The recognition and management of sleep-breathing disorders: a mandate for dentistry

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Dentistry is unique among the health professions in that biannual re-examination visits are deeply ingrained in the American psyche. This and the close personal relationships that often develop between dentist and patient afford dentists the opportunity to closely monitor the medical health of their patients. But dentistry, in its zeal to avoid the constraints of dental insurance and to cater to the increasing demands for cosmetic enhancement by the public, has relinquished, in many cases, the responsibilities that the title of doctor has bestowed on the profession.

Simply stated, dentistry, as a whole, is not doing enough to fulfill its public health responsibilities. Nowhere is this more evident than in the field of sleep-breathing disorders. Most dental school curricula (and, incidentally, most medical school curricula) do not provide any background in sleep medicine. Consequently, most practicing dentists do not even consider including sleep questions on their medical questionnaires or asking simple questions during initial or recall examinations or even before oral or IV sedation.

It has been estimated that in the United States alone 18 million men, women, and children suffer from sleep apnea. Millions more snore. Of these 18 million, approximately

85% are not aware of their problem despite the fact that the average life span of an untreated sleep apneic is years shorter than for the rest of the population. Both snoring and obstructive sleep apnea have been implicated causally and otherwise in cardiac disease, myocardial infarction, irregular heart beat, hypertension, diabetes, stroke, depression, and erectile dysfunction to say nothing about vehicular and occupational accidental injury, and death. At a time when, in the United States, presidential candidates and the public clamor for the adoption of universal health care, the increased medical costs associated with untreated sleep apnea are estimated to be in the billions a year.

Oral appliance therapy has been accepted as an alternative or supplement to CPAP in some instances and yet the public and many dentists remain unaware of the vital role of the dentist as part of the healthcare team for the recognition and management of snoring and obstructive sleep apnea. The need for publicizing dentistry's involvement in sleep medicine is, however, the subject for a different article.

While it is understandable that many in the dental profession do not want to assume the added responsibility of treating a medical problem with an oral appliance and cannot devote the time, resources, and effort it requires to become qualified to practice in this area, there are two simple things every dental practitioner can and must do.

- STOP questionnaire
- Measure neck size

In the May 2008 issue of the journal *Anesthesiology* [1], Chung et al. propose a series of four questions to be asked of every patient about to undergo surgery under general

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anesthesia. Dr. Chung and her team propose the STOP questionnaire:

S: Do you **snore** loudly?

T: Do you often feel **tired**, fatigued, or sleepy?

O: Has anyone **observed** you stop breathing during sleep?

P: Do you have or are you being treated for high blood **pressure**?

If a patient answers “yes” to two or more questions, then he or she is ranked high risk for OSA prior to general anesthesia, according to Dr. Chung and her team. This questionnaire should be part of every practicing dentist's initial medical history and asked again at reevaluation appointments. It is essential that these questions also precede every administration of in-office oral or IV sedation.

When these questions are combined with the risk factor associated with increased neck size, the sensitivity for predicting OSA becomes greater.

Although shirt collar size (≥ 17 in. in men, ≥ 16 in. in women) is often used as presumptive evidence of the likelihood of sleep apnea, Flemons [2] increased the probability of accurate predictability of sleep apnea from an adjusted neck circumference calculation.

$$ANC = NC(\text{cm}) + H(4\text{cm}) + S(3\text{cm}) + C/G(3\text{cm})$$

The formula states that the adjusted neck circumference (ANC) equals the neck circumference (NC) in centimeters plus 4 cm if there is hypertension (H) plus 3 cm if there is snoring plus 3 cm if there is observed choking or gasping (C/G).

The following numerical results assess the probability of OSA.

< 43 : Low Probability of OSA

43 – 48 : Intermediate Probability of OSA

> 48 : High Probability of OSA

In conclusion, two simple steps, no more than 2 minutes of time at the initial visit and at each subsequent recall appointment, can improve the quality of life and the health of countless millions of people and save the healthcare system billions of dollars whether or not an individual dentist becomes involved in the management or simply refers those suspected of having obstructive sleep apnea to a medical or dental colleague.

Dentists who have chosen to become involved in the recognition and management of snoring and obstructive sleep apnea are exceptional in their viewpoint and in their dedication to learning. Those physicians who recognize the important contribution dentistry can make and have accepted these dedicated practitioners as part of the treatment team are to be applauded. Dental schools whose forward-looking faculties have chosen to include the study of sleep-breathing disorders are to be commended.

There is, however, more that needs to be done.

Dentistry must assume its role as a healthcare profession in the 21st century. It is no longer enough to be consumed with only the appearance and health of the oral cavity. The ability to recognize potential stroke victims by panoramic radiograph and to recognize the relationship of periodontal disease to cardiac disease have already mandated a new vision for dentistry. To that mandate we must add, at the very least, the screening for obstructive sleep apnea.

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