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*A Bulletin Dealing With Issues For Dental Health Professionals*

## An Attachment Solution for Inadequate Space

Patients who wear removable partial dentures with metal clasps placed on anterior teeth will have their aesthetics compromised. Dental attachments have proven that they can provide better aesthetics, vertical and horizontal resiliency and universal stress relief for use where a resilient prosthesis is indicated. The extra-coronal attachment improves retention, which when worn can be easily replaced. Attachments are categorized as precision or semi-precision, inter-coronal or extra-coronal according to their location in relation to the abutment tooth. They can be rigid or resilient; this can be determined by the amount of movement allowed between the component parts. There are advantages and disadvantages as well as indications and contra-indications. Limited space for extra-coronal attachments is a serious complication in the design and fabrication of a dental attachment removable partial denture. There are many among the general public who have relatively short teeth that are of insufficient size to host the standard attachments manufactured by different companies. In a study "Limitations in the Use of Attachments in a Mediterranean Population", the occluso-gingival height of

159 potential abutment teeth from 50 Spanish patients was measured and compared to the sizes of intra-coronal and extra-coronal attachments from one manufacturer. Thirteen percent of the group showed smaller abutments than the smallest attachments available; more would have been able to host a large extra-coronal attachment. Just 35% of the group could only have accepted a small extra coronal attachment. The study's conclusion was that in some instances the space for retention and the attachments available in the market place would have to be evaluated carefully. One type of extra-coronal attachment most suited for minimal space is a plunger type attachment. There are a few manufactured for this very purpose that have an external dimple and an internal spring loaded mechanism. Generally there has been a decline in their usage simply because the spring would fail over time and the retentive dimple would stop working. The plunger type attachment is still a viable treatment modality since its redesign by the Bredent dental manufacturing company. Their version is called the **Stud Fixator** and it has a ceramic dimple for strength and the housing it rests in, is filled with **continued on page 2**

## A New and Disciplined Approach for Diagnostic Waxing

The use of diagnostic wax ups as a treatment modality has become increasingly important in the pre-treatment stages of dental restorations. The process helps eliminate most of the unforeseen negative outcomes. The visual concept of this technique increases patient acceptance and satisfaction. It virtually allows the patient to see their new look smile prior to fabrication in the laboratory. In the final analysis, patients and dental professionals must exchange ideas and conceptions clearly and concisely to create successful aesthetics. These wax ups are a vital communication tool for predictable results which allows careful evaluation of anterior guidance, cuspid rise and functionality. A vast majority of the population desire a brighter, cleaner and more attractive

smile because of media focus through various "extreme make over" television programs. Typically they are trying to correct chipped, unevenly spaced, stained, discoloured or even slightly crooked front teeth. Usually veneers or laminates can provide these individuals with a completely new looking smile with just a few appointments. Most often the pre-operative model is prepared and ivory wax is used to achieve the desired aesthetics. This process is time consuming and requires an experienced technologist to be able to create anything meaningful. Fortunately these issues have been addressed in a new product invented and produced by XPDent called ProWax veneers. **Continued on page 3**

**Attachment Solution for Inadequate Space cont'd...**



Milling in a rest seat for occlusal stop and reciprocation.



A guide plane must be made on the crowns to receive the male plunger.



Prepare a dimple .03 mm in depth and 1.5 to 2.0 mm above the ridge.

silicone which acts as a buffer to ensure durability and soft integration of the restoration. Because of this silicone filling, proper hygiene is established as opposed to the old spring loaded type which would trap bacteria and plaque rendering it useless. Simple plunger attachments provide only mechanical retention; therefore a rest seat that provides an occlusal stop and reciprocation must be built into the design of the restoration. When making the crowns make a guide plane into the crown surface which will receive the dimple or male plunger. Cast and finish the crowns and prepare a dimple with a #4 round bur 0.03 mm deep and 1.5 to 2.0 mm above the ridge. Block out the master model and design the partial denture. Duplicate and pour a refractory model. Wax the partial framework utilizing the **Stud Fixator** attachment to create a level support on the partial framework. After casting the partial framework, fit it to the crowns. Place the male plunger on the support and through the hole and engage only the ceramic tip in the dimple on the crown. The silicone should not be compressed. Using the DTK adhesive, resin bond the attachment directly to the metal cast framework. Set up the teeth and send it out for a try in. After clinical adjustments have been made cold cure acrylic is used to prepare the saddle areas, since heat

cure would have a detrimental effect on the silicone buffering material. Deflask the partial, remount and adjust as necessary. Finish and polish the restoration, ensuring that the male plunger functions effectively. Return it for insertion. Alternative applications for use are for telescopic bridges or partials utilizing a one piece casting or to provide additional mechanical retention for removable milled bar restorations for implants. The **Bredent Stud Fixator** is indicated for adverse clinical conditions such as limited space for extra-coronal attachments from loss of vertical dimension over time or where the supportive abutments are naturally short. **Source; Peter T Pontsa, RDT**  
**References:** (1) Y.C.Ka, Y.F. Shen, C.P. Chan. "Extra-coronal Resilient Attachments in Distal-extension Removable Partial Dentures." *Quintessence International* Vol. 31 Issue 5, Pages 311-317, 2000. (2) D.R. Burns, J.E. Ward, "Review of Attachments for Removable Partial Denture Design: Classification and Selection. *International Journal of Prosthodontics* 3:98 -102 1990. (3) Y. Goto, J.S. Brudick "Custom Precision Attachment Housing for Removable Partial Dentures" *Journal of Prosthetic Dentistry*. Vol. 88, Issue 1 pages 100-102 July 2002. (4) Paire/ Rustullet/ Anglada/ Salsench/ Gil "Limitations in the use of Attachments in the Mediteranian Population". *Quintessence International* Vol. 27, Issue 7 pages 469-472, 1996.

**Product Show Case; XPdent's ProWax Veneers**

The ProWax System has been designed for patients who want to show off their smiles and their perfect teeth. The system can be used for pressable ceramics, diagnostic wax ups, gold crowns, temporary crown and bridgework and guides for crown and bridge implant frames. Using this system, a dental technician can realise up to 70% time savings as opposed to waxing up from scratch. In addition to the labour savings, laboratories can rely on uniform quality

results for every case prepared using the ProWax System. Each veneer or occlusion pattern has a corresponding model making it easy to select the right pattern. They are numbered according to the Universal Tooth Numbering Code and consist of 100% ash free ivory wax which is especially important for pressable ceramics. **For your complimentary free samples of ProWax, call Dent-line of Canada at 1-800-250-5111.**



ProWax Anterior Veneer Assortment Kit.



Renfert's New Easy Clean Ultrasonic.

**Featured Product; Renfert's Easy Clean Ultrasonic**

The Easy Clean provides state of the art ultrasonic cleaning technology for all types of ultrasonic cleaning. This extremely easy to operate ultrasonic unit cleans items thoroughly using an operating frequency of 37 khz with excellent results. The electronic dial with LED bar display, indicates the power level, temperature and cleaning periods. Operating times are from 1-30 minutes

and temperatures are 30° to 80°C. The unit also has a degass function which ensures efficient degassing of the cleaning fluid, which translates into superior results. Various accessories and cleaning fluids are available and there is also a dry-run protection system which switches the unit off automatically. **For availability, warranty and pricing please contact our order desk at 1-800-250-5111.**

Attachment Solution for Inadequate Space cont'd...



The Cast Partial is designed, waxed and ready for investment.



The Partial Denture with attachment cradle.



Place the stud fixator in the cradle, engaging the dimple in the crown.



Bredent DTK Adhesive is used for metal to metal bonding.



Resin bond the attachment directory to the framework.



Set up the teeth and send it out for try-in.



Finish and polish, ensuring the plunger functions effectively.



The Partial denture is finished and ready for insertion.

A New and Disciplined Approach to Diagnostic Waxing, cont'd...



The pre-operative model is prepared.



The two central wax veneers are placed.



The completed diagnostic wax up is prepared using the ProWax veneers.



The ProWax Ivory Sculpting Wax is shaped like a tooth.

ProWax veneers and occlusions can be utilized for diagnostic wax ups, temporaries or pressable ceramics. These anatomically preformed wax patterns can realise up to a 70% time savings as opposed to waxing up traditionally. In addition to the labour savings, technologists and laboratories can benefit from the consistency of each case produced from this system. The wax used is of high quality 100% ash free ivory wax. An anterior assortment kit includes six upper anterior models and three lower anterior models. These are used as a guide for arrangement and shape of the diagnostic wax up. After a mould has been selected using one of the models, the appropriate veneers can be selected from the corresponding drawer in the kit. The same applies for the lower. The sculpting wax is made up of the same

high quality materials. When a co-ordinated treatment plan for a patient is determined, this system will become a viable technique. Patients who have peg shaped maxillary laterals, diastemas, short clinical crowns, excessive gingival display and orthodontic mal-occlusion can be helped with a orthodontic, periodontic and prosthodontic approach. Porcelain laminate veneers can be delivered after a diagnostic wax up using pressable ceramics. Diagnostic visualization of interdental spacing can be overcome with duplicated models sectioned stone teeth, full contour diagnostic wax ups and occlusal putty impressions. Another area the ProWax veneer technique can be utilised is in the fabrication of a screw retained implant supported wax pattern that enables the **Continued on page 4**



Each veneer pattern has a corresponding model to make selection easy.

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### About Our Organization...

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## New Disciplined Approach to Diagnostic Waxing, cont'd...

restorative team to predict the final outcome of the completed prosthesis. Aesthetics and function are equal concerns when restoring the anterior dentition. New ideas in restorative dentistry have developed better solutions through bonded porcelain veneers, which while looking good also support occlusal forces and masticatory function. The final treatment outcome greatly depends on the therapeutic approach that is approved whereby limiting dentin exposure and preserving enamel. The ProWax wax up technique provides a significant amount of diagnostic information and a visual aid in removal of tooth substrate from the preparation. The significance of the diagnostic wax up technique is vital to the completion, functionality and the durability of the restoration. The wax up can be a template for the final restoration because it is a 100% ash free wax, making it ideal for the pressable ceramics technique. Provisional restorations will be quick and easy to fabricate since the mould and

shape have already been created. By using a silicone putty matrix as a visual aid it is possible to provide for adequate tooth preparation. The ProWax technique is a powerful tool for communicating with patients, since they can see a three dimensional representation of their final restoration. **Source; Peter T Pontsa, RDT**

**References:** (1) L. Claman, M.A. Alfaro, A. Mercado, "An Interdisciplinary Approach for Improved Esthetics Results in the Anterior Maxilla", *Journal of Prosthetic Dentistry*, Vol. 89 Issue 1, page 1-5, January 2003. (2) N. Charmattayompol, S.X. Wong, "Diagnostic Management of Interdental Spacing", *Journal of Prosthetic Dentistry* Vol. 84, Issue 4, Page 467-469, October 2000. (3) P. Proussaefs, "A Maxillary Screw Retained Implant Supported Diagnostic Wax Pattern", *Journal of Prosthetic Dentistry*, Vol. 87, Issue 4, Page 403-406, April 2002. (4) Magne, Douglas, "Additive Contour of Porcelain Veneers; A Key Element in Enamel Preservation, Adhesion and Esthetics for Aging Dentition", *Journal of Adhesive Dentistry*, Vol. 1, Issue 1, page 81-92, 1999.

## Special Announcement: Bredent Training Seminar

Bredent held one of many dealer training seminars from April 3rd to 5th in Senden, Germany. The english speaking seminar was attended by representatives of Ardagh Dental Supply from Ireland, Bredent UK and Dent-Line of Canada. The agenda included theory and hands on training. On Monday the groups participated with instructors on the Thermo Press, a thermo plastic injection system; each attendee trimmed and polished a flexible partial. There were discussions on investments, new aggressive milling burs with cross cut and the swivel lock src attachments followed by a sumptuous lunch and dinner. Tuesday found the group studying super structures on implants, attachments and locking systems. Later attendees were involved in one piece castings and sky implants, white sky implants, smiling cone abutments and the 3D implant bar all of which fit the sky implant system.

On the final day participants were milling in the training lab, and introduced to opticast a pourable denture technique. It was a wonderful opportunity for dental dealers to learn about how products work and how Bredent's scientific research and development increases their knowledge base. A great deal was learned by all and we look forward to the next seminar!



## Trade News:

The seventh **Annual International Dental Congress** will be held on September 15th and 16th at a new location. This event location is at the Toronto Congress Centre on 650 Dixon Rd. Toronto. There will be free parking on site. Some of the highlights include international speakers, cocktail reception and lunch of IDC attendees on Friday. Be sure to attend this important technical event of the year. For further information phone 1-877-822-5840 or visit [www.internationaldentalcongress.com](http://www.internationaldentalcongress.com) **Denttechnica du Quebec** is the only trade

show for technicians in the province of Quebec. This important event will be held on October 27th and 28th. There will be international speakers, table clinics and lunch for the delegates. Please come and see Angela and Peter from Dent-Line at booth 25. We will be displaying many new and innovative products to help you save time and money at the laboratory. The location for this excellent venue will be at Hotel Mortagne, 1128 rue Nobel Boucherville QC. For further information contact Jean or Liette at 514-728-5352.