

Sleep Apnea Syndrome – A Perspective

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Abstract

Respiratory disorders including obstructive sleep apnea have a relationship to the activity of the musculature of the upper airways and orofacial areas. Although there are several treatment alternatives, there is not a consensus about a first choice treatment option. In this article we consider the importance of the muscle function and muscular therapy as a treatment for obstructive sleep apnea.

Keywords: *Sleep Apnea; Musculature; Upper Airway*

Respiratory disorders include obstructive sleep apnea, which is related to the activity of the upper airway muscles during sleep, as they collapse partially or totally blocking the airflow.

The different muscles in the craniofacial complex act in important orofacial functions such as respiration, mastication, deglutition and phonation, having the tongue an important role in all these functions. Problems in any of these muscles may cause imbalance in the other different musculatures and their activities, resulting in the affection of the proper orofacial functions. Also, especially at young ages, any affection in the craniofacial musculature and orofacial functions may alter the normal growth and development of the craniofacial complex, not only of the bone structures but also the different organs within this region, causing abnormalities in the morphology and physiology in the craniofacial complex organs [1-5]. The imbalance in the muscular structures summoned with their inadequate function may lead to several damage to the system, and appearance of different parafunctions [6]. Changes in the breathing pattern due to nasal obstruction may lead to mouth breathing. In patients that present obstructive sleep apnea, in which the muscles of the upper airways are involved, the orofacial functions are also compromised, which reflects that the activity of these muscles is not only affected while asleep, but also on an awoken state [1]. These patients with obstructive sleep apnea present alteration in the dilator muscles of the pharynx, including the tensor palatine and the genioglossus, and also their tongue volume and tongue position is affected [1]. Usually, patients with respiratory disturbances present also affection in the masticatory muscles, decreasing their force, and affecting directly in the mastication. As both the orofacial functions and orofacial muscles are affected on the patients that present obstructive sleep apnea, the evaluation of them is important. The myofunctional therapy (MFT), also known as neuro-muscular re-education of the oral facial muscles, is a modality that promotes the stability of the stomatognathic system. Studies have been done for centuries to understand the relationship of form and function, however, until now there are still some controversy and lack of information, especially when analyzing the function of the tongue musculature. The main objectives are the treatment of orofacial disorders, such as orofacial abnormalities, mouth-breathing pattern, lip incompetence, tongue thrust habit, mandibular deviation and improper joint patterns during speech; chewing and swallowing, as well as assistance in the correction of parafunctional oral habits, such as thumb-sucking and bruxism. In some cases, this therapy may also assist in improving body posture, thereby contributing to overall health. Nowadays, the MFT is an alternative in order to re-educate the craniofacial and cervical muscles, and is used as an alternative treatment in patients with obstructive sleep apnea. This therapy enhances the adequate movements of the orofacial muscles, improving their function. In this myofunctional therapy, the tongue is

a main target, as this organ participates in all the main orofacial functions, being a very complex organ, and its wide degree of movements and performance are not yet clearly known. Although this therapy has been reported very effective to improve the orofacial functions, the actual mechanism of the effects of this therapy are not deeply understood. It has also been reported that patients with obstructive sleep apnea due to tongue collapse that receive MFT improve their tongue activity not only in awoken states, but also during sleep. As orofacial functions require a high level of coordination of the different muscles that participate, in which the tongue play important roles, a deeper understanding of the activity of these orofacial muscles, especially the tongue and other muscles that maintain the upper airway diameter during respiration, is important when evaluating patients with respiratory disorders. Further studies regarding treatment options for OSA regarding muscle therapy should be taken into consideration [7-13].

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