A cost-effective and custom solution for bruxism

By Akervall Technologies

In the U.S. alone, bruxism affects 10 per cent of people and as many as 15 per cent of children, according to the American Sleep Association. Once this oral habit has been identified, dentists usually prescribe a night guard or splint.

However, many types of night guards exist on the market that do not fit perfectly owing to the hard acrylic material from which they are manufactured. Furthermore, while custom-made occlusal guards are the best permanent solution, not every patient affected by bruxism can afford such an expensive mouth guard. Insurance may cover a night guard only once in the patient’s lifetime. Therefore, many cases of bruxism go untreated, causing continued permanent damage to patients’ teeth.

U.S.-based Akervall Technologies offers an effective custom-made and cheaper solution: the SOVA Night Guard, the thinnest over-the-counter night guard on the market made of thermoplastic material. While the SOVA Night Guard is only 1.6 mm thick, it has been designed to withstand 30 per cent more impact than a conventional mouth guard. Patients have reported that within the first week of wearing the night guard, the pain caused by bruxism or temporomandibular joint dysfunction (TMD) was significantly reduced or stopped. Moreover, they have remarked on SOVA’s stability and thinness, as well as the ease of drinking and talking while wearing it.

The technology behind the SOVA Night Guard is called Diffusix and it works with unique perforations and special crumple zones that prevent grinding forces from travelling to the teeth, relieving pain and reducing the risk of dental injury. When a SOVA Night Guard is properly fitted, perforations oscillate on impact to diffuse grinding forces and guide those forces into the crumple zones. The perforations also allow for a true custom fit and natural flow of air and saliva.

The SOVA Night Guard is made from a tough thermoplastic polymer material with a high tensile strength that is biocompatible, biodegradable and BPA-free. The night guard starts as a flat horseshoe shape. After immersion in 150 °F (54 °C) water, the material becomes pliable. The night guard is then molded against the teeth until it hardens. Thus, rather than requiring taking an impression and sending it to the dental laboratory, the SOVA Night Guard can be molded in the office in under 5 minutes to provide the patient with an immediate solution. The appliance can be remolded up to 20 times. SOVA also works with orthodontics. As the teeth are moving, the night guard can be easily adjusted.

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A new era in digital orthodontics

By Jeffrey T. Kozlowski, USA

A true straight-wire appliance would average less than one hour, including preparing the teeth, bonding the brackets, planning the turbo, engaging the wires, attaching the elastics and reviewing the patient instructions. And all without the help of a clinical assistant!

We all know the importance of placing brackets correctly, but few of us can consistently and quickly place each bracket precisely where it needs to be. With Insignia, you design the final occlusion and the customized appliances will be fabricated with custom torques, custom bases (in- and out) and custom wires. You specify your bracket positioning preference (e.g., center of the tooth, more gingival or more incisal) so that the custom appliances are designed to your specifications; thus, it is possible for your Insignia SL appliances to clinically match the placement of your direct bonded appliances.

To transfer the Approver-designed appliances to the mouth, Insignia provides customized placement gauges that place the brackets in the right spot without need for adjustment (Fig. 4). The precision built into the brackets is matched by the accuracy of the placement gauges that offer the benefit of a direct view with the precision of planned indirect bonding.

The major challenge in conducting this clinical evaluation was logistics. Managing treatment from so far away was a daunting experience at first; however, the process reinforced the importance of good clinical decision making and its impact on clinical efficiency. Gone was the luxury of shortening patients’ appointment intervals to accommodate case management alternatives when we need to make clinical decisions based on how a patient responds. It was thus incumbent upon me to re-engineer mechanical systems that would withstand the eight to ten-week appointment cycle of my West Coast trips.

At six months, the first patient finished treatment and by December 2009, after just 22 months, the last patient had his appliances removed. To determine the value of customized Insignia SL for my own practice, order your Damon Clear2 brackets today!

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Fig. 2. The Insignia Approver software provides a direct view with the precision of planned indirect bonding.
I initially compared the results of this evaluation with my previous seven years of experience treating patients with direct-bonded Damon System appliances. This comparison helped me evaluate customized Insignia SL with what I used to do in my office—direct bonding. These 41 customized Insignia cases treated in an average time of 13.3 months—a full five months (28%) shorter than my estimate of 17.5 months (Fig. 3). I based the estimates on my previous seven years of experience with the Damon System appliance but before I had had any experience with Insignia. In my opinion, this difference alone attests to the efficiency of customized Insignia SL treatment. Another value indicator was the number of repositioned brackets needed to finish the customized Insignia SL cases, which was 50% less than my cases with direct-bonded stock Damon System appliances.

After completing the evaluation, I compared the results with comparable patients I later treated with Insignia using stock Damon appliances. This second comparison assisted me in placing a value on the patient-specific customized torques of the customized Insignia SL appliance. The 41 customized Insignia SL cases in the evaluation finished in 22% shorter treatment time (13.3 months) than the next consecutive 41 cases using Insignia with stock Damon brackets that I treated in my private practice (16.1 months). The average number of appointments for the 41 Insignia stock Damon cases was 10.2 versus 8 appointments for the 41 customized Insignia SL cases.

In terms of quality, a subjective evaluation I grant you, I feel that my customized Insignia SL cases finish with quality that equals or exceeds my direct-bonded Damon System cases or my Insignia cases using stock Damon brackets yet in less time and with significantly less effort. I have felt confident enough with the customized Insignia case results to have shown them in presentations around the world and have been so pleased with the results that I now treat 75% of my patients with direct-bonded Damon System appliances, primarily those who start treatment in late mixed dentition, but for all those cases for which customized Insignia SL applies, it is now my appliance of choice.

This article highlights a few of the patients I treated in the clinical evaluation, demonstrating the quality of the results and efficiency of treatment.

By Medivance Instruments Ltd.

Abrasive treatment has long been discussed as a treatment in all areas of dentistry. With AquaCare, UK-based Velopex International has introduced a novel and contactless way to abrade and polish teeth and orthodontic appliances. The unit combines four powder cartridge systems with an easy-to-use multi-function handpiece—that can even double via the foot control as a dry handpiece. Among the many applications areas, orthodontists can use AquaCare for bonding orthodontic brackets.

The enamel of the tooth to be treated can be ‘etched’ to the exact size of the orthodontic bracket at the place of attachment. This is achieved by holding the cutting nozzle 2 mm above the surface of the tooth and gently moving it in a circular motion over the required area. This will result in a dry ‘etched’ surface, ready to accept the bonding agent.

The risk of saliva contamination is greatly reduced because the aluminium oxide dries the surrounding mucosa. The same technique can be used to clean the orthodontic brackets.

Therefore, AquaCare is a superior tool for incognito lingual brackets as it is able to reach difficult internal surfaces in order to clean and attach the brackets.

Easy bonding of orthodontic brackets

New abrasion technique
Orthodontic supplies market: Report predicts highest growth rate in Asia Pacific

**By DTI**

**PUNE, India:** While North America and Europe are expected to have accounted for the largest share of the regional segments in the global orthodontic supplies market in 2016, the Asia-Pacific market is projected to register the highest growth rate over the next five years, a new report by market specialist MarketsandMarkets has found.

According to the research firm, the forces driving this development are growing efforts to increase awareness of advanced orthodontic treatments in the region and a very large patient population with malocclusion and jaw disorders. In addition, growth is being stimulated through increasing disposable income, coupled with a growing middle class and the stronger focus of global orthodontic and dental companies on emerging Asia-Pacific countries.

Overall, the global orthodontic supplies market is expected to grow further at a compound annual growth rate of 8 per cent over the forecast period of 2016–2021 and is expected to reach US$471 billion by 2021.

Among the three major product categories, fixed braces, removable braces and orthodontic adhesives, the fixed braces segment is expected to have gained the largest share in the global orthodontic supplies market in 2016. According to the analysts, this is primarily attributed to the greater affordability (compared with removable braces) and increasing adoption of fixed braces among adolescents.

According to the market review, the major competitors in the orthodontic supplies segment are 3M, Align Technology, Danaher Corporation, Henry Schein, Dentsply Sirona, American Orthodontics, Rocky Mountain Orthodontics, G&H Orthodontics, Dentsaurum and TP Orthodontics.

The full report, titled Orthodontic Supplies Market by Removable & Fixed Braces (Brackets (Self Ligating, Lingual, Metal, Ceramic, Aesthetic), Archwire (Nickel Titanium, Stainless Steel), Ligature (Elastomeric, Wire), Anchorage Appliances, Adhesives), Patient—Forecast to 2021, can be purchased at the MarketsandMarkets website.

**Perfect Orthodontic Performance**

**POP expansion screws**

By Leone S.p.A.

The innovative and biomechanical orthodontic expansion screw POP is made of stainless steel and biomedicai polymer. The male screw is not in contact with the orthodontic acrylic resin; the function of the screw will not be influenced by the quality of the technical procedure and a non-compliant curing time.

Continuous expansion movement: the high pressure injection of the polymer allows the perfect copy of the male thread of the screw, thus ensuring a steady expansion transmission without the risk of undesired turning back in the mouth. The self-centring rectangular guides ensure a biomechanical and absolutely controlled symmetrical expansion. The flat shape of the guides and their flexibility allow the gradual release of the expansion with a physiological orthodontic movement. The flexibility of the screw allows the adjustment of any dental regress due to inconsistent use of the appliance by the patient, thus being very effective with holding devices following a rapid expansion treatment.

The high adaptability of the appliance enables a comfortable application in the mouth in the days following reactivation. Two embossed arrows on the body indicate the direction of opening. When using a colour of acrylic resin similar to the polymer body, a white arrow provided with the plastic placement tab may be easily applied to make the direction of activation visible.

The placement plastic tab, made of two pieces combined with a unique geometry, allows perfect protection of the holes from the acrylic resin during the packing procedure and facilitates the removal after the curing cycle. The screw body is available in five colours.

According to a recent market review, the fixed braces segment is expected to have gained the largest share in the global orthodontic supplies market in 2016.