Perspectives

Dental Practice Building Strategies

A Montage Media Publication

Successful Management of Bruxism

Bruxism—an unconscious and involuntary oral habit—is manifested by rhythmic, nonfunctional grinding and clenching of teeth. This represents a major dental condition and affects nearly 40 million Americans on a nightly basis.[1] Many of these individuals, however, are unaware that they clench their teeth while sleeping. In addition, the condition is often the source of headaches, damage to natural dentition and restorative treatments, implant failure, and even neck pain. There are several methods for the management of Bruxism. The following article will highlight a simple, effective, often underutilized treatment option—the use of occlusal splints with an emphasis on the **BiteSoft™ Anterior Splint.**

Effects of Bruxism on Teeth and Restorations

Bruxism is a major cause of tooth wear, which can be exacerbated by several factors, including the presence of acid in the diet, reduced salivary flow, and specific medications.[2] It is often easy for clinicians to overlook active Bruxism in younger patients, particularly if the patient has minimal tooth wear and is symptom free. Unfortunately, Bruxism is usually silent until the damage is irreversible and costly to treat.

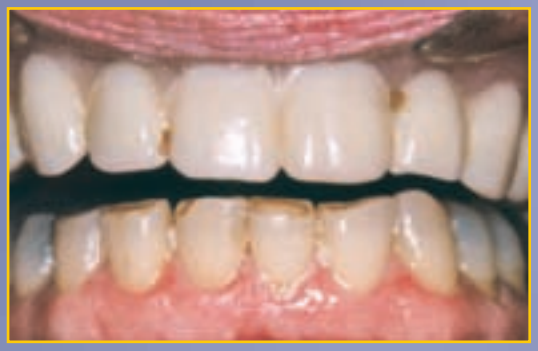

FIGURE 1.
A tooth wear pattern is evident, suggesting malocclusion and heavy bruxing.

Photo courtesy of the Academy of General Dentistry.

It is, therefore, prudent that a preventive approach be utilized to treat patients with Bruxism. The condition must be diagnosed early; exacerbating factors should be identified and appropriate interventions performed in order to arrest the tooth wear process and prevent more severe damage **(Figures 1 and 2)**.

In addition to tooth wear, tooth fractures are also a frequent result **(Figure 3)**, particularly in teeth with deep or extensive restorations. Often, the fractured teeth cannot be restored and require extraction or replacement with a prosthesis **(Figures 4a and 4b)**.

The occlusal forces generated during Bruxism may exceed those of normal mastication and daytime maximum voluntary bite forces. Hence, crown restorations, veneers, bridges, implants, and inlays placed in patients who brux are more prone to porcelain fracture or failure due to occlusal overloading. However, many restorations and implants are placed in patients with moderate to severe Bruxism without any form of tooth protection.

Anterior Splint Therapy for Headache Management

Migraine and tension-type headaches are part of a category known as benign headaches. While the diagnosis of headache is ideally made by a physician, multiple studies have concluded that Bruxism and muscle dysfunction are major contributing factors. Dentists, therefore, can play an important role in the management of these headaches.[3-6] Anterior splint therapy provides an effective, nonmedicated treatment without side effects for the large population who suffers from headaches.

Diagnosis

When screening patients for potential moderate to severe bruxism, the patient should be asked the following questions, which can aid the clinician in obtaining an accurate diagnosis and treatment plan:

- Is there a recent history of tooth-grinding occurring at least 3 to 5 nights per week over a six-month period?
- Is there evidence of tooth wear, flattening, or fractures?
- Do you experience tenderness in the jaw muscles and temples when pressed or clicking of the jaw?
- Do you have occasional discomfort upon chewing?
- Do your teeth make contact even when you are not chewing?

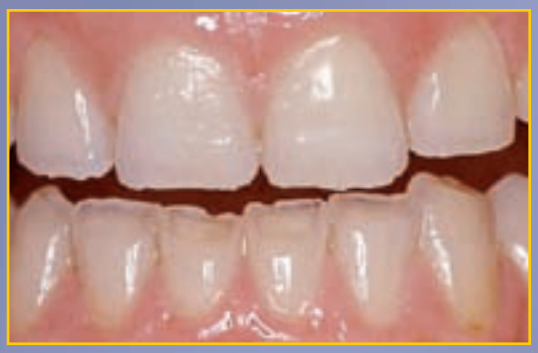

FIGURE 2.
Severe wear is demonstrated in a 30-year-old female patient.

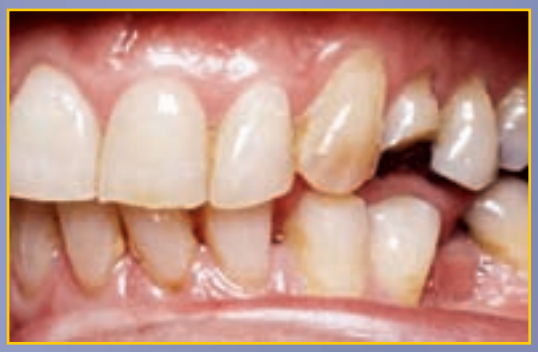

FIGURE 3.
Tooth fractures may also result from Bruxism.

Managing Bruxism

Management of the condition is usually directed towards tooth/restoration protection, reduction of bruxing activity, and pain relief. Dental treatment for Bruxism primarily involves occlusal splints and/or occlusal therapy (ie, bite adjustment or rehabilitation).

The Full-Mouth Occlusal Splint

Many reasons exist for the nonprescription of the occlusal splint, especially the full-mouth occlusal splint. First, the relatively large size and palatal coverage have resulted in poor patient compliance. This is especially valid for patients who wear the splint for protection and not for pain management. In addition, it is difficult and time consuming to achieve the criteria for a full-mouth splint. Requirements include multiple simultaneous contact with all opposing teeth, as well as cuspid and anterior guidance.

The Anterior Splint

Anterior splints have been successfully used for many years by specialists and general dentists and eliminate many of the previously described challenges associated with the full-mouth splint.[7] Most recently, MyoHealth™, a leader in providing solutions for Bruxism, snoring, sleep apnea, headache, and TMD, launched the BiteSoft Anterior Splint into the dental markets in the Asia-Pacific regions and United Kingdom. The BiteSoft™ is the most prescribed splint in these regions and is now available throughout North America.

Anterior splints, which contact the anterior dentition in the opposing arch, reduce masticatory muscle activity during clenching and grinding. Studies have reported that an appropriately designed anterior splint can reduce maximum clench force of both the masseter and temporalis muscles by up to 70%.[8]

The BiteSoft™ Solution

The BiteSoft™ Anterior Splint, exclusively fabricated by Trident Dental Laboratories, presents an **optimal** and **effective solution** to help patients overcome **Bruxism**. BiteSoft has been designed so that the posterior dentition does not contact the occlusal surface in any mandibular movement. When the anterior teeth make contact with the splint, pressure-sensitive receptors in the periodontal ligament suppress the intensity of the forces of clenching.[9] The anterior splint has also demonstrated a significant reduction in the symptoms associated with temporomandibular joint (TMJ) disorders.[7]

The alternative to a BiteSoft Anterior Splint is a full-mouth splint which requires significant chairside time to make the necessary adjustment in order to

FIGURE 4A AND 4B.
Poor aesthetics can result from undiagnosed tooth wear. A fractured porcelain crown may be prevented with proper tooth protection.

Images courtesy of MyoHealth™ Global Corporation.

achieve simultaneous contact on all opposing teeth. With the BiteSoft, minimal chairside time is needed, since contact with only 2 to 4 teeth is required to achieve the inhibitory effect on Bruxism.

The BiteSoft Anterior Splint can be fabricated in either dual laminate or thermoplastic lining to enable the clinician to customize the appliance for their patients. The thermoplastic lining material can be remodeled for those individuals who receive new dental treatment or for those patients with limited retention.

The Role of the Laboratory

The laboratory plays a vital role in achieving clinical success using anterior splints. Specific design criteria are incorporated into the BiteSoft™ Anterior Splint, enabling the suppression of Bruxism, occlusal stability, and maximum patient comfort. Working with a MyoHealth Laboratory, such as Trident Dental Laboratories, ensures that the BiteSoft™ appliance is delivered without major chairside adjustments, since the specifications are integrated on mounted models in the laboratory.

Conclusion

For many patients, the decision to undergo restorative treatment represents a major investment in time as well as finances. Therefore, it is imperative that clinicians educate their patients on Bruxism and its potential effects on both oral health and their aesthetic restoration (ie, crowns, veneers) investments. It also enables dental practices to expand service offerings by providing their patients with a solution (ie, BiteSoft™) to alleviate the condition and to preserve the beauty of their dental restorations.

References

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Portions of this article have been adapted from Yap A, Diagnosing and Managing Bruxism, Dental Collaborations, Winter 2006.

EASY AS 1-2-3!

STEP 1

COMPLETE RX FORM

Simply use a Trident Rx form to place your BiteSoft™ Anterior Splint case order.

STEP 2

PREPARE YOUR CASE

Place impressions / models, bite registration, and RX form into an individual bag and secure with a rubber band.

STEP 3

PACKAGE YOUR CASE

Place your BiteSoft case materials into a box with foam for better protection. Call Trident at (800) 221-4831 for a case pick-up.

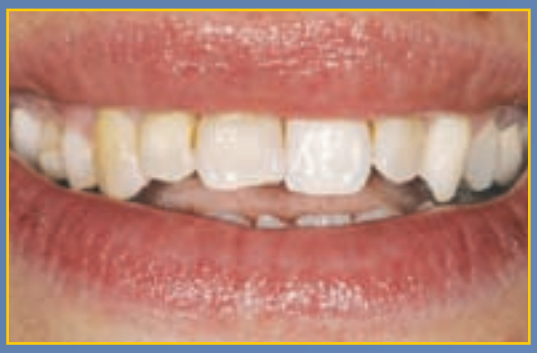

FIGURE 1.
Case 1. The patient presented with both skeletal and occlusal disharmony.

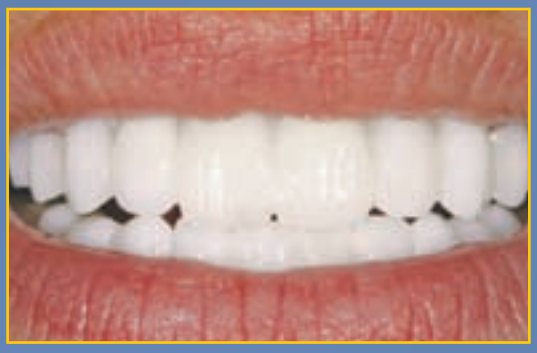

FIGURE 2.
Provisional restorations enabled the patient to provide personal input regarding function, phonetics, and aesthetics.

FIGURE 3.
A BiteSoft™ Thermo-lined Anterior Splint appliance was fabricated as a necessary adjunct for long-term occlusal protection and stability.

Ensure Long-Term Protection of Patients' Restorative

Larry Rosenthal, DDS*

As the clinical challenges of debilitated dentition are addressed, clinicians must also consider the significance of occlusal rehabilitation and with this, occlusal protection. The following two case presentations represent different, but significant occlusal challenges. As each patient sought aesthetic improvement, often the solution involved major occlusal change. The use of an anterior splint device (ie, BiteSoft™) to manage occlusal disharmony and Bruxism may often be required to achieve long-term treatment success and preserve the patient's as well as the clinician's restorative investment.

> "For patients with Bruxism, BiteSoft™ provides a means to effectively manage the condition and offers peace of mind knowing that their investments are adequately protected."

Case Presentations

Patient I:

The patient presented with both skeletal and occlusal disharmony, an anterior open bite, as well as bilateral posterior cross-bites—a condition described as "long-face syndrome" **(Figure 1)**. A comprehensive treatment plan was developed to include a consultation with an oral surgeon regarding orthognathic possibilities, an orthodontist for orthodontic therapy, and a specialist for restorative prosthodontics. After much deliberation, the patient opted for a less invasive treatment plan without surgical intervention.

Using functional and aesthetic waxups and the appropriate preparation guides, the teeth were as minimally prepared as possible. All existing restorations and decay were removed, and provisionals were fabricated. The provisionals enabled the patient to provide personal input regarding function, phonetics, and aesthetics **(Figure 2)**. After one or two days, at the postoperative visit, the temporaries were evaluated by both the clinician and the patient. At that time, any concerns regarding color, shape,

or comfort were discussed and adjustments were made. An impression was then made of the provisionals to provide the master ceramist with a guide for the final restorations. In addition, digital photographs, as well as documentation of the lengths of the anterior six dentition, were obtained and forwarded to the laboratory.

The final result provided a stable bite, as well as aesthetic enhancement, and improved speech. The complete makeover, using minimally invasive techniques and materials, resulted in a dramatic change, both facially and functionally. The goal of correcting a severe malocclusion, tooth disharmony, and "long-face syndrome" had been accomplished with minimal discomfort and biologic change. Finally, a BiteSoft™ Thermo-lined Anterior Splint was fabricated as a necessary adjunct for long-term occlusal protection and stability **(Figure 3)**.

Patient II:
A young female patient presented with five-year-old bonded restorations, and now desired treatment to close spaces and change the shape of her teeth **(Figure 4)**. Due to the steep overbite and worn lingual and incisal edges, occlusal equilibration was performed followed by lingual wrapping of her anterior incisors. After minimal tooth preparation, pre-existing restorations were removed and the gingival tissue was recontoured. The placement of 10 porcelain laminate veneers resulted in a fuller, wider, more balanced smile and produced a dramatic change in the shape of her lips and her face **(Figure 5)**. Due to the patient's history of moderate Bruxism, a BiteSoft™ Dual-laminate Anterior Splint appliance was prescribed as a cost-efficient method to preserve the integrity of the porcelain veneers **(Figure 6)**.

Conclusion

Through the advances of aesthetic dental procedures, materials, and technology, the future promises to be even more innovative and exciting, with extraordinary yet predictable results. In cases of occlusal disharmony and pathologic Bruxism, the use of anterior splints (ie, BiteSoft™) can aid in long-term comfort and success.

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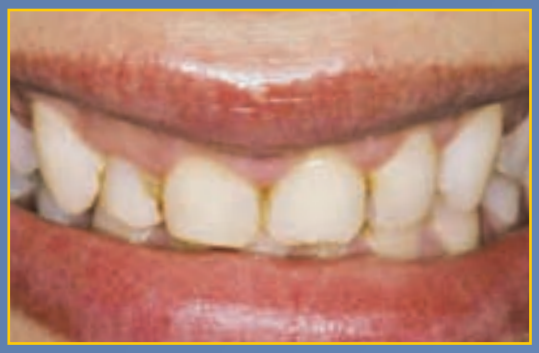

FIGURE 4.
Case II. Patient desired treatment to close spaces and change the shape of the teeth.

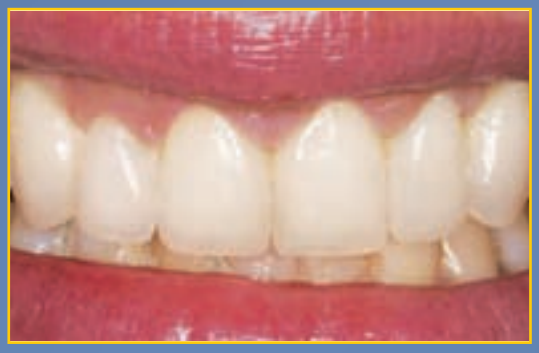

FIGURE 5.
Following placement of 10 porcelain laminate veneers, the patient demonstrated a fuller, more balanced smile.

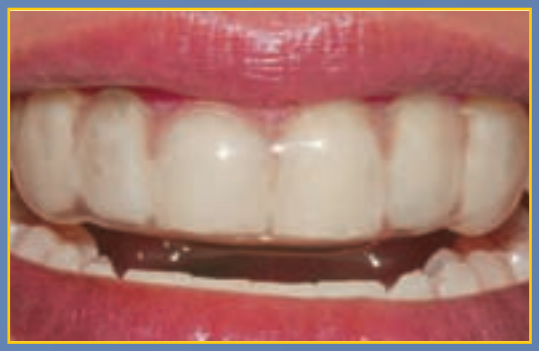

FIGURE 6.
Due to the patient's history of moderate Bruxism, a BiteSoft™ Dual-laminate Anterior Splint appliance was prescribed as a cost-efficient method to preserve the integrity of the porcelain veneers.