The role of the dental team in the management of the patient with sleep apnea

By Nancy M. Costa-Larson, USA

The evolution of the dental hygienist’s role in the assessment of a client’s oral health from a singular approach to a collaborative multidisciplinary approach is evident in the treatment of clients with sleep disorders. Knowledge of the variances in sleep disorders, medications, treatment needed, as well as the various appliances will be vital to the oral health-care providers. Pagel (2012) says that by 2015, 40 percent of the U.S. population will have some form of sleep disorder; 18 million Americans have sleep apnea, which affects all ages, both sexes and may be genetic. The most prevalent form occurs in 4 percent of middle-aged men and 2 percent of middle-aged women.1

As with all medical conditions, early detection and baseline data will aid in monitoring changes in the patient’s health and providing useful information in treatment planning and instruction. Sleep apnea in the past has been viewed as most typically related to snoring; however, there are different types of sleep apnea disorder. The most prevalent and known is obstructive sleep apnea syndrome. Another type, central sleep apnea, is less common. A third type, complex sleep apnea, combines both the obstructive and central types.

What is obstructive sleep apnea syndrome? Obstructive sleep apnea syndrome (OSAS) is a common, but often unnoticed complication that is potentially fatal.2 According to de Almeida et al. (2006), “It happens most frequently during REM sleep, and breathing stops for 10 to 50 seconds, which results in reduced levels of oxygen dissolved in the blood.”3 The patient with the OSAS does not always have a complete blockage of the throat to open the airway. A person’s quality and quantity of sleep is often inadequate. These individuals report fatigue, sleepiness, anxiety, depression, difficulty concentrating, and diaphoresis. But an individual’s symptoms associated with OSAS are not limited to sleeping problems. During waking hours the patient may experience depression, difficulty concentrating, fatigue and insomnia. Other signs can include gastrointestinal reflux disease (GERD), irritability and sleepiness throughout the day. Coughlin says, “If OSAS continues to be untreated or it is never diagnosed, the sleeping disorder may elevate blood pressure and the potential for mortality increases.”4

What to look for Magliola says, “The population with OSAS is a heterogeneous group, and have a wide range of physical attributes. Not all patients with OSAS have all of these physical features.”5 The most common orofacial charac- teristics encountered include a retrusive mandible, narrow palate, large neck circumference, long soft palate (which leads to dentists being unable to visualize the entire length of the uvula when the patient’s mouth is open wide), tonsillar hypertrophy, deviated nasal septum and relative macrognlossia.

Potential outcomes of non-treatment Patients with OSAS have interrupted sleep patterns because the obstruction of airflow causes prolonged interruptions in their breathing while they sleep (up to 40 seconds). Because the condition can lead to a reduction of oxygen in the blood stream, a host of medical complications can occur. Individuals with obstructive sleep apnea can experience worsening snoring, which is caused by vibration of the partially collapsed soft palate as air passes. Respiratory events, which deplete certain stages of non-REM and REM sleep, contribute to sleep fragmentation and unrefreshing sleep.6 Because of the lack of sleep, an OSAS sufferer may have difficulty concentrating and staying awake during the day. When sufferers sleep on their back, gravity pulls the jaw and tongue down and back. This causes the mouth to open and the tongue to drop back into the airway, nar- rowing the air passage.

Treatable The two main categories of oral appliances currently in use are the mandibular advancement devices (MAD) and the tongue retaining devices (TRD). The mandibular advancement devices, made of acrylic materials, are custom fabricated for each patient. The impression for the appliance is taken when the individual is sleeping in a supine position. (Photo/Provided by Medical/The Respire Blue Series)

Non-surgical treatments are available, including positional therapy. The two main categories of oral appliances currently in use are the mandibular advancement devices (MAD) and the tongue retaining devices (TRD). The mandibular advancement devices, made of acrylic materials, are custom fabricated for each patient. The impression for the appliance is taken when the individual is sleeping in a supine position. (Photo/Provided by Medical/The Respire Blue Series)
The adjustment mechanism built into the device, enabling users to gradually change the bite, is one of the key points of this treatment. However, the adjustment mechanism can make it possible to position the device to address a patient’s particular needs.

The use of continuous positive airway pressure (CPAP) is another non-surgical treatment option for obstructive sleep apnea. CPAP machines apply external pressure to the upper airway to keep it open. The CPAP machine allows the user to control the degree of airway opening and achieve the optimal position for the best possible pressure maintenance. The CPAP machine can be adjusted to achieve the optimal nasal pressure for the individual.

Obstructive sleep apnea syndrome (OSAS) is a disorder that can be treated using CPAP. CPAP devices can help keep the airway open, allowing the patient to breathe more easily and reduce the incidence of apneas and hypopneas. CPAP devices are easy to use and can be adjusted to meet the individual needs of each patient. The CPAP machine is relatively user-friendly, and patients can easily learn how to use it.

CPAP devices can help keep patients with OSAS from snoring, which can help them get a better night’s sleep. CPAP devices are also effective in reducing the severity of obstructive sleep apnea, allowing patients to breathe more easily and maintain a consistent airflow throughout the night.

In conclusion, CPAP devices are an effective treatment option for patients with OSAS. Patients with OSAS should be referred to a physician who specializes in sleep disorders for further evaluation and treatment. CPAP devices are a non-invasive, non-surgical treatment option that can be adjusted to meet the individual needs of each patient. Patients with OSAS should be referred to a physician who specializes in sleep disorders for further evaluation and treatment.

Despite the success of CPAP therapy, patients with severe obstructive sleep apnea may require additional treatment options. Some patients may require surgical treatment for severe cases, such as maxillary or mandibular advancement surgery. These surgical treatments can help patients with severe obstructive sleep apnea achieve better sleep and improve their overall quality of life.

In summary, CPAP therapy and surgical treatments are effective options for patients with severe obstructive sleep apnea. Patients with severe obstructive sleep apnea should be referred to a physician who specializes in sleep disorders for further evaluation and treatment. CPAP therapy and surgical treatments can help patients achieve better sleep and improve their overall quality of life.
Matching Gutta-percha cones with TF/TFa Adaptive Instruments

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Introduction
With the widespread use of the rotary Niti instruments, matched taper gutta-percha (GP) cones (of greater tapers) were developed to make root canal obturation techniques easier, more predictable and improve quality. Nowadays many manufacturers commercialise matched-taper GP cones of greater tapers to be used with a specific instrumentation technique. As a consequence, not only the single cone technique regained popularity due to the fact that single matched cone could now provide a satisfactory three-dimensional fill; also warm vertical techniques became much easier. This is why GP cones of greater tapers are much wider (Fig. 3). There-