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Abstract

Millions of people worldwide suffer diminished quality of life due to the effects of sleep-disordered breathing (snoring and obstructive sleep apnea). The worst cases can be life-threatening. Recently, the medical and dental professions have partnered to provide essential relief for many of those afflicted with this widespread malady. As medical sleep specialists reach out to include dentists on the "sleep team," it is incumbent on the dental professional to have sufficient education and training. Presently, there are a multitude of opportunities and venues available to the dentist who may have an interest in this burgeoning new field. However, caution is required during the learning experience because different sources of educational material may not be congruent with legal or professional ethics.

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Dental sleep medicine: Coming of age

During the past decade, a number of critical issues have evolved and coalesced to create a new medical/dental sub-specialty that has captured the attention of physicians, dentists, patients, and commercial interests. Today, managing sleep-disordered breathing (SDB) with oral appliances is supported by peer-reviewed research and accepted by many physicians and dentists as integral to the treatment mix.^{1,2} Concurrently, educational opportunities are available for physicians and dentists through many venues, including an independent academic academy. In addition, numerous commercial manufacturers are joining the fray by providing a multitude of appliance types while insurance carriers have begun to provide coverage for this therapy with increasing frequency.

SDB is characterized by repeated episodes of upper airway narrowing and obstruction during sleep, resulting in upper airway resistance, snoring, apnea, intermittent hypoxemia, and sleep disruption.³ There are numerous etiologic factors involved in this malady, both of a functional and an anatomic nature. The primary functional factor is the physiologic decrease in tone of the upper airway muscles during sleep that causes the walls of the pharynx to collapse. Anatomic factors are numerous and varied but ultimately associated with a reduction in the diameter of the naso, oro, and/or hypopharyngeal sections of the upper airway. These may include nasal obstructive lesions, tonsillar and uvular hypertrophy, macroglossia, retrognathia, and a caudal positioning of the hyoid bone.⁴

Therapies to manage SDB ultimately are aimed at altering or eliminating factors predisposing to upper airway collapse in an effort to allow for quiet, regular breath-

ing; normal oxygenation; and restful, refreshing sleep. Treatment modalities include weight reduction, positional therapy, reduction of alcohol consumption, positive airway pressure, surgery, and oral appliances. At present, no single method is universally effective and tolerated; therefore, medical sleep specialists have turned to an interdisciplinary approach and called upon specially trained dentists to play an important role in the screening and treatment of SDB. The past 10 years have seen a proliferation of "sleep disorders dentists," while the term "dental sleep medicine" has come to describe the unique arena that partners physicians and dentists in the battle against snoring, upper airway resistance syndrome, and obstructive sleep apnea (OSA).

It is incumbent on the aspiring sleep disorders dentist to appreciate the medical implications of SDB and attain the proper education in sleep medicine and oral appliance therapy. It has been increasingly recognized that the sequelae of OSA cause disability from pathologic sleepiness and cardiorespiratory complications.⁵ In addition, therapy with oral appliances, especially mandibular repositioning devices, has been associated with side effects—most notably, an altered occlusion—that concern the astute practitioner.^{6,7} The sleep disorders dentist must coordinate and blend education, experience, and ethics into new protocols and procedures for maximum benefit to patients and the profession.

This is easier said than done. The educational venues available to dentists interested in this new field are numerous and seem to offer varied slants on the subject—some appropriate, some suspect. Commercial entities selling oral appliances in the dental marketplace

are the most visible source of information through workshops and frequent advertising in professional journals. Many times it is here that the novice first enters the realm of dental sleep medicine.

Practically speaking, this represents an excellent entry point since it is quick, easy, and often provides accurate, ethical information. However, this is not always the case. In some instances, the commercial concern will present material that deviates from accepted medical protocol because it tends to enhance sales. This can lead to improper therapy for patients and legal complications for the dentist.

Practitioners must tread cautiously among the educational venues and seek out a variety of sources so that an accurate view of the "big picture" can be attained. The American Academy of Sleep Medicine (formerly the American Sleep Disorders Association) (507/287-6006, www.aasmnet.org) offers a vast array of objective information compiled by sleep physicians and has produced a position paper that can serve as the scientific basis for therapy with oral appliances.² In addition, the Academy of Dental Sleep Medicine (724/935-0836, www.dentalsleepmed.org) provides the serious practitioner with objective material that is based on current research and is congruent with the accepted medical model.

Presently, properly trained dentists are in high demand by both physicians and patients and play an important role in the treatment of SDB. Consequently, the sleep disorders dentist is expected to have an appropriate background in sleep medicine and oral appliance therapy.

While an overall appreciation of sleep medicine as a discipline is required, the specific area of SDB demands more in-depth knowledge. The dentist should be very familiar with the continuum of snoring,

upper airway resistance syndrome, and the various degrees of OSA. How each is diagnosed is particularly important and the dentist should have a firm grasp on the meaning of polysomnographic data, including apnea/hypopnea indices, sleep architecture, and oxygen saturation. Other diagnostic tools such as the Multiple Sleep Latency Test, the Maintenance of Wakefulness Test, and the Epworth Sleepiness Scale should be familiar to the dentist. Most importantly, the sleep disorders dentist must appreciate the medical protocol which dictates that all patients must be evaluated and formally diagnosed by a medical sleep specialist prior to any definitive intervention by a dental professional.

In addition to sleep medicine, a thorough knowledge of oral appliance therapy is necessary. An understanding of upper airway anatomy and physiology, appliance design and variation, clinical procedures, troubleshooting, and follow-up are but a few of the topics the dentist needs to master in his or her endeavor to provide quality care in this growing field.

Following recognition and appreciation of the medical and dental requirements inherent in the practice of dental sleep medicine, one other critical element remains—the legal perspective. From this standpoint, two main concerns arise: compliance with local licensing requirements and issues of professional liability. Because of the nature of oral appliance therapy, certain aspects of treatment fall within the scope of practice of physicians and certain others fall within the scope of practice of dentists.

Licensing laws differ in each jurisdiction but all have laws that define the scope of practice of licensed health professionals within that area. Both physicians and dentists should be aware of the limitations of their own jurisdiction

before participating in the treatment of SDB with oral appliances. Most often, the fabrication, fitting, and adjusting of oral appliances are limited to the practice of dentistry and fall outside the legal practice of medicine. In this regard, physicians should recognize the liability they assume if they engage in placing and managing oral appliances themselves.

For dentists, the caveat relates to diagnosis, which must take place prior to appliance usage. While most jurisdictions describe the practice of dentistry with very broad definitions, there do not appear to be any that specifically include the diagnosis of disordered sleep within the scope of the practice of dentistry. Additionally, if a dentist prescribes an oral appliance to treat a symptom such as snoring, this plan of treatment, without a complete diagnostic evaluation, may create significant exposure for the dentist. In a case such as this, a treatment that alleviates the symptom of snoring may serve to mask a more serious condition and discourage the patient from seeking a more effective treatment for the disorder, perhaps resulting in dangerous consequences for the patient and potential legal liability for the practitioner.

The fact that an individual is licensed to perform a procedure does not singularly insulate the practitioner from liability for negligent conduct. In terms of the negligence formula, healthcare practitioners have a preexisting duty to their patients to provide medically appropriate care that a practitioner in good standing would provide. This is referred to as the "standard of care." Physicians have been found to have violated the standard of care when, for example, they did not acknowledge the limitations of their own abilities and, as a result, failed to refer patients to an appropriate medical specialist.

In the context of SDB, any healthcare professional who diagnoses or attempts to treat this malady has a duty to do so with a medically appropriate level of care. It is absolutely critical for the dentist to recognize that diagnosis based on physical observation and patient interview alone certainly would not satisfy the standard of care if the level of care ordinarily possessed and used by members of the profession in good standing in the diagnosis of SDB would have included the administration of a polysomnogram (overnight sleep study).

Likewise, physicians must be aware that they are neither legally nor medically qualified to properly manage appliance construction, fitting, and titration or the inherent concerns of tooth movement, temporomandibular joint dysfunction, and occlusal discrepancies.

Summary

A physician or dentist who exceeds the scope of a professional license risks civil and criminal liability. Additionally, one who practices within the scope of licensure but does not satisfy the standard of care applicable to a given procedure also risks liability. It becomes obvious then that treatment of SDB with oral appliances must be a team effort. Diagnosis falls into the realm of medicine while management of the oral appliance dwells within that of dentistry. If each practitioner performs within the scope of licensure and standard of care, patients will be more likely to receive effective treatment and legal liability will be minimized.

Author information

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