Trial Appliances: Are We There Yet?

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During the last 27 years, I have witnessed many changes in our field: the criteria defining OSA have changed a few times, the indications for oral appliances have moved from the treatment of primary snoring to the treatment of moderate apnea as a first line therapy, and diagnosis went from hospital-based facilities to the use of ambulatory devices often combined with telemedicine to improve access to treatment for patients. Because of the obesity epidemic and the more stringent diagnostic criteria for OSA among other things, the prevalence of OSA has greatly increased during that time. As years have gone by and research supporting the use of oral appliances has steadily increased, I have remained hopeful that our field would grow and we would find as many apneics using oral appliances as the ones using CPAP. Am I too optimistic? Just look at the evidence: there is not a month during which one cannot read new studies on oral appliances published, often in high impact journals. The scientific community, the educators are interested in oral appliances. The scientific community sees the value - the oral appliance is just as good as the CPAP for quality of life, cognitive and functional outcome. We now know that the CPAP, despite being an excellent treatment for OSA, is not tolerated by a great number of patients. Despite this, it is estimated that many of those who unsuccessfully use CPAP are not even offered an alternative treatment after the failure. That concept is beyond me… A great number of people suffering from OSA could be treated with oral appliances and yet, they are not.

This frustration is shared by many and is also recognized by physicians, some of whom have tried to address it by coming up with solutions or writing what a lot of sleep doctors have been thinking: many medical colleagues are hesitant to prescribe an oral appliance due to the uncertain prognosis combined with the high cost of the device. David White suggested in an editorial that things would be simpler if dentist could use a “relatively inexpensive boil-and-bite device” to predict oral appliance success.

The best study I could think of comparing custom to prefabricated oral appliances is the one by Vanderveken in 2008. The results were unequivocal: a boil and bite appliance could improve snoring but was not good at correcting the apnea-hypopnea index. In that perspective, it was potentially useless for the sleep dentist to use a boil and bite appliance to predict the result of oral appliance therapy with patients.

Time has passed, techniques and materials have improved and new trial appliances have been introduced to the market. We have recently seen good, relatively large studies with some favorably comparing temporary to regular appliances. These studies not only come up with excellent results, but were also done with sound titration protocols. In addition to the successful use of trial appliances to predict compliance success, the increased use of trial appliances could also open the door to evaluation for OAT treatment that had previously been cost-prohibitive: evaluation of combined (CPAP-OA) therapy, emergency therapy for symptomatic patients, evaluation of mandibular advancement in future orthognatic surgery cases, evaluation of oral appliance treatment on specific morning headache patients and the list goes on.

Of course, the trial appliance has its limitations and will not be able to evaluate the effect of some oral appliance adjuncts like the Tongue Tamer, the tongue lifter and the nasal dilators we find on some models. Neither will it predict the success of different systems like the one on the Oventus appliance with and without positive airway pressure valves. However, if the use of trial appliances becomes mainstream, we can hope that these adjuncts will someday be incorporated on newer trial models.

So, are we there yet? Only time will tell but it seems we are closer from regularly using trial appliances than ever.

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REFERENCES


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