Oral Appliances Offer Tx Option for Sleep Apnea

BY JOYCE FRIEDEN
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When a patient with obstructive sleep apnea can't tolerate using a continuous positive airway pressure device, what's the next step?

"The option people end up thinking about when CPAP fails is typically surgery," said Kent Moore, M.D., D.D.S., president of the Academy of Dental Sleep Medicine. But there is another alternative.

"There is strong level 1 data showing that oral appliance therapy can be more effective than soft palate surgery," said Dr. Moore, an oral/maxillofacial surgeon in private practice in Charlotte, N.C.

For example, one prospective randomized trial compared dental appliances with uvulopalatopharyngoplasty in 95 men with sleep apnea. The men who used dental appliances had a success rate (a 50% or greater reduction in the apnea index) of 95%, which was significantly higher than the 70% success rate for the patients who underwent surgery (Chest 2002;121:674-7).

Dr. Moore emphasized that most professionals encourage patients with sleep apnea to start out by trying CPAP, which is recognized as effective first-line treatment for patients with sleep apnea.

"But a lot of folks just simply can't tolerate CPAP for numerous reasons," he said. "One reason is that [the required] airway pressures are not easily tolerated in folks with milder forms of apnea. Another issue is sleeping with the device attached to the head or face—simple comfort issues prevent a lot of patients from tolerating it. And there is also the claustrophobia issue."

Several types of dental appliances are currently on the market for treating sleep apnea. One type that is widely used is a variation on the Herbst appliance, which is designed to help stimulate jaw growth in children. "Dentists have adopted that effect for sleep apnea, because you're advancing the mandible, which expands the airway at the base of the tongue," Dr. Moore explained. "An oral appliance has several effects: It expands the airway, lowers soft tissue compliance, and makes the airway stiffer. The combined effect has a huge benefit for a large number of patients with sleep apnea."

Like other medical devices, apnea appliances do have side effects. For example, the mandibular repositioning devices can cause temporomandibular joint syndrome, and they also can change the position of the teeth. "Shifting of the teeth is the bigger of the two issues, but even the orthodontists in our practice group say, 'Get over it—people aren't going to die from malocclusion,' " Dr. Moore said.

For patients who don't have the teeth or bone structure needed to anchor the mandibular devices, tongue-retaining appliances can be used to pull the tongue forward and expand the airway at the base of the tongue. "You'd be shocked at the number of people who have insurance … and their teeth—usually the upper teeth—are gone," said R. Neal Aguillard, M.D., medical director of the sleep disorders center at Methodist Hospital, Memphis.

Only certain patients are good candidates for dental appliances, which can cost anywhere from several hundred to several thousand dollars for the device and the required dental visits.

"Dental appliances may be an appropriate first line of treatment in patients with milder degrees of sleep apnea," said Carl E. Hunt, M.D., director of the National Center on Sleep Disorders Research at the National Heart, Lung, and Blood Institute, in Bethesda, Md. "This has to be very individualized."

Dr. Aguillard agreed. "Unless the patient has really severe apnea, I'll mention it as an option," he said. "If the patient has claustrophobia and can't stand having anything on [his] face, I'm going to be first opting for an oral appliance."

To determine whether a dental appliance will work in a particular patient, the dentist must do a thorough examination, including special x-ray studies, Dr. Aguillard explained.

"The reason people have apnea varies from one person to another," he said. "Sometimes the problem may be in the nose, sometimes it's the roof of the mouth, sometimes it may be the tongue, sometimes the jaw, and sometimes the tonsils and adenoids. Sometimes more than one place is blocking off and keeping air from getting into the windpipe. So x-rays are important, because they can give you an idea of whether repositioning the jaw will actually do something."

A barrier to wider use of dental appliance treatment for sleep apnea is widespread unfamiliarity with the approach in the general medical profession, according to Dr. Moore. "It's a real frustration for us right now as a profession," he said. "Physicians themselves are not getting the word on it, and the general public is getting even less."

Dr. Hunt agreed. "Many times today, the primary care physician refers the patient for a sleep study and gets a report back, and it's up to [the patient] to coordinate treatment." ■

Ins and Outs of Sleep Apnea Appliances

When choosing an appliance to treat sleep apnea, the options are many and varied, Dr. Moore said.

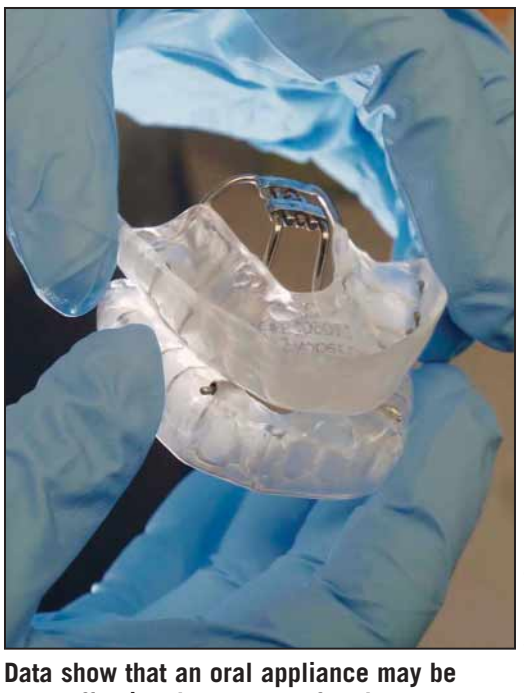
Custom-made adjustable appliances require several visits for evaluation, fitting, and follow-up. The initial evaluation includes tests to assess the ability of the upper airway to expand when the jaw is moved forward. After the appliance has been made and fitted, the patient can come in at any time for adjustments, but it's especially important for the patient to visit after the symptoms have improved.

"Once that point has been achieved, a repeat portable monitoring test is ordered … to assess results of titration," he continued. "Following this, the patient is sent back to the sleep physician for possible repeat polysomnography."

In addition, "the patient needs to be followed for the length of time that they continue with use of the appliance—possibly every 6 months to 1 year—in order to monitor for changes in occlusion, TMJ problems, or other problems with the appliance," Dr. Moore noted.

In contrast to adjustable appliances, there are devices that are not custom made, known as "boil and bite." These "one-position appliances" are not adjustable after the initial fitting. "Some of these can be effective, and they are generally less expensive than custom-made appliances, which will cost more because they are uniquely patient-specific," he said.

Costs can range from several hundred to several thousand dollars, which includes the appliance as well as visits for evaluation and fitting. Health insurers typically will cover these costs if the patient has sleep apnea that has been documented by polysomnography, Dr. Moore said.



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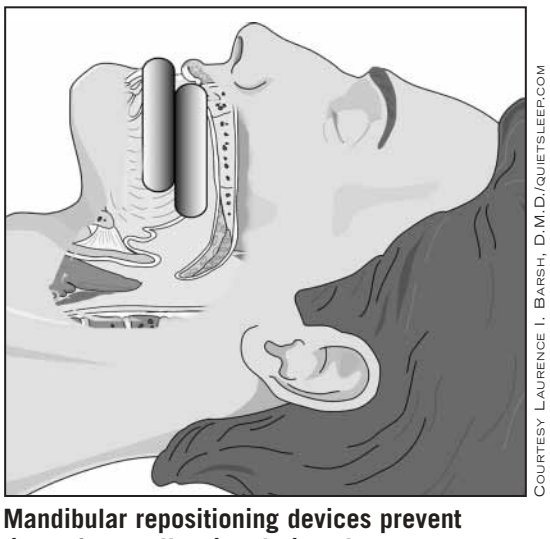
Data show that an oral appliance may be more effective than surgery for sleep apnea.



Courtesy Laurence I. Barsh, D.M.D./quietsleep.com

Mandibular repositioning devices prevent tissue from collapsing during sleep.

A Single Stroke Causes Cognitive Decline in Certain Survivors

BY DAMIAN McNAMARA
Miami Bureau

Bal Harbour, Fla. — Cognition declines in the years after a single stroke for a substantial minority of patients, according to a study presented at the annual meeting of the American Neuropsychiatric Association.

After the initial poststroke period, most experts would expect cognition to improve or remain static, according to the literature. However, some studies with a longer follow-up now suggest cognitive decline is possible after a single stroke, even in younger patients. The current research supports that finding and shows the utility of screening patients with the Mini Mental State Examination (MMSE).

The cognitive impairment due to stroke is not static. "Our findings suggest there is a subpopulation that continues to decline as they age," Gregory Kellermeyer, M.D., said in an interview.

The investigators assessed 16 men and 10 women at least 1 year following a single known stroke. The mean follow-up was almost 6 years. Participants were relatively young with a mean age of 58 years. Pretreatment data for the stroke survivors came from a study of constraint-induced movement therapy for upper extremity motor impairment. Cognitive deficits can occur independent of motor decline. The implication is that "even a single stroke may in some persons incite a progressive neurodegenerative process that preferentially affects cognition," the investigators wrote.

There was possible cognitive impairment in 6 of 27 participants (22%) and definite cognitive impairment in 2 of 27 (7%). Possible cognitive impairment was defined as a greater than 1 standard deviation on the adjusted MMSE; definite cognitive impairment was defined as greater than 2 standard deviations. "The Mini Mental State Examination is a possible way to identify this subpopulation," said Dr. Kellermeyer, a fourth-year resident in psychiatry at the University of Colorado, Denver.

Patient age alone, gender, handedness, stroke laterality, and severity of motor impairments were not significantly associated with raw or adjusted MMSE results. These MMSE scores were inversely related to time since the stroke. ■

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