mundt T, et al.
J. Oral Rehabil 2011 Apr 23

In a cross-sectional analysis of data from the Study of Health, temporomandibular disorders (TMD) were the strongest predictors for tinnitus beside headache. The purpose of this study was to investigate whether signs and symptoms of TMD can be identified as risk factors for developing tinnitus. The authors conducted a population-based 5-year longitudinal study intended to systematically describe the prevalence of and risk factors for tinnitus. A total of 3300 subjects (76% response) were reevaluated after 5 years for tinnitus and signs and symptoms of TMD using the same questionnaires and examination tools as baseline. To estimate the relative risk (RR), appropriate statistical analysis was used. After exclusion of prevalent cases with diagnosed tinnitus, 3134 subjects were analyzed.

Among the 191 exposed subjects with palpation pain in the temporomandibular joint (TMJ), 24 subjects (12.6%) were diagnosed with tinnitus after 5 years, whereas among the 2643 unexposed subjects 142 subjects (5.8%) reported tinnitus yielding a risk difference of 7.7% and a risk ratio of 2.6. The risk ratio was 2.4 after adjustment for gender, age, school education and frequent headache. Pain on palpation of the TMJ, however, did not worsen the prognosis for tinnitus in prevalent tinnitus cases. *The authors concluded that signs of TMD are a risk factor for the development of tinnitus.*

Randomised Cross-over Study of Oral Appliances for Snoring

Maguire J, Steele JG, et al.
Clin Otolaryngol. 2011 Jan;35(3):204-9

The purpose of this study was to compare a mandibular advancement splint to a control bite raising appliance in the treatment of snoring with or without mild obstructive sleep apnea syndrome. This was a prospective two-treatment randomized cross-over clinical trial conducted at a teaching hospital. Fifty-two subjects (36 men, 16 women) diagnosed with non-apneic snoring or mild obstructive sleep apnea syndrome (apnea/hypopnea index \leq 15 events/h), were recruited from Departments of Respiratory Medicine and ENT surgery departments. The Snoring Symptoms Inventory questionnaire (SSI) and the Epworth Sleepiness Score (ESS) were used to evaluate changes in symptoms. Patient reported outcomes (compliance, adverse events, splint preference) were recorded by questionnaire. Subjects attended for five study visits and used a mandibular advancement splint and a bite raising appliance at home each for 4 weeks, with a 3-week washout period between devices.

Thirty-eight subjects completed the study. Both the mandibular advancement splint and bite raising appliance significantly reduced the SSI compared to the baseline scores: mandibular advancement splint 5.5, bite raising appliance 3.1. No statistically significant difference between the two treatment periods was detected. The reduction in the Epworth Sleepiness Score was: mandibular advancement splint 1.0, and the bite raising appliance 0.3. The change in the Epworth Sleepiness Score was not statistically significantly different between the mandibular advancement splint and bite raising appliance treatment periods. *The authors concluded in this group of patients diagnosed with snoring +/- mild OSA: (1) both the mandibular advancement splint and bite raising appliance designs of splint appeared to reduce the symptoms of snoring; (2) no difference in the magnitude of this effect was detected in favor of one design of splint.*