



Dentists Play an Important Role in Identifying and Treating OSA

Written by Lynne Lederman

Obstructive sleep apnea (OSA) is a serious health problem that occurs when the soft tissue in the back of the throat relaxes and blocks the airway. OSA is associated with loud snoring, interruptions in breathing, daytime sleepiness, hypertension, cardiac problems, stroke, decreased length of life, and increased rates of motor vehicle accidents (MVs). OSA is underdiagnosed and often affects the sleep partner. Factors that predispose people to OSA include older age, obesity, and anatomic features, such as a long soft palate or large tongue.

Jonathan A. Parker, DDS, Snoring and Sleep Apnea Dental Treatment Center, Edina, Minnesota, USA, discussed the importance of a thorough history and examination, accurate bite registration, and management of the patient's bite to achieve successful treatment of OSA. He pointed out that dentists have a responsibility to identify patients with OSA and are in a good position to help them along a path to improving their health.

Dr Parker performs a comprehensive history and examination for all patients he sees, and he will coordinate care with the patient's primary physician or sleep medicine physician prior to starting treatment. A flowchart for patients who have had a sleep medicine evaluation and require a mandibular advancement device (MAD) to manage their apnea is shown in Figure 1. He noted that many of the patients he sees have already tried using continuous positive airway pressure for their OSA and could not tolerate it.

Questions to screen patients for snoring and OSA should be a part of a patient's regular dental hygiene visit. Patients should be asked about whether they have snoring and/or sleepiness; how these questions are asked is important. If asked directly, patients tend to deny snoring, so a better approach is to ask questions such as "Have you been told or are you aware that you have a tendency for snoring?", "Do you wake feeling rested in the morning, or would you like a few more hours of sleep?", and "Do you feel sleepy during the day?"

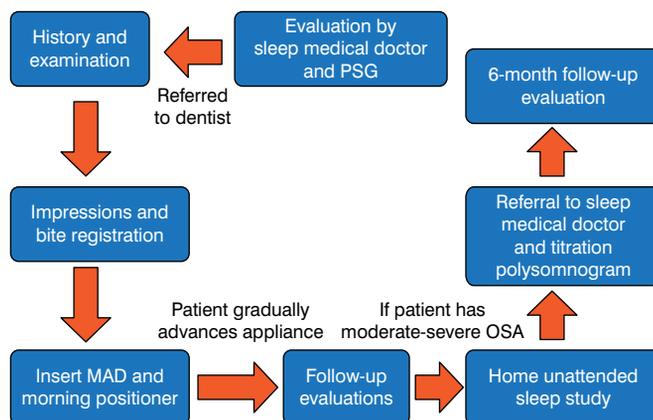
A complete evaluation and consultation include performing a history and examination, imaging of the upper airway, reviewing copies of their sleep testing, and obtaining informed consent. Blood pressure should be measured at this visit as well.

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Figure 1. Protocol for Mandibular Advancement Device for Patient With Obstructive Sleep Apnea



MAD, mandibular advancement device; OSA, obstructive sleep apnea; PSG, polysomnograph.
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The Epworth Sleepiness Scale is a self-reported questionnaire to assess sleepiness; however, it is not a definitive test because it is based on patient perception, so it is important to obtain the input of the patient's sleep partner as well. Because patients may deny snoring and daytime sleepiness even when told they snore by others, they should be asked if their partner sleeps in another room; about their quality of sleep; if they fall asleep in meetings, or while reading or watching television; and if they have experienced cognitive impairment or MVAs or near misses because they fell asleep at the wheel.

A complete medical history, not just sleep history, should be taken to rule out other medical causes for their symptoms. Once this has been performed, if the patient has not had a sleep medicine assessment, then patients should be referred for a sleep evaluation and a possible polysomnogram if these have not been completed.

During the dental evaluation, good baseline information is required because these parameters can change during the course of treatment. The dentist's examination should include the dental/occlusal relationship, including measurement of the overbite and overjet, angle classification, the position of dental midlines, wear facets, and occlusal contacts on each tooth. Periodontal condition, including interproximal contacts, gingival recession and pocketing, and tooth mobility, should be evaluated as well. The examination should also evaluate the following:

- Intraoral soft and hard tissue pathology, including tissue lesions, mandibular and maxillary tori, and oral cancer screening
- Evaluation of the jaw range of motion, including lateral and protrusive movement and deviations in opening or protrusion
- Evaluation of the temporomandibular joints and muscles of mastication

Dr Parker usually takes panoramic radiographs because they may reveal unexpected findings; however, full-mouth x-rays are adequate. Other recommended tests include a cephalometric radiograph to visualize the airway and an evaluation of oropharyngeal tissues, including the size of the tongue and uvula and length of the soft palate.

To establish a frame of reference, dentists should clinically evaluate the uvula and soft palate, supratonsillar fossa, dorsum of tongue, palatopharyngeal arch, palatine tonsil, and palatoglossal arch in all patients. The dentist should describe the findings in the patient's record. For example, the tongue can be small, medium, or large; the soft palate can be short, moderate, long, or very long, or there can be a broad pharyngeal curtain; and the uvula

can be absent, short, moderate, long, very long, or thick. The dental arch length and width are important because they define the room for the tongue, which is forced back into the throat if the arch is narrow or short.

Before pursuing treatment, the dentist should consult with the patient to describe the OSA problem, the diagnosis, the health risks associated with OSA, and the consequences of no treatment. The dentist should explain the treatment options for managing the snoring and OSA, including the risks and possible benefits, potential side effects, and the probability of successful treatment. After this discussion, the patient should sign an informed consent form for oral appliance therapy in the presence of the dentist confirming the patient's understanding of this information.

Most appliances require taking impressions and a bite registration. Bite registration devices include the George Gauge and ProGauge. Dr Parker demonstrated the use of the George Gauge and ProGauge, suggesting a starting mandibular treatment position of 60% of the maximum protrusion, although it could be adjusted to 70% in patients who are obese or have severe OSA who can tolerate this position. The treatment position is based partly on clinical experience. It is critical to advance the mandible symmetrically in the gauge; otherwise, the patient may experience jaw pain or other side effects.

Postinsertion patient instructions are crucial to helping the patient to adapt well to the appliance and to minimize potential side effects. Dr Parker discussed techniques for management of the patient's bite. This occlusal management program instructs patients to wait 10 to 15 minutes after removing the MAD appliance in the morning, then clench their teeth into a morning positioner (eg, an AM Aligner or Leaf gauge), hold for 2 to 3 seconds, release, and repeat 4 to 5 times per minute for 20 minutes; this can be done in the shower or while getting dressed. Patients should understand that there is an 80% chance their bite will change if they do not follow this process versus a 20% to 40% chance if they do follow this protocol.

A comprehensive history and thorough examination by dentists, including accurate baseline measurements, are crucial for the successful treatment of OSA. By identifying and treating OSA, dentists are in a position to improve the sleep and health of their patients and their patients' sleep partners.

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