Treatment of Obstructive Sleep Apnea with Oral Appliances and Its Long Term Side- Effects

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Sleep disordered breathing is a spectrum of airway collapsibility that consists of snoring and obstructive sleep apnea and affects tens of millions of people worldwide. Obstructive sleep apnea (OSA) alone may afflict an estimated 17% of Americans and is expected to approach 20% in the next few years due to the obesity epidemic. Over the past decade, adequately trained dental professionals have emerged as key players in the multi-disciplinary team treating this serious illness. By working closely with medical colleagues, dentists have been able to create and maintain patent upper airways in many patients to allow for normal breathing during sleep.

Snoring is the first and early sign of sleep-disordered breathing, that partially obstructs breathing during sleep and affects as many as 30 million (nearly 1 out of every 8 individuals). While snoring can be harmless, it can also be the sign of a more serious medical condition known as obstructive sleep apnea (OSA). OSA occurs when the tongue and soft tissue fall back into the throat during sleep, completely blocking the airway. Obstructive sleep apnea is a common sleep disorder, second to insomnia which is the most commonly occurring sleep disorder, affecting an estimated 18 million people. OSA has been associated with increased risk of heart attack, stroke, heart failure, automobile accidents, depression, as well as excessive daytime sleepiness.

Sleep Apnea is diagnosed by a medical sleep specialist, through an overnight sleep study known as a polysomnogram (NPSG). Once diagnosed, snoring and obstructive sleep apnea can be treated with a medical device that delivers CPAP (continuous positive airway pressure) therapy. This therapy pneumatically splints the airway open. Surgical interventions are also possible but their outcomes are irreversible and can be problematic.

Oral appliances or by a combination of any or all of these approaches can also be extremely effective. New guidelines and practice parameters have been published by the American Academy of Sleep Medicine (AASM) in January 2006 issue of SLEEP defining the use of oral appliances to treat snoring and obstructive sleep

apnea. Oral appliances are recommended for patients with mild to moderate OSA who either prefer it to CPAP or who are unsuccessful using CPAP therapy.

An oral appliance is similar in appearance to an orthodontic retainer or a sports mouth guard. When worn during sleep, it maintains an opened and unobstructed airway in the throat by repositioning or stabilizing the lower jaw, tongue, soft palate and uvula. In addition, an oral appliance increases the muscle tone of the tongue. There are many types of oral appliances, with some designed to only treat snoring and others for both snoring and obstructive sleep apnea.

The literature review completed by the Standards of Practice Committee of the AASM revealed that there are minor and major side effects associated with the oral appliance therapy. Some patients discontinue treatment if muscle or joint discomfort is significant. A majority of patients have no symptoms and the use of these appliances is well within their adaptive capability. Tooth, muscle or jaw joint discomfort may be occasional and not sufficient to cause discontinuation of use. There can be long-term occlusal (bite) changes, but with routine morning jaw exercises, good patient education and monitoring, the risk of bite change has been significantly reduced or virtually eliminated. It is a consensus of opinion of the Academy of Dental Sleep Medicine (ADSM) that TMD (temporo-mandibular joint dysfunction) is not at all a contraindication for treatment of snoring, mild to moderate OSA, and in severe OSA cases that cannot tolerate CPAP therapy. There is a high compliance rate with oral appliance therapy. Research shows that a commonly used oral appliance known as the TAP, has a 92% compliance rate of use at a 2 year study. In addition, further research shows that CPAP therapy at 2 years is at a 40% compliance rate. When therapy is followed by a dentist who is trained in oral appliance therapy, any side effects noted in the literature can be avoided and are typically temporary and minor.

Presently, treatment of snoring and OSA must be a multi-disciplinary team effort. Diagnosis falls within the realm of medicine, while the management of mandibular repositioning with oral appliances is in dentistry's purview. If each practitioner performs within the scope of licensure and standard of care, patients will be more likely to receive effective treatment.

Medical insurance reimbursement is no longer a barrier for patient treatment. Proper medical management of the patient in the dental practice has made oral appliance therapy equal to or more cost effective than the use of CPAP, long considered the "gold standard" of care for obstructive sleep apnea.

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