Oral Appliances, Surgery Falling Short for Apnea

BY BRUCE JANCIN Denver Bureau

KEYSTONE, COLO. — Oral appliances and surgery are widely perceived as effective alternatives to nasal continuous positive airway pressure for treatment of obstructive sleep apnea. But the evidence suggests otherwise, Dr. Robert Ballard asserted at a meeting sponsored by the National Jewish Medical and Research Center.

Oral appliances, also known as

mandibular advancement devices, typically consist of one piece that fits into the mandibular dental bridge and another for the maxillary dental bridge, along with a lot of attached hardware. The devices alter the facial structure by pushing the lower jaw forward, pulling the tongue forward, which in turn is supposed to open up the posterior pharyngeal airspace and thereby reduce apneic episodes, explained Dr. Ballard, director of the sleep disorders program at the center in Denver.

"A lot of people have been convinced for the last 20 years that patients would rather sleep with one of these in their mouth than with a CPAP [continuous positive airway pressure mask over their face. It turns out that's probably not the case," he said.

There have been two head-to-head crossover comparative trials of oral appliances versus standard nasal CPAP in patients with obstructive sleep apnea (OSA). Both came out in favor of CPAP.

"I have to say that most of the patients I

see in our clinic have three or four of these appliances tucked away in drawers and places like that that they haven't used in about 5 or 6 years. It has not been my observation that many people like to use these devices any more than they like to use nasal CPAP—not to say they don't hate nasal CPAP also," the pulmonologist said.

In one crossover trial, investigators at the University of Witten/Herdecke (Germany) randomized 20 patients with mild to moderate OSA as evidenced by a mean baseline apnea/hypopnea index (AHI) of 17.5 events per hour to 6 weeks on nasal CPAP and an equal period on an oral appliance. CPAP reduced the AHI to 3.2. The oral appliance had no significant impact (Chest 2002;122:569-75).

In the other randomized crossover study, University of Edinburgh physicians placed 48 patients with newly diagnosed OSA on 8 weeks of CPAP and 8 weeks of oral appliance therapy. Median AHI fell from a baseline of 22 events per hour to 8 on

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CPAP, pared with 15 with the oral device. The investigators evaluated outcomes in 21 ways; CPAP came out ahead in 7, with no significant difference between CPAP and oral appliance therapy in the other 14. Patient prefer-

ence for treatments was similar (Am. J. Respir. Crit. Care Med. 2002;166:855-9).

Turning to surgical alternatives to CPAP, Dr. Ballard said the most popular today is radiofrequency tissue ablation. "You see ads for this in newspapers," he noted. The procedure didn't fare too well in a 90-patient randomized trial comparing it with CPAP and a sham surgery placebo. Mean AHI fell from a baseline of 21 events per hour to 5 with CPAP even though CPAP use was suboptimal, with only 11 of 30 patients using it for at least 4 hours per night at least 5 nights per week.

In contrast, AHI after radiofrequency ablation was 17 events per hour, not significantly different from baseline. Ablation did, however, result in significantly improved quality of life, subjective sleepiness, and reaction time, compared with baseline (Otolaryngol. Head Neck Surg. 2003; 128:848-61).

Studies of uvulopalatopharyngoplasty and laser-assisted uvulopalatoplasty have also demonstrated insufficient efficacy for these operations to serve as sole therapy for OSA. The only procedure that provides a high success rate is a heroic one called maxillomandibuloplasty. It involves breaking the jaw, protruding it forward, and securing it with plates.

'What I tell my patients is if you really want to get a good surgical response, you have to be prepared to undergo significant surgery," Dr. Ballard said. "This is for somebody who's had all the other surgeries and they didn't work."

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