Conservative Treatment for Snoring -Sleep Apnea and Breathing Related Sleep Disorders
General, Family and Cosmetic Dentistry

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SnoreSolutions

Breathing Related Sleep Disorders

The Latest News on Airway Orthotic Therapy

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Vertical Adjustment: *The Next Revolution*

Airway orthotics stabilize airway dynamics by manipulating mandibular posture. The first orthotics were fixed, with no ability to adjust mandibular protrusion. Once it was discovered that different patients required their own unique level of mandibular advancement, adjustable versions began to appear, resulting in an increased success rate.

Recently, much discussion has taken place regarding the benefits of vertical adjustability. Anecdotally, many of us have found that certain patients demonstrate improvement when vertical dimension is altered. However, this a has been the subject of hot debate in the world of orthotics, with much support given to the notion that vertical opening should be kept as minimal as possible for all patients.

In the Fall issue of Sleep Review 2001. Don Frantz, the developer of the EMA orthotic shared a case report in which a successful orthotic, which was remade after breaking was found to be no longer effective. Upon close evaluation of the original effective orthotic and the remade ineffective orthotic, it was discovered that the remake had a reduced vertical dimension of 3mm. A third orthotic made to the original vertical dimension, was found to be effective. All outcomes were established with a full sleep study.

Dr. Frantz was so convinced of the importance of vertical that he is introducing a version of his EMA orthotic that allows vertical adjustability this June in Seattle. To date, the Silencer Professional has been the only orthotic providing chair-side vertical adjustability (through the simple replacement of a vertical pin). Dr. Thornton, the developer of the TAP orthotic, is currently in the process of adding this feature, but no date has been announced.

Exchangeable Pin Allows Vertical Titration of Silencer Professional

As a provider of these orthotics, I prefer to use an orthotic that affords me as much adjustability as possible, I am more convinced than ever that the benefits of vertical adjustability will manifest as increased levels of successful outcome in future studies, just as happened when it was determined that these orthotics needed to be adjustable rather than fixed.

Bottom line, the next evolution in airway orthotics is the addition of vertical adjustability. The design of some existing orthotics, like the TAP, may have to be drastically modified in order to accommodate this evolution; however, that's what "survival of the fittest" is all about.

SnoreSolutions Hi-lights

News Flash

Sleep Disordered Breathing: *Inattentiveness in Children*

Pediatrics 2002;109(3):449-56

Inattention and hyperactivity are frequently witnessed among children with SDB.

A cross-sectional survey involving 866 children ages 2-14 has demonstrated that inattention and hyperactivity are associated with increased daytime sleepiness, snoring and other symptoms of SDB; especially in young boys. Often, these symptoms are found to demonstrate improvement after treatment of the SDB.

Airway Orthotics: Eliminating the Guess Work

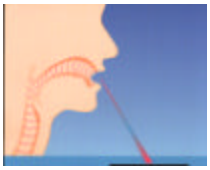
Currently, protocol for airway orthotic therapy involves a physician directing a trained individual to fashion and titrate an orthotic until subjective feedback indicates an improvement of symptoms; a repeat sleep study then determines effectiveness. This protocol involves much "Guess Work" regarding orthotic candidacy and titration.

Although orthotic therapy is usually reserved for an RDI of less severity, some patients achieve a good outcome and some not, regardless of the initial level of RDI; indicating that severity alone is not dependable for predetermining outcome.

Titration based on subjective feedback can be elusive; patients may not have a bed-partner to monitor improvement of symptoms and/or may not demonstrate meaningful daytime symptoms, making subjective feedback difficult. These patients are often advanced as far as they can comfortably tolerate and then referred back for a follow-up sleep study. Unfortunately, in some patients, this results in titration past their ideal position into a position of reduced effectiveness.

Alternatively, "real-time" acoustic evaluation of the dynamics of a pathological airway, followed by evaluation of how effectively an orthotic normalizes these dynamics, facilitates the evaluation of the effect of mandibular repositioning on airway pathology; potentially aiding in determining candidacy and establishing the most ideal titration position.

Other techniques such as video-endoscopy and MRI have also been used to assess the effect of mandibular advancement on the airway. However, the low cost, ease of use and high patient acceptance of acoustic reflection makes it an ideal 3-dimensional imaging modality for this purpose; allowing "real-time" assessment of both structural and functional airway dynamics.



Acoustic reflection facilitates evaluation of an orthotics ability to normalize airway dynamics, allowing a systematic and thoughtful approach to airway orthotic therapy. Although a follow-up sleep study is required to verify effectiveness, the ability to evaluate how well an orthotic normalizes airway behavior during wakefulness can help eliminate much of the "Guess Work" currently involved in providing these orthotics.

Evaluating the Awake Airway

Evaluation of the "awake" airway has been criticized when investigating and treating disordered breathing that occurs while "asleep". The literature clearly demonstrates that the characteristics of an asleep airway differ than that of an awake airway; and that these differences become even more pronounced with the loss of muscle tonus that accompanies REM sleep. However, evaluation of the awake airway remains both easier and more convenient than the asleep airway.

Using various measurement modalities, clear relationships have been established between the airway dynamics of a pathological airway during both wakefulness and sleep; reduced caliber and increased collapsibility. An understanding of these relationships and the dynamics of a normal airway, can provide us with insight as to how effectively we are normalizing the dynamics of a pathological airway through the use of an airway orthotic.

Evaluation of the awake airway can be easily accomplished in a practitioners office using naso-pharyngoscopy and acoustic reflection. Naso-pharyngoscopy, usually performed by an otolaryngologist, is subjective and can be uncomfortable for the patient. In contrast, acoustic reflection requires a minimum of training, can be provided by various practitioners, is non-invasive, provides an objective cross-sectional measurement of the airway and "real-time" evaluation of airway collapsibility.

John S. Viviano **B.Sc. D.D.S, obtained his credentials from the Uuniversity of Toronto and has practiced General Dentistry since 1983. He maintains a special interest in the treatment of Snoring, Sleep Apnea, and Breathing Related Sleep Disorders. He is a member of the American Academy of Sleep Medicine and Sleep Wake Disorders Canada. He is both a member of and credentialed by the certifying board of the Academy of Dental Sleep Medicine and he is also a member of and has lectured on behalf of the Canadian and Ontario Dental Associations and other organizations regarding the treatment of Snoring, Sleep Apnea and Patient Management Strategies. Dr. Viviano utilizes various appliance designs including trial appliances in his conservative treatment of Snoring, Sleep Apnea, and Breathing Related Sleep Disorders.**

Patient Course

SNORING:

The Search for Silent Nights
Tuesday November 19, 2002
7:00-8:30 pm

Phone to Register

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