

Role of oral and maxillofacial surgeons in the treatment of obstructive sleep apnea patients

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Nowadays, clinicians and researchers are growing more and more interested in obstructive sleep apnea (OSA). OSA is defined by the presence of obstructive sleep event (such as apnea and hypopnea), i.e., more than 5 events per hour during sleep in association with clinical symptoms. Sleep fragmentation and oxygen desaturation are induced by the repetitive obstruction of the upper airway during sleep, and specific clinical symptoms including snoring are detected. OSA has adverse effects on normal life including daytime headache, daytime sleepiness, and decrease of cognitive function and quality of sleep. Furthermore, there is high risk of developing cardiovascular and neurovascular disease if OSA remains untreated¹⁻³.

There are several treatment options for OSA patients including behavioral therapy (such as sleep position change and weight control), conservative therapy for securing and maintaining airway space (such as continuous positive airway pressure), and surgical therapy (such as palatopharyngoplasty)⁴. Continuous positive airway pressure (CPAP) has been generally considered the “gold standard” treatment for OSA⁵. Despite its excellent treatment outcome, CPAP is not always tolerated well by patients. In many cases, CPAP is used less frequently than medically required⁶. As an alternative, oral appliances can be applied to prevent upper airway collapse during sleep^{7,8}. A major type of oral appliance, mandibular advancement device (MAD), is accepted by clinicians as one of the simple, safe, and cost-effective options. Likewise, oral and maxillofacial surgeons are familiar with some surgical options particularly genial advancement and maxilla-mandibular advancement because they are modifications of advancement genioplasty and orthognathic surgery, respectively⁹. The rationale of dental approaches is to secure upper airway space physically. Temporary or permanent soft tissue change is acquired by skeletal change^{10,11}.

Though the dental approach to OSA yielded satisfactory

clinical outcomes, there are few studies done by dentists. Since there are many things to be considered in applying dental approaches, oral and maxillofacial surgeons should play an important role in OSA treatment.

For example, some patients using MAD suffer from complications related to temporomandibular joint (TMJ) or occlusion.

Furthermore, there has yet to be a definite guideline for MAD application. In the past, it was recommended that the application of MAD be limited to patients with mild and moderate OSA^{7,12}. According to Lee et al.¹³, however, MAD is also effective for patients with severe OSA. The findings of their study serve as evidence that the severity of OSA may not be an independent prognostic factor of MAD treatment. It will be very helpful to have an exact guideline for MAD application for OSA patients, although establishing the indication is difficult because there are individual differences not only in anatomical structures but also in the functional ability of physiological adaptation in TMJ and dentition.

Thinking reversely, from the viewpoint of airway obstruction, there may be higher risk of OSA among patients who underwent mandibular setback surgery to correct mandibular prognathism. Long-term follow-up is necessary for orthognathic patients to evaluate airway change and prevalence of snoring or OSA.

The development of OSA treatment requires the active involvement of oral and maxillofacial surgeons in the field of sleep medicine including OSA. We hope many studies will be conducted with regard to the complications of dental approaches for OSA patients as well as clinical outcome.

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