the day was finished by Dr. Za-karia Benstahar who answered the question “How to improve efficiency with passive self-ligating brackets?” In the end of the day, after the full day of lectures the delegates were invited to attend the cocktail reception that was held in Jumeirah Emirates Towers.

Dr. Andrey Tikhonov from Russia has opened the second day program of the 2nd MENA Symposium with his lecture “Damon System Truths versus Myths” during which he said that “Orthodontics is about changing people destiny, so it is not only about straightening teeth.” The lecture of Dr. Tikhonov was followed by Dr. Philippe Van Steenberghe on elastics and how important they are under the title “Early elastics and how important they are in the Damon System usage in their practices. Additionally, during the breaks in between the lectures, the participants could see an interactive display of the Damon System and also displayed Damon System umbrella products displayed in Ormco booth.

Moreover, the new addition to the 2 day agenda were hands-on courses on brackets positioning. The two hands-on courses were given by Dr. Stuart Frost and Dr. Dimitris Mavreas. During the courses the guests could practice on the Ormco typodonts and discover further the Damon System.

Orthodontics goes Digital with CEREC from Sirona

By Dr. AbdelAziz Yehia, UAE

I t finally happened... Since ILSA, 2015, when Sirona unveiled the CEREC Ortho Software, a Software uniquely designed to send accurate 3D full arch scans to World-Class providers like, and in coopera-
tion with Invisalign, 3M Inognito, Dolphin Software, and others... as well as the possibility to connecting to a Sirona laboratory, and the Dental Market has been waiting the release of this Software; with the Gulf (specifically United Arab Emirates) being no ex-
ception.

Now (since December, 2015) Dr. Amro Adel, General Manager of mrussia has opened the second day program of the 2nd MENA Symposium with his lecture “Damon System Truths versus Myths” during which he said that “Orthodontics is about changing people destiny, so it is not only about straightening teeth.” The lecture of Dr. Tikhonov was followed by Dr. Philippe Van Steenberghe on elastics and how important they are under the title “Early elastics and how important they are in the Damon System usage in their practices. Additionally, during the breaks in between the lectures, the participants could see an interactive display of the Damon System and also displayed Damon System umbrella products displayed in Ormco booth.

Moreover, the new addition to the 2 day agenda were hands-on courses on brackets positioning. The two hands-on courses were given by Dr. Stuart Frost and Dr. Dimitris Mavreas. During the courses the guests could practice on the Ormco typodonts and discover further the Damon System.

Orthodontics goes Digital with CEREC from Sirona

By Dr. AbdelAziz Yehia, UAE

It finally happened... Since ILSA, 2015, when Sirona unveiled the CEREC Ortho Software, a Software uniquely designed to send accurate 3D full arch scans to World-Class providers like, and in cooperation with Invisalign, 3M Inognito, Dolphin Software, and others... as well as the possibility to connecting to a Sirona laboratory, and the Dental Market has been waiting the release of this Software; with the Gulf (specifically United Arab Emirates) being no exception.

Now (since December, 2015) Dr. Amro Adel, General Manager of Sirona Dental System L.L.C (Dubai – U.A.E.) has officially announced the launch of the CEREC Ortho Software that can be supplied in combinations. First CEREC Ortho Training on 11th of December 2015.

By Dr. AbdelAziz Yehia, UAE

It finally happened... Since ILSA, 2015, when Sirona unveiled the CEREC Ortho Software, a Software uniquely designed to send accurate 3D full arch scans to World-Class providers like, and in cooperation with Invisalign, 3M Inognito, Dolphin Software, and others... as well as the possibility to connecting to a Sirona laboratory, and the Dental Market has been waiting the release of this Software; with the Gulf (specifically United Arab Emirates) being no exception.

Now (since December, 2015) Dr. Amro Adel, General Manager of Sirona Dental System L.L.C (Dubai – U.A.E.) has officially announced the launch of the CEREC Ortho Software that can be supplied in combinations. First CEREC Ortho Training on 11th of December 2015.

Orthodontics goes Digital with CEREC from Sirona

By Dr. AbdelAziz Yehia, UAE

It finally happened... Since ILSA, 2015, when Sirona unveiled the CEREC Ortho Software, a Software uniquely designed to send accurate 3D full arch scans to World-Class providers like, and in cooperation with Invisalign, 3M Inognito, Dolphin Software, and others... as well as the possibility to connecting to a Sirona laboratory, and the Dental Market has been waiting the release of this Software; with the Gulf (specifically United Arab Emirates) being no exception.

Now (since December, 2015) Dr. Amro Adel, General Manager of Sirona Dental System L.L.C (Dubai – U.A.E.) has officially announced the launch of the CEREC Ortho Software that can be supplied in combinations. First CEREC Ortho Training on 11th of December 2015.
The new imaging plate scanner XIOS Scan completes the intraoral family from Sirona. Whether you’re taking the first steps into the digital world or establishing or updating a fully digital practice, XIOS Scan and XIOS XG Sensors offer perfectly synchronized solutions for every-workflow. Enjoy every day. With Sirona.
Large diastema closure with Filtek™ Z350XT Universal Restorative

By SM

Female patient, 28 years old. Main complaint about the spacing between her teeth with complete rejection of orthodontic treatment and laminate veneers. Direct restoration was made using Filtek™ Z350XT Universal composite (Enamel and Dentine), Single Bond Universal adhesive, Sof-Lex™ finishing and polishing discs and interproximal finishing strips.

Fig. 1: Pre-operative view

Fig. 2: Pre-operative view with retracted lips

Fig. 3: Composite mock-up for the two centrals

Fig. 4: Palatal Matrix of Filtek™ Z350XT Universal Composite (Enamel A2) for upper left central

Fig. 5: Finished composite for upper right central using Enamel A2 and Dentine A2

Fig. 6: Palatal Matrix of Filtek™ Z350XT Universal Composite (Enamel A2) for upper right central

Fig. 7: Finished composite for upper right central using Enamel A2, Dentine A2

Fig. 8: Post-operative view for upper right and left centrals

Fig. 9: Repshaping of upper right and left laterals using Enamel A2 and Dentine A2

Fig. 10: Post-operative view of the case

About the Author

Dr. Mohamed Fouda Haridy
Associate Professor of Restorative Dentistry, Cairo University.
Head of Restorative Department of British University in Egypt (BUE)
Postoperative sensitivity. All dentists worry about it. No patient wants it. With Single Bond Universal Adhesive, you can virtually eliminate it whether you prefer a total-etch, self-etch or selective-etch technique. And for strength and esthetics anywhere in the mouth, use Filtek™ Z350 XT Universal Restorative. Then complete the restoration with Sof-Lex™ Spiral Finishing and Polishing Wheels, which adapt to all tooth surfaces.

It’s one simple system that’s as versatile as it is effective. At 3M, we simplify outcomes. Especially happiness. For you and your patients.

Let’s make happiness a clinical outcome

www.3MGulf.com/espe
Vintage LD… The Better Lithium Disilicate

**By SHOFU**

Vintage LD is an innovative lithium disilicate system from Shofu that offers you greater flexibility, more treatment options and aesthetic versatility for a variety of all-ceramic anterior and posterior restorations. A combination of three perfectly compatible components comprising of high strength lithium disilicate glass ceramic ingots in varying levels of translucency, a naturally shaded, opalescent silicate based veneering porcelain and a comprehensive range of low fusing fluorescent stains offers the choice of pressing, staining and highly aesthetic cut back or full build-up layering techniques.

Designed to fulfill the demanding aesthetic requisites of discerning dental professionals, Vintage LD exhibits outstanding shade stability even with multiple firings with virtually non-existent reaction layer for a faster, simpler and error-free fabrication cycle.

Available in sets or as refills to meet the individual needs of your lab.

---

**Beautifil Bulk**

A Smart approach to smarter dentistry

**By SHOFU**

Reduce chair time and your inventory too… with Beautifil BULK, the new generation bulk fill resin restorative developed for easier, faster and predictable posterior restoration. Formulated in 2 discrete viscosities to fulfill individual preferences, Beautifil BULK Flow, a flowable variant is ideal for dentin replacement and a sculptable Beautifil BULK restorative to restore to full contour. Excellent chameleon effect is achieved with just two shades (Restorative Universal and A shade) of Beautifil BULK restorative that blends in imperceptibly with surrounding tooth structure.

Developed with S-PRG filler technology, Beautifil BULK Gionner resins come with additional anti-plaque benefits and sustained fluoride release and recharge to protect against recurrent caries. Exceptionally high filler load with unique filler resin structure maximizes light penetration for optimum cure (Up to 4 mm) while lowering polymerization shrinkage stress.

---

**Contact Information**

SHOFU DENTAL ASIA-PACIFIC PTE. LTD.
10 Science Park Road #05-12 The Alpha
Singapore 117684
Tel: 8557772 Fax: 6563771421
Website: www.shofu.com.sg

---

**Register now for our free IMPLANTOLOGY COURSES!**
Splyce ID: Designing Bespoke Modern Wonder Clinics
Part III
(The Color White)

“Choosing the right white in itself is a job. There are unbelievable choices of white available to pick from…”

By Nijas Salim, UAE

There’s a lot of white at play in clinics. But it seems like we still can’t have enough. So what is with the color white I want to know?

That previous line almost plays out in my head like lyrics to a song. But that’s what I am asking Ranjit Prasad, the Principal Architect of Splyce. We know the obvious, white is the embodiment of cleanliness, of health and hygiene, the spick-and-span-germ-free hue, the sign that there is nothing sinister, however small in size, lurking, an RGB version of what you see is what you really get.

White has always been symbolic of purity and of freshness but Ranjit will tell you that despite white being a de facto color of use in the healthcare industry, white makes a massive design statement and its use has desired effects. White has the ability to expand the sense of space, and alter the experience of shapes. Though easy on the eye, it still needs utmost care, and this care is transformed into the assimilation of attributes of luxury. White is also quite relaxing and nourishing.

White really brings out the accents and suddenly accents get an elevated status. The warmth of wood or gold trimmings, they all finally get maximum exposure. White also brings artificial light sources into play, and the impact of the color of the light gets magnified. White helps natural light seeping in to get a magnificent glow. So much more can be done with finishes when coupled with white. I also like how white accentuates minute details and curves, thus allowing the care, thought, and stand out details of our design to be really seen and experienced.

And suddenly I remember the importance of the color white, the understated king, the one that all colors unite to become. I remember that Krzysztof Kieślowski film, the one that imitates life, the one that is filled with humor, is called, White. Splyce Interior Designs is a boutique agency driven to meet satisfactions of a clientele that know the value of good design and has incorporated that into their own philosophy. Splyce believes its raison d’être is creating stunning designs that exceed client expectations.

“Choosing the right white in itself is a job. There are unbelievable choices of white available to pick from.”
Predictable Endo 102: Why warm and soft is so good
System ‘S’ for injectable or carrier-based GP

By John J. Stropko, DDS

The author has been in private practice and a continuing education provider for the past 50 years. The first half was spent providing endodontics in a specialty practice and the second half in a specialty practice limited to endodontics. On the road to predictability, it became apparent there was a relationship between root canal treatment, periodontal status, prosthetic considerations and endodontic procedural variables. Each operator has to decide what steps for a more predictable outcome they are willing to trust another to do. This article is an attempt to share some “secrets of success” and perhaps serve as a checklist for a system that works in the attempt to achieve predictability of endodontic treatment.

During the earlier years of the past century, several techniques were devised for the obturation of the canal system after removal of the diseased pulp, or necrotic tissue. Some of the most popular were silver points, lateral condensation of gutta-percha (GP), Sargenti paste and chloro- and choloropercha. Currently there are seven techniques that utilize gutta-percha as the obturation material of choice:

1) Single cone
2) Lateral condensation
3) Compression obturation
4) Vertical compaction of warm GP
5) Carrier-based (Thermafil) System “A”
6) Cone sealer (Thermafil)
7) Injection of thermo-plasticized GP (often referred to as “squirtgun” using a Calamus or Obtura unit)

Mechanically assisted instrumentation (Motor-Mac) In 1967, Dr. Herb Schilder, often referred to as “the father of modern endodontics,” introduced the concept of filling the root canals in three dimensions.” The Schilder Technique involves making a choice of techniques. More recent studies have documented some previous obturation materials that were popular, but some form of GP still remains the most acceptable and widely used. The purpose of this article is to share a simple, six-step protocol (System “S”) in a straightforward manner, to achieve predictability of endodontic treatment for the benefit of the patient.

There are six important components to the System “S” protocol:
1) Proper shaping with patency
2) Adequate cleaning, disinfection and drying
3) Delivery of pre-warmed GP to apex (Calamus/Obtura)
4) Coronal seal for the rest of the system
5) Respect for the endo-pro root relationship
6) Use of the surgical operating microscope (SOM) for the entire endo-pro root relationship

The author believes that as long as the gutta-percha is introduced to the apical third of the canal system, pre-warmed and pre-softened, the deformation and adaptation to the canal walls is more predictable, resulting in a better seal that is significantly more “sealer-dependent.” It has been shown that the pre-warmed techniques (Obtura or Calamus) provide a better seal than lateral condensation.2

Due to the lack of deformability in root canal temperature, the technician utilizing nonsol- gened GP are more “sealer-dependent.” The two most popular thermoplastic obturation techniques are the “carrier-based” (e.g., Thermafil) and “direct injection” (e.g., Calamus/Obtura).

The pros and cons of each will be discussed, but regardless of the technique used, the shape of the prepared canal system is of utmost importance and must be discussed.

Access and shaping the canal system

In the early ‘70s, Schilder clearly stated the requirements for the proper shape using GP to achieve three-dimensional obtura- tion of the canal system:
1) The root canal preparation should develop a continuously tapering cone shape.
2) It should have decreasing cross-sectional diameters at every point apically and increas- ing at each point as the access cavity is approached.
3) It should have multiple planes, which introduces the concept of “flow.”
4) The access should not be transported.
5) The apical opening should be kept as small as practical in all cases.

There were several other requirements that were clinically de- finitive. Following are a few of them: After placement of the rubber dam, appropriate access is made. Unless the access is large enough for adequate vi- sibility, appropriate instrumentation may be compromised and canals missed. A perfect example is a maxillary first molar; if the access is made as though there was an MB2, it is amazing how many times an MB2 is found. A general rule of thumb is, if you access for it, you are more likely to find it. A proper access will also facilitate the cre- ation of the continuously tapering shape of the canal, necessary for the warm GP technique. Occasionally after caries or old restorations are removed, a “pre-endodontic” restoration may be required to control and maintain a sterile environment until the endodontic treatment is complete. This can usually be accomplished using a bonded composite technique. Shaping should be confined to the anatomy of canal system, fol- lowing the natural curvatures. Instrumentation beyond the apex is unnecessary and may needlessly enlarge and deform the apical foramen.4

Using the Schilder protocol to achieve the desired shape of the canal system was a time-con- suming process. It involved the tedious use of pre-curved files and reamers to follow the anatomic curvatures of the canal. Other requirements that caused some controversy flared (and still does), besides the size of the ac- cess opening, was the need to keep the apical foramen as small as possible, and to maintain pa- tency throughout the entire process. The majority of more recently published research and clinical studies have confirmed the rational for an appropriate access and correct shaping. In the early 1990s, technology brought about the introduction of rotary instruments, reliev- ing the operator of considerable time spent creating an accept- able shape. The ProFile rotary bur (Triku Dental) with 0.06 taper was introduced to the profession. Creating the shape necessary for the success of the warm obturation techniques was made easier and faster.

By the beginning of this cen- tury, numerous designs gradu- ally evolved utilizing varying tapers, active or passive cutting blades, etc. (Fig. 1). At first, the biggest problem with the rotary files was breakage during use. But modern nickel titanium (NiTi) metallurgy technology has developed more, and more dependable, rotary files. As a result, today the separation of a rotary instrument during use is of virtually little or no concern. It has also been shown that prop- er shape permits more through irrigation and the removal of significantly more debris from the prepared canal system. Disinfecting irrigation should be used between each instru- ment during the entire shaping process and patency continually maintained with NiTi files. Note the anesthetic syringes on a heating pad in the background.

Fig. 1. Typical rotaries, one of several popular brands, effective. (Provided by John J. Stropko, DDS, unless other- wise noted)

Fig. 2. NaOCl irrigating syringes can be warmed in a “tsunami effect,” using a heating pad. Note the anesthetic syringes on a heating pad in the background.

Fig. 3. The Endo Activator is used for the ‘tsunami effect’ for cleaning canals.

Fig. 4. The canal system can be very complicated.

Fig. 5. Set of three Endo Irrigators with various 25-gauge tips best for use, arrow points to the dedicated ‘air-only,’ sin- gle-button DCS syringe.

ADA CERP® | Continuing Education | Continuing Education Program
CAPmec designates this activity for 2 continuing education credits.
must be notched or sidevented (arrows).

Fig. 6. When drying canals with air, needles

press all water from the line first (Fig. 5). Next, with a 27- or 50-gauge or sidevented neddle (Monject, fit-

ted to the Stroppo Irrigator and heat as neces-

sary, to easily dry the canal system (Fig. 6). Constant

note: It is essen-

tial to regulate the flow of air as it is very easy to create the flow necessary for thorough air drying of the canal.

On occasion, one has to direct the air to a sensitive area on oneself or herself to be sure the air is even flowing. Just watch-
ing the evaporation that occurs within the canal while using the SOM, is enough to convince any operator that there is indeed a flow of air.

On occasion, the maxillary canal system will have the DB or MB canal system connected to the palatal system. These “surpris-
es” are important to be aware of, before obturation of the canal system, especially when using either carriers or injectable GP.

Drying canals with F4+H4+O4

The canals are flushed with 95 percent ethanol (Everestech, available at local liquor store), agitation of the fluids are initi-

ated with an activator for the tsunami effect, then Be-irrigated with the 95 percent ethanolic, and then Be-vacu-

ipated with the capul-

lary tip. The canal(s) are then heat dried by using a Stroppo I-

rigator on a dedicated, air-only syringe (DCS), but if a three-way syringe is used, be sure to ex-


complicated and does join at some point (Figs. 4a,b).

There are occasions, especially in lower molars, where the mul-

tiple root canal system unexpectedly joins with the distal root canal system.

On occasion, the maxillary canal system will have the DB or MB canal system connected to the palatal system. These “surpris-
es” are important to be aware of, before obturation of the canal system, especially when using either carriers or injectable GP.

Fig. 6a. A furcal perforation in the distal root of a mandibular first molar.

Fig. 6b. Canal filled just apical to furcal perforation.

Fig. 6c. MTA placed to repair the perforation. (Photo/Courtesy of Dentsply Tulsa Dental Specialties)

is complicated and does join at some point (Figs. 4a,b).

There are occasions, especially in lower molars, where the mul-

tiple root canal system unexpectedly joins with the distal root canal system.

On occasion, the maxillary canal system will have the DB or MB canal system connected to the palatal system. These “surpris-
es” are important to be aware of, before obturation of the canal system, especially when using either carriers or injectable GP.

Drying canals with F4+H4+O4

The canals are flushed with 95 percent ethanol (Everestech, available at local liquor store), agitation of the fluids are initi-

ated with an activator for the tsunami effect, then Be-irrigated with the 95 percent ethanolic, and then Be-vacu-

ipated with the capul-

lary tip. The canal(s) are then heat dried by using a Stroppo I-

rigator on a dedicated, air-only syringe (DCS), but if a three-way syringe is used, be sure to ex-


complicated and does join at some point (Figs. 4a,b).

There are occasions, especially in lower molars, where the mul-

It is also easy to observe how differ-

ently the Kerr Pulp Canal Sealer EWT (SybronEndo) acts when the canal is in fact not just blotted. After blotting with a pa-

per point, the sealer tends to act like a drop of oil placed on the surface of the canal wall. But when the sur-

face is dried, using alcohol and air as described above, the sealer readily spreads onto the canal wall, much like a coat of paint. The complete dryness of the ca-

nal to the desired working length

is checked with a clean absorb-

ent point that fits to length. Are not sealer-dependent and gives the operator an excellent chance to recheck the working length and dryness of the canal. Any sealer (Kerr EWT, Roth, AH Plus, etc.) can be used as long as the heat of the warm GP does not initiate a flash set.

The end 5 mm of a sterile paper point is coated with the sealer of choice and placed into the canal to the working length.

The user chooses Pulp Canal Sealer EWT, mixed per usual di-

turgers, but a little “on the thin-

side.” Using short, rapid apical

cuts, the walls of the canal system are completely coated with sealer. The use of the SOM is a great aid for observing when the coating of the canal wall by the sealer is complete. As there can be a sterile absorbent point is used, in the same manner, to remove any excess sealer that may remain.

Depending on the amount of sealer placed at the beginning, more than one absorbent point may be necessary to get the “blotchy appearance” on the final point (Fig. 8). Only a thin coat of sealer is necessary for lubri-

cation, so very little remains on the walls of the canal (Fig. 9). One of the most common mis-

takes, made at first, is using too much sealer. When this hap-

pens, the excess sealer will be extruded back into the cham-

ber, or apically when the warm GP is placed. In some cases, the GP may be prevented from completing its desired “bend” apically. Typically, only one or two points are normally needed once the operator achieves pro-


cess to reactivate the plunger and

alcohol are added to the GP, and the collar is pressed un-

til the initial GP is extruded and then the collar is released. The slight amount of GP at the tip is removed.

The needle is then placed into the canal apically, and in a controlled manner (Figs. 10a–c). When a post space is required, the GP can be injected to any level in the canal, but it is bet-

ter to obturate the entire canal first, so unexpected coronal GP in the canal won’t be missed.

Injection of thermo-plasti-

cized GP with a Calamus or Obtura

After using the Obtura for more than a decade, I have been using thermo-plasti-

cized GP obturation, the author switched to the Calamus when it was introduced on the market many years ago. After thousands of canals were obturated with the 95 percent, several advantages were noted when comparing the two units (Table 1).

Both units are available with a sin-

alized tip, or a dual combination

be added to the repair in a very controlled manner (Figs. 10a–c). When a post space is required, the GP can be injected to any level in the canal, but it is better to obturate the entire canal first, so unexpected coronal GP in the canal won’t be missed.

Injection of thermo-plasti-

cized GP with a Calamus or Obtura

After using the Obtura for more than a decade, I have been using thermo-plasti-

cized GP obturation, the author switched to the Calamus when it was introduced on the market many years ago. After thousands of canals were obturated with the 95 percent, several advantages were noted when comparing the two units (Table 1).

Both units are available with a sin-

alized tip, or a dual combination

be added to the repair in a very controlled manner (Figs. 10a–c). When a post space is required, the GP can be injected to any level in the canal, but it is better to obturate the entire canal first, so unexpected coronal GP in the canal won’t be missed.

Injection of thermo-plasti-

cized GP with a Calamus or Obtura

After using the Obtura for more than a decade, I have been using thermo-plasti-

cized GP obturation, the author switched to the Calamus when it was introduced on the market many years ago. After thousands of canals were obturated with the 95 percent, several advantages were noted when comparing the two units (Table 1).

Both units are available with a sin-

alized tip, or a dual combination

be added to the repair in a very controlled manner (Figs. 10a–c). When a post space is required, the GP can be injected to any level in the canal, but it is better to obturate the entire canal first, so unexpected coronal GP in the canal won’t be missed.

Injection of thermo-plasti-

cized GP with a Calamus or Obtura

After using the Obtura for more than a decade, I have been using thermo-plasti-

cized GP obturation, the author switched to the Calamus when it was introduced on the market many years ago. After thousands of canals were obturated with the 95 percent, several advantages were noted when comparing the two units (Table 1).

Both units are available with a sin-

alized tip, or a dual combination

be added to the repair in a very controlled manner (Figs. 10a–c). When a post space is required, the GP can be injected to any level in the canal, but it is better to obturate the entire canal first, so unexpected coronal GP in the canal won’t be missed.

Injection of thermo-plasti-

cized GP with a Calamus or Obtura

After using the Obtura for more than a decade, I have been using thermo-plasti-

cized GP obturation, the author switched to the Calamus when it was introduced on the market many years ago. After thousands of canals were obturated with the 95 percent, several advantages were noted when comparing the two units (Table 1).

Both units are available with a sin-

alized tip, or a dual combination

be added to the repair in a very controlled manner (Figs. 10a–c). When a post space is required, the GP can be injected to any level in the canal, but it is better to obturate the entire canal first, so unexpected coronal GP in the canal won’t be missed.

Injection of thermo-plasti-

cized GP with a Calamus or Obtura

After using the Obtura for more than a decade, I have been using thermo-plasti-

cized GP obturation, the author switched to the Calamus when it was introduced on the market many years ago. After thousands of canals were obturated with the 95 percent, several advantages were noted when comparing the two units (Table 1).

Both units are available with a sin-

alized tip, or a dual combination

be added to the repair in a very controlled manner (Figs. 10a–c). When a post space is required, the GP can be injected to any level in the canal, but it is better to obturate the entire canal first, so unexpected coronal GP in the canal won’t be missed.
Table 1. A comparison of thermo-plasticized GP obturation with Calamus vs. Obtura.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Obtura</th>
<th>Calamus</th>
</tr>
</thead>
</table>
| 1) Simultaneous delivery of all the canal system and there was no excess material extruded would.
| 2) No vertical over-triduc beyond the apical termi-| 3) Small amount of sealer is applied to the canal walls with a paper point (pistachio drop) into the shaped canal. If the canal is not dry, excessive binding can occur that will prematurely cool the advancing wave of GP, resulting in a "pigtail" of GP extruded into the PA area. The same will occur with excess sealer, and it will extrude along with the GP. The carriers are placed singly into the orifice and the correct size chosen, and the cores allowed to heat to the proper temperature. The small plastic, and all Gatu-core carriers, are heated on the size corresponding to the carrier length. So size 50 to 60 Thermafil Plus heated with the second setting (to the 98 °C, 25 second), size 70 or larger, the third setting (44 to 46 seconds). The carriers can be set in the canal, with the remaining length and the time setting for the larger carrier is test-critical, as long as they are heated for at least 40 seconds. Insertion of the heated carrier is slow and deliberate; you need to allow the excess material to be vented coronally. Insertion rates are 2 to 3 mm per second, which
|
| 4) Barrier protection easy to place | Barrier protection easy to place |
| 5) Less patient discomfort upon injection | Less patient discomfort upon injection |
| 6) Proper "squeeze" a longer learning curve | Proper "squeeze" a longer learning curve |
| 7) Can easily be rotated for ergonomics | Can easily be rotated for ergonomics |
| 8) Hand fatigue can occur | Hand fatigue can occur |
| 9) Proper "squeeze" a longer learning curve | Proper "squeeze" a longer learning curve |
| 10) More time consuming to clean | More time consuming to clean |

The resistance it encounters is a function of the file/carrier being inserted, the size of the canal; the greater the curvature, the greater the distortion and the greater the resistance (and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the resistance (and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the resistance (and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the resistance (and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the resistance (and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater the distortion of the file/carrier being inserted, the greater the distortion and the greater
Kenneth R. K. Johnstone

A good example of an easy-to-use temporary is auto-cure Tenure (Ultradent and Core Poste (Denmat)). CaOH (Ulbrach by Ultradent) is injected into the canal system and covered with a sterile cotton pellet (Fig. 19a). Then Tenure is used to condition the access opening (Fig. 19b). After a few minutes, the auto-cure Core Poste is set completely, the occlusion is ready for any adjustments, to make sure there are no interferences left to irritate the tooth between visits.

On occasion, a patient is unable to keep the appointed return visit and may have to delay his or her return visit for weeks or months (Fig. 18a,b). There may be an important change of events in his or her life, or the doctor may also have to change the scheduled visit. If a temporary is placed, such as Cavit, IRM or Tempcrown, all control of the bacteriological environment in the canal system is lost and the patient may not return for a longer time in a timely fashion.

Who would be better to control who should do the actual root-end obturation following endodontic therapy than the “endo-doer,” while the case is isolated with a rubber dam in place? As Dr. Demy Southard of Tulsa, Okla., commented about 15 years ago, “When we slap in Cavit and turn our heads, any lose core paste...”

The post space must always be adjusted to fit the post size (volume), the apical size (diameter) being the determining factor. These techniques are easily predictable for achieving excellent obturation, if all is done as described.

The “endo-doer” post space protocol is to fill the entire canal system, it is self-defeating to do a post job in the apical half of the canal system and then fill the coronal half of the canal system. To completely fill the canal system requires a longer treatment time, but the coronal half of the procedure is not going to be very predictable with the obturation of mass. These techniques are easily predictable for achieving excellent obturation, if all is done as described.

Definitely, mass size (volume), the apical size (diameter) being the determining factor. These techniques are easily predictable for achieving excellent obturation, if all is done as described. If all is done as described, achieving excellent obturation is easily predictable.

Respect for the periapical tissue.

Fig. 19a. CaOH injected to fill canal system and covered with a sterile cotton pellet.

Fig. 19b. Core paste is placed to seal the access opening.

A bounded temporary that has been in place for three months without leakage.

Another important consideration for coronal restorations is the necessity of a post for retention. It is worth repeating, “A post is only indicated if retention of the core is inadequate without it. Posts are only indicated when needed for retention.”

The post space must never be shaped to fit the post. Instead, the post must be shaped to fit the existing post space.” The more radicular substance removal, the more predictable the outcome. Posts never strengthen a tooth. Conservation of the radicular substance following core buildups is to be considered when accessing and shaping the canal system. Only enough tooth substance should be removed to achieve vision and desired shape needed to be completely disinfected, clean and obturate the entire canal system.

In our profession, the correct shape may be difficult if not impossible to achieve. Likewise, if we compromise the shape, the cleaning and obturation of the root-end will also not be as complete as desired for predictability. The author is amicus by anyone who is interested in keeping the access shape and shaping in the name of tooth conservation. What good do all that tooth structure do if the tooth is fractured, the more it flexes, the more micro-leakage increases and it becomes only a matter of time between the tooth fails. The canal system can be contaminated due to micro leakage, fracture due to lack of radicular strength, the crown/post/core can break or come open. If a restorations is placed, entirely based on the retention of the foundation retention, it is not an issue of whether the restoration will fail, it is a matter of when it will fail. It is critical that a minimal circumferential ferrule of 2 mm be established for retention of the restoration. A biological retention of approximately 2 mm is required between the osseous crest and the cervical margin of the restoration. Therefore, a minimum total of 5.5 mm is necessary between the intended cervical margin of the restoration and the osseous crest.

The FibreKor post has a wide selection of posts with good re- tention and are easy to use.其长度为20KF，它是一个非常适合作为20KF的尺寸。大约15年后，当我们在Cavit和转动我们的头，任何这些技巧都可以是容易预测的。这些技术都是获得良好的封装，如果都是做出如描述的。

结果对于根尖组织。

图19a。CaOH注射到充填根尖系统并覆盖一层无菌棉球。

图19b。固化蜡用来封堵根管口。

在被固定3个月的长期无泄漏的临时固位体。

另一种重要考虑事项为保持冠部结构的必要性是需要一个后方的必要性。值得重复，一个“桩”只在核心的保持性不足时是必要的，如果它没有被需要的。后方要只在需要时被使用。

应该避免将后部只被用于形状。当桩不被有用的时，为了保持，桩的边界必须被改型。

桩应当总是被调整到与桩相匹配的。

桩应该只有被用于保持圆形和桩的长度和直径，它保持了一个桩的形状和直径，是决定性的因素。这些技术是容易预测的。如果都如描述的。

平的中层组织。

图19。纤维Kor桩（Pentron）有一个非常适合作为20KF的尺寸（图20）。1.125毫米（六面椎形柱点在轴向）固定大多的中层组织。

对导管的形状和尺寸的考虑，如果导管的形状不被预测到，那么导管的形状和尺寸是被选择的。

桩空间不能被改变，它预测到的形状。注意：桩的空间应当被填充，以防止桩的接触。

桩应当被总是调整到与桩相匹配的。
Beverly Hills Formula - Over 20 Years Perfecting the Business of Smiling

By Chris Dodd, CEO Beverly Hills Formula

Manufactured in the United States, Beverly Hills Formula ranges are rapidly becoming the go-to whitening products, with many people opting to use these safe at-home whitening toothpastes over harsh and abrasive treatments. The company is constantly expanding its range and endodontics business is a whitening toothpaste to suit all preferences. With over 20 years of experience, the company, based in Ireland, has grown considerably in the past few years. In 2015 Nielsen CheckOut Magazine named Beverly Hills Formula as one of the top five oral care brands. This is an appreciable achievement when one takes into consideration the vast number of whitening toothpastes available on the market today.

The success of Beverly Hills Formula comes down to a number of factors:
- The company’s range of whitening products is safe to use at home.
- The company has ensured that their products are as effective as possible, and have proved themselves as leaders in expert stain removal.
- Launched in 2012, the Perfect White Range has been viewed as a revolutionary way of achieving a whiter brighter smile. Following on from this, the company introduced Perfect White Black in 2015, also the first of its kind. The ‘shake to activate’ charcoal mouthwash keeps breath fresh for up to 12 hours, whilst removing stains. Perfect White Gold toothpaste, containing real gold particles was launched later that year. Both of these products have seen considerable success in the market.

2016 will be a huge year for Beverly Hills Formula, with the company planning on introducing an expert whitening product. Perfect White Expert Toothpaste, containing effective and safe levels of peroxide, will offer a high performance whitening boost. As well as this, the company introduced Perfect White Black Sensitive, the first charcoal toothpaste for sensitive teeth. The brand will also launch a charcoal dental floss and

...
Tetric® N-Ceram Bulk Fill

The nano-optimized 4-mm composite

Discover the new time-saving composite

4 mm to success

• Bulk filling is possible due to Ivocerin®, the patented light initiator
• Special filler technology ensures low shrinkage stress
• Esthetic results are achieved quickly and efficiently in the posterior region

www.ivoclarvivadent.com
Ivoclar Vivadent AG
Bendererstr. 2 | 9494 Schaan | Liechtenstein | Tel.: +423 235 35 35 | Fax: +423 235 33 60

ivoclar vivadent
passion vision innovation
In 2015, a study conducted in the US found that Beverly Hills Formula stain removal products had the lowest abrasion levels on the market. The independent study found that Beverly Hills Formula whitening products have abrasivity levels as low as 89, when compared with some leading stain removal products on the market which scored as high as 186. It is important to note that although there are many leading whitening toothpastes on the market, many of these contain extremely high abrasion levels, which will strip away at the enamel over time. This can cause a range of problems, including increased sensitivity to hot and cold products, as well as causing teeth to appear yellow over time - quite the opposite function of a whitening toothpaste! It is important that patients are well informed of the dangers of using toothpaste which contain high abrasion levels, which generally will do more harm than good to ones teeth. Beverly Hills Formula is continuously researching ways of keeping abrasive levels at a minimum, whilst obtaining the maximum whitening effect.

Whilst it is extremely important to keep abrasion levels at a minimum, it is also important to keep abrasion levels, which will strip away at the enamel over time. This can cause a range of problems, including increased sensitivity to hot and cold products, as well as causing teeth to appear yellow over time - quite the opposite function of a whitening toothpaste. It is important that patients are well informed of the dangers of using toothpaste which contain high abrasion levels, which generally will do more harm than good to ones teeth. Beverly Hills Formula is continuously researching ways of keeping abrasive levels at a minimum, whilst obtaining the maximum whitening effect.

The company has long proven themselves as fore runners in expert at-home teeth whitening. By continuously researching cutting edge methods, the Beverly Hills Formula brand has ensured that they are constantly ahead of their competitors.

Teeth and gum sensitivity effects over 50% of adults

By Jordan

Sensitivity is a growing oral care health concern and preventing sensitivity starts by keeping the teeth enamel strong & healthy. Sensitivity is a common oral health concern influencing purchase. Consumers want products that work well but are also gentle to their teeth enamel and gums.

Many people suffer from sensitive teeth and it can start at any time. It is more common in people aged between 20 and 40, although it can affect people in their early teens and when they are over 70. Women are more likely to be affected than men.

If sensitivity effects so many people why are they not buying more “sensitive” oral care products?

Research tells us that most consumers, as many as 90%, find it difficult to choose products more attractive and readily available with clear and easy to understand information. In 2014 there was a rise in the number of launches with enamel focus.

References
1. 2012 and Mintel Oxygen, Consumer Dan Charts, Oral Hygiene, March
2. TNS Gallup, Needscope Sweden & Norway, 2014
3. www.dentalhealth.org
4. Norm research, Norway 402 interviews

Contact Information
For more information on Beverly Hills Formula products please call +353 1842 6611, email info@beverlyhillsformula.com or visit www.beverlyhillsformula.com.
FDI and Royal Philips sign global agreement to promote the importance of oral health

By Philips

GENEVA, Switzerland: On the occasion of World Dental Federation (FDI) World Oral Health Day (WOHD) 2016, Royal Philips, the world’s leading health technology company, and FDI, the major international federation of national dental associations, dental student associations and other groups, organized a variety of global events.

“For Philips, the FDI World Oral Health Federation is a great partner,” said Egbert van Acht, CEO, Philips Health & Wellness, “increasing education around the importance of looking after oral health is one of our key goals. We are committed to bringing meaningful innovation to address global societal needs. WOHD allows us to engage and encourage people to commit not only to their oral health, but also to systemic health awareness,” said FDI President, Dr. Patrick Hescot. “World Oral Health Day is an opportunity to position oral health where it belongs: at the heart of wellbeing and quality of life.”


Humble Brush: Charitable and eco-friendly approach to global oral care

By Kristin Hübner, DTI

STOCKHOLM, Sweden: Considering the more than two billion plastic toothbrushes that end up in landfills every year, wouldn’t anyone rather opt for an eco-friendly and sustainable alternative toothbrush, provided it has the same durability and bristle strength that comes the good news: there is an innovative approach to making a change.

“The donated toothbrushes go to children in need as part of a comprehensive preventive school programme. It is imperative that children living in underprivileged areas where there is no option for dental treatment receive the means to prevent oral disease,” Abdayem stressed.

By Philips

GENEVA, Switzerland: On the occasion of World Dental Federation (FDI) World Oral Health Day (WOHD) 2016, Royal Philips, the world’s leading health technology company, and FDI, the major international federation of national dental associations, dental student associations and other groups, organized a variety of global events.

“For Philips, the FDI World Oral Health Federation is a great partner,” said Egbert van Acht, CEO, Philips Health & Wellness, “increasing education around the importance of looking after oral health is one of our key goals. We are committed to bringing meaningful innovation to address global societal needs. WOHD allows us to engage and encourage people to commit not only to their oral health, but also to systemic health awareness,” said FDI President, Dr. Patrick Hescot. “World Oral Health Day is an opportunity to position oral health where it belongs: at the heart of wellbeing and quality of life.”


Humble Brush: Charitable and eco-friendly approach to global oral care

By Kristin Hübner, DTI

STOCKHOLM, Sweden: Considering the more than two billion plastic toothbrushes that end up in landfills every year, wouldn’t anyone rather opt for an eco-friendly and sustainable alternative toothbrush, provided it has the same durability and bristle strength that comes the good news: there is an innovative approach to making a change.

“The donated toothbrushes go to children in need as part of a comprehensive preventive school programme. It is imperative that children living in underprivileged areas where there is no option for dental treatment receive the means to prevent oral disease,” Abdayem stressed.

Humble Brush's bamboo toothbrushes are available in adult and child sizes. For every Humble Brush sold, the company donates a toothbrush or alternative oral care to people in need. (Photograph: Humble Brush)
A good option for the lifelike recreation of gingival tissue

The flawless reconstruction of gingival tissue requires sound teamwork as well as excellent materials and exceptional skill. Layering with the light-curing laboratory composite SR Nexco takes this procedure to a new level.

By Dr. Patrice Margossian, Marseille, & Pierre Andrieu, France

Careful planning is indispensable in the treatment of an edentulous jaw with implant-supported restorations. The axes and positions of the implants must correspond to the given biological, mechanical and esthetic conditions. In situations where severe bone recession has occurred, the work of the dental team will involve not only the reconstruction of dental but also of gingival tissue. The dentogingival complex must primarily fulfill two aspects: function (chewing and speaking) and esthetics (alignment of the teeth and gums and lip support).

Clinical case presentation

When the 57-year-old female patient presented to our practice her teeth and the related bone structure were in very poor condition (Figs 1 and 2). Numerous teeth were missing in both the upper and lower jaw. Furthermore, the upper jaw showed considerable bone and gingival resorption. The patient wished to have fixed teeth again and regain an attractive appearance. Due to the extensive damage that had occurred, the complete restoration of both jaws with implants was indicated.

Surgical phase

As a result of sufficient bone structure in the lower jaw, this part of the mouth could be restored at once with four immediately loadable implants. During the reconstructive phase, the upper jaw had to be treated with a provisional removable denture due to the atrophied jaw ridge. The tooth extractions in the upper and lower jaw took place during one day. At the same time, the four lower jaw implants were inserted and loaded. An immediate denture was placed in the upper jaw.

During the osseointegration period of the mandibular implants, the bones in the upper jaw were reconstructed. The maxillary sinus and the jaw ridge were augmented in one appointment. At the next appointment, ten implants were placed according to the treatment plan. Six months after this intervention, the implants were exposed. As a result of a well-planned soft tissue management strategy, firm keratinized tissue had formed in adequate form. The permanent restorations for the upper and lower jaw were fabricated two months later (Figs. 5 and 4).

Prosthetic phase

The determination of the occlusal plane and the ideal incisal edges is fundamental in order to achieve good esthetics. The facial axes and the visual image of the patient helped in this process. The frontal view (Figs. 5a and b) was recorded with the Ditramax system. The esthetic facial axes were determined from a frontal view (Fig. 6).

The denture was set up with pre-fabricated teeth (SR Phonares II). The application of various translucent materials imparted the prosthetic gingiva with the desired depth effects (Fig. 9). The application of the colour saturated intensive Gingiva materials (SR Nexco® Paste Intensive Gingiva) was crucial for obtaining a lifelike and esthetically pleasing gingiva (Fig. 10). The white and pink esthetics have been optimally imitated (Fig. 11).

“When the upper and lower jaw have to be restored, it is important to start with the upper jaw. Alternatively, both jaws can be restored simultaneously.”

> Page 18
Hamdan Bin Mohammed College of Dental Medicine, is the first college established under the Mohammed Bin Rashid University of Medicine and Health Sciences (MBRU) at Dubai Healthcare City. The postgraduate college offers residents a three year Master of Science degree in the following six specializations:

Endodontics | Oral Surgery | Orthodontics | Paediatric Dentistry | Periodontology | Prosthodontics

For admissions inquiries, please call the student affairs office at Ph: 800 - MBRU (6278) or Email: info@mbruniversity.ac.ae

Dubai Healthcare City, Building 34, Ground floor, P.O. Box 505097 Dubai, UAE. website : www.mbruniversity.ac.ae

General Dental Practitioners Lecture Series 2016

<table>
<thead>
<tr>
<th>Date</th>
<th>Specialty/CME Accreditation</th>
<th>Speaker</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feb 8th</td>
<td>Paediatric Dentistry CPQ/CPO/997/15 Hrs, 1.5</td>
<td>Clinical Assistant Professor Iyad Hasanein</td>
<td><em>The Role of Dental Professionals in Children’s Safeguarding</em></td>
</tr>
<tr>
<td>March 7th</td>
<td>Orthodontics CPQ/CPO/998/15 Hrs, 1.5</td>
<td>Associate Professor Moosa Abuzyada</td>
<td><em>Combined fixed removable restorations</em></td>
</tr>
<tr>
<td>April 11th</td>
<td>Orthodontics CPQ/CPO/999/15 Hrs, 1.5</td>
<td>Professor Athanasios E. Athanasiou</td>
<td><em>Orthodontic management of occlusal problems requiring a multidisciplinary approach</em></td>
</tr>
<tr>
<td>May 2nd</td>
<td>Periodontics CPQ/CPO/1000/15 Hrs, 1.5</td>
<td>Professor Crawford Bam</td>
<td><em>Diabetes and Periodontitis a two-way relationship</em></td>
</tr>
<tr>
<td>May 30th</td>
<td>Endodontics CPQ/CPO/1001/15 Hrs, 1.5</td>
<td>Dr. Rashid Elabed</td>
<td><em>Modern concepts in biomechanical cleaning and shaping of the root canal system</em></td>
</tr>
</tbody>
</table>

For online registration please visit: http://events.dhcc.ae For inquiries please contact Email: CPDevents@dhcc.ae

Office No. +971 4 3622861
saline solution allows the tooth arches to be integrated more easily in terms of esthetics and function.

Impression taking

Open tray impressions were taken with a special plaster (Snow White) and unplastered impression posts. The irreversible stiffness of the impression material completely immobilized the impression posts, which prevented any errors from occurring in the casting of the study models. The articulator allows the kinematics of the jaw to be correctly simulated. The aim of the first part of the treatment is to obtain a functional nature. It is intended to ensure the optimal occlusal integration of the restorations and the proper jaw movements during chewing, speaking and swallowing. In this particular case, the upper jaw model was positioned with the help of facebow. Four impression posts were screwed on the implants in order to produce a strong support and enhanced reliability. Alternatively, this step can take place directly on the immediately loaded provisional restorations. For this purpose, however, the model has to be mounted in the articulator of the dental practice. In the present case, the maxillary model was positioned in the correct relation to the hinge axis-oral plane. Subsequently, we adjusted the bite patterns in order to record the vertical dimension of occlusion. The centric relationship is regarded as the reference position for adjusting the muscles to the centric and functional jaw relationship. The maxillary model was mounted in the articulator with the help of an antagonist jaw immediately loaded provisional restorations. For this purpose, however, the model has to be mounted in the articulator of the dental practice. The incisal axis is aligned parallel to the sagittal/median plane. The Camper’s plane markings indicate the alignment of the occlusal plane. All these elements provide a sound rationale for the tooth set-up according to esthetic and functional principles.

Tissue selection and set-up

We selected the tooth shade and the tooth position on the pattern of the SR Phonares® II tooth mould chart. Holding the teeth up against the lips of the patient quickly reveals whether or not they are in harmony with the facial features. The set-up of the teeth according to the Ditramax markings (Fig. 6) allows the situation to be clinically validated. In this case, particular attention was given to the esthetic integration of the dentogingival complex when the patient was smiling. The lip dynamics were shown with video clips. The functional criteria were also checked. The vertical dimension of occlusion had to be harmonious in order to achieve a balanced lower facial third and proper phonation.

Fabrication of the framework

We felt that a CAD/CAM-fabricated titanium framework (e.g. Procera®) from Nobel BioCare would best fulfil this indication. The double scan technique allowed the implant model to be adapted to the tooth set-up to construct the framework. In the next step, the framework was machined and then tried on the model and in the patient’s mouth (Fig. 7). The cast impression and the high-performance processing system allowed the set-up to construct the frame-work. The cast impression and the high-performance processing system allowed the set-up to construct the framework.

Preparation of the framework for veneering

The areas that needed to be built up with gingiva materials were blasted with aluminum oxide using 2 to 5 bar pressure. Subsequently, the SR Link bonding agent was applied, followed by a thin layer of the light-curing SR Nexco® Gingiva Opaque to mask the metal framework. The opaquer was polymerized and then a second coating was applied and polymerized. The resulting inhibition layer was removed. The conventional flash tech-nique with a heat-curing denture base material (Probase® hot) was used to produce the denture. After the polymerization process, the denture base was ground and space was made for building up the Gingiva composite. The surface was conditioned by blasting it with aluminum oxide (50 pm) at 2 bar (Fig. 8). Then, a bonding agent was applied, which was left to react for three minutes before it was light cured.

The success of an implant-retained denture depends on the systematic coordination of all the surgical and prosthetic requirements. The Artex system allows the articulator of the dental practice and that of the laboratory to be synchronized. In order to achieve very lifelike results in the layering of the gingival tissue, saturated (in-tensive) materials were used first (SR Nexco Paste Intensive Gingiva) (Fig. 9). Next, translucent, light-curing Gingiva materials (SR Nexco Paste Gingiva, SR Nexco Paste Basic-Gingiva) were used to impart the gingival areas with the desired depth (Fig. 10). The colours of brushes, and the patient was given special instructions regarding her oral hygiene.

For a long time, ceramics were considered to be the esthetic benchmark. With the introduction of state-of-the-art industrially fabricated acrylic teeth, which are specially designed for implant applications, the bar for esthetics has been raised in this category of materials. The teeth used in this case exhibit a true-to-nature morphology, which allows the restoration to be functionally integrated without any problems. Using the laboratory composite SR Nexco to recreate gingival tissue is a good restorative approach. In contrast to ceramic materials, the composite resin is easy to handle and delivers exceptionally esthetic results (Fig. 15). The light weight of the material is an added bonus. An all-ceramic restoration (zirconium oxide framework, layering ceramic, gingival composites) almost twice as much as a titanium-composite resin denture. An additional advantage of the type of restoration described here is its long service life.

Conclusion

The success of an implant-retained denture depends on the systematic coordination of all the surgical and prosthetic requirements. A strict procedure needs to be followed for the treatment plan to the final outcome. Layering gingival portions with a dental composite represents a genuine improvement on previous materials and methods with regard to esthetics, handling and hygiene (Fig. 14).
Case study: Herculite® XRV Ultra™ and OptiBond™ XTR
Supporting the future generations in dentistry

By Kerr

A 52-year-old patient presented with a request to replace defective, old restorations and improve the aesthetics of the smile.

A decision was made to remove the old restorations from teeth 11, 12, 21, and 22, as well performing coronoplasty to improve the final aesthetic results. For reasons related to the patient's health, the treatment was performed over two sessions.

For the bonding procedure, the 2-step selfetching bonding system OptiBond XTR was chosen. The clinical procedure consisted of the application of a selfetching primer that changes the morphology of the enamel surface depending on its pH, followed by the application of the adhesive.

The pH of OptiBond XTR Primer is 2.5 and decreases to 1.7 during application. Then it switches to a value of 7, due to a chemical reaction with the calcium ions of the dental tissues. OptiBond XTR performs very well on the dentine surface as well, dissolving the smear layer effectively.

The selfetching primer was applied using a microbrush with gentle and active brushing for at least 20 seconds in order to promote the remineralisation and the infiltration of the substrate (“continuous brushing technique”). The solvent was evaporated using an indirect and gentle air stream.

The adhesive was applied using a microbrush with active “scrubbing”, waiting for 15-30 seconds in order to obtain the diffusion of the resin by capillary action into air stream. However, for 10 seconds, using the LED curing light Kerr Demi Ultra.

The main benefits of using the OptiBond XTR Bonding System are:
1. Fast application and predictable results
2. No need to rinse and therefore no risk of issues related to moisture control of the dentine surface
3. Good bond strength to both enamel and dentine

Knowing the functional and aesthetic features of Herculite XRV Ultra composite, the cavity was prepared by completely removing the previous restorations and any carious dentine, without removing the discoloured/secondary dentine, which will be perfectly masked by the opacity of the dentine shade of Herculite XRV Ultra.

The opacity of Herculite XRV Ultra Dentine shade is able to cover the dentine discoulouration without the need for further opaque shades. The application and sculpting of the composite was performed using the Kerr Comporellor, a useful modelling tool that consists of a handle and interchageable tips with different shapes to use depending on the type of restoration. Moreover, thanks to the unique material of which they are made, the composite doesn’t stick to the tips and therefore its placement is fast and easy.

Polishing and high gloss polishing of the restoration was performed in few fast and simple steps. Unlike other materials, Herculite XRV Ultra makes it possible to obtain high aesthetic results with a natural appearance in few minutes.

The results achieved show that use of Kerr Herculite XRV Ultra composite materials in the anterior can achieve a significant aesthetic improvement of the smile using conservative techniques and without recourse to prosthetic solutions.

In addition, the use of Herculite XRV Ultra as an anterior restorative can achieve a significantly improved aesthetic smile without using indirect restorations.

Contemporary full mouth restorations are made in two steps. Unlike other materials, the Kerr comporellor, a useful modelling tool that consists of a handle and interchangeable tips with different shapes to use depending on the type of restoration. Moreover, thanks to the unique material of which they are made, the composite doesn’t stick to the tips and therefore its placement is fast and easy.

Polishing and high gloss polishing of the restoration was performed in few fast and simple steps. Unlike other materials, Herculite XRV Ultra makes it possible to obtain high aesthetic results with a natural appearance in few minutes.

The results achieved show that use of Kerr Herculite XRV Ultra composite materials in the anterior can achieve a significant aesthetic improvement of the smile using conservative techniques and without recourse to prosthetic solutions.

In addition, the use of Herculite XRV Ultra as an anterior restorative can achieve a significantly improved aesthetic smile without using indirect restorations.

About the Author

Marco Bambridge is currently a student at the University of Padova (Department of Dentistry) in his fifth year of studies. He will achieve the degree of Doctor in Dentistry in 2016. With his talent for direct restorations, Marco Bambridge performed this in vivo case using Kerr restorative products and filling accessories.

10: Emiliano Rossi
The following case was conducted under the supervision of Dr Emiliano Rossi (Chief of Department of Dentistry in the same University, Padova).
Advanced Restorative Techniques and the Full / Partial Mouth Reconstruction - Part 1

As an introduction to a series of articles, Prof. Paul Tipton looks at restorative techniques and the impact of new dental materials

By Prof. Paul Tipton, UK

Most advanced restorative dentistry techniques, including that of full mouth reconstruction, have changed very little over the last 20 to 50 years. However, the impact of new dental materials, such as titanium and zirconia, has had a major influence on aesthetic dentistry and implantology during this time period. As a result, the profession may have an over-reliance on new materials rather than tried and tested techniques.

Some fundamental techniques are just as relevant today as when I started my Masters degree in conservative dentistry at the Eastman Dental Hospital in 1987. During the course of this series of articles on advanced restorative techniques, some old techniques will be revisited in light of today’s aesthetic and restorative requirements and some newer concepts will be discussed in greater detail whilst dealing with the overall topic of full mouth reconstruction. This article previews the restorative techniques that will be discussed during the next 10 clinical articles on advanced restorative techniques.

Occlusal concepts

During my Masters degree at the Eastman and prior to that, my training in occlusion has been in gnathology and its principles as taught at the University of Michigan and by Derek Setchell, Richard Holton and staff at the Eastman Dental Hospital during the last 20 years. This includes the five principles of occlusion, which are:

1. Retruded contact position (ICP) = intercuspal position (ICP) around retruded axis position (RAP)
2. Mutually protected occlusion
3. Anterior guidance
4. No non-working side interferences
5. Posterior stability.

The article on occlusion will review these concepts and also discuss when alternatives, such as long centric, are required (Figures 1-5).

Treatment of severe wear cases One of the fundamental approaches to partial or full mouth reconstruction (and aesthetic dentistry) is envisaging the end result prior to starting the case. There is no better way to see the end result than the full and complete diagnostic wax-up. The aesthetic ability of both dentist and technician is stretched during this essential procedure. The article on diagnostics will review the procedures to complete a full mouth reconstruction at an increased vertical dimension with establishment of the lower occlusal plane, incisal edge positions, curves of Speer and Monson and anterior guidance prior to preparation, prototypes and fitting of the final restorations (Figures 4-6).

Full mouth reconstruction Following on from diagnostic procedures in the previous article, the techniques of full mouth reconstruction will be reviewed including the use of various forms of articulators from the fixed condyle (average value) articulator through to the semi adjustable and on to the fully adjustable for the customisation of the condylar settings. The programming of these will also be looked at and discussed from ‘fixed’ settings to use of lateral and protrusive check bites, and finally the pantograph and newer ‘Cadax’ machine (Figures 7-9).

Vertical dimension

Changes in vertical dimension are often required for either gaining restorative space during restorative procedures or for improving facial aesthetics. Occlusal splints are used to first verify that the increase in vertical dimension can be tolerated and this is easily accomplished in most cases as long as this increase is done around RAP or centre relation so that the condyles are in their most relaxed, bone braced and reproducible position. Increases and decreases in vertical dimension will be discussed showing positive changes in facial aesthetics as treatment is completed (Figures 10-12).

Dahl appliances

Bjorn Dahl first described the Dahl appliance in the early 1970s. Since then they have gradually been incorporated into the field of restorative dentistry although many Orthodontists still dispute their efficacy and relevance.
The article on Dahl appliances will cover its history and usage in today's modern restorative dentistry, focusing on the use of traditional chrome cobalt 'Maryland wings' style of Dahl appliances and also the use of splinted temporary or prototype restorations used to gain splinted temporary or prototype restorations used to gain mobile teeth as in situations where conventional dentures or implants are not possible (Figures 19-21).

Duralay bonnets

Impression techniques demand a high degree of accuracy for the completion of the advanced restorative case. Often this is a difficult procedure for the restorative dentist when taking impressions both times as a full arch impression (where there are multiple teeth present) or undertaking an impression of mobile teeth as in the Lindhe/Nyman bridge. Both of these techniques will be reviewed and clinical examples shown of how the duralay bonnets and coat hanger wire technique can be used not only for impressions but also for jaw registrations (Figures 16-18).

Periodontal prosthetics

The article on the periodontal prosthetics, commonly known as the Lindhe/Nyman bridge, reviews all the literature from the 1970s on this exciting technique, which allows multiple pontic replacement in fixed bridgework on often severely mobile and reduced number of abutment teeth. The science is overwhelmingly in favour of this type of bridge in certain situations where conventional dentures or implants are not possible (Figures 19-21).

Peter Wohrle bridgework

The duralay bonnet technique also crops up in this article on individual crowns cemented onto a pink porcelain fused to metal bridgework cemented onto gold copings and then onto abutments screwed into dental implants – hence the abbreviated name 'Peter Wohrle bridgework' for ease of use after the dentist who first described the technique. Several cases will be described using slightly different techniques to illustrate the technical difficulties in producing this bridgework but demonstrating the overall superior aesthetic result, optimal fit and maintenance potential (Figures 22-24).

Aesthetic periodontics

The last article in the series reviews the latest techniques in periodontology used to enhance optimal aesthetic restorative techniques. The periodontist is an essential team member of the aesthetic restorative practice and an increasing amount of patients are requiring pink as well as white aesthetics. Connective tissue grafting, pontic site development, crown lengthening etc will be reviewed and discussed with step-by-step protocols (Figures 25-27).

Conclusions

Restorative dentistry has gone full circle with old techniques revisited and amended for today's dentistry. These techniques do not, however, get enough 'air time' in many journals as the importance of aesthetics takes over. It is my aim to help the reader understand these advanced restorative techniques and encourage them to put them into their everyday practice in order to help their patients and gain more clinical satisfaction.

For the writing of this article on advanced clinical techniques, I would like to thank certain members of my team, including Dr Ibrahim Hassain, BDS, M. Med. Sci. Implantology – implant surgeon, Mr Bradley Moore – dental technician, ADS Laboratory, Harrogate and Dr Andrew Watson, BDS, MSc, specialist in endodontics.

Article was published in Private Dentistry.

About the Author

Prof. Paul A. Tipton BDS, MSc, DGDSP UK, gained his MSc from the Eastman Dental Hospital in 1989. In 1999 he was certified as a specialist in prosthetics. During the last 20 years he has established his private practice and established for Tipton Training Ltd on restorative, aesthetic and implant dentistry. Over 2,000 dentists have been through one of his one-year dental programmes of which there are four levels (for more details visit www.tiptontraining.co.uk).

Prof. Tipton is currently president of the British Academy of Implant Dentistry and in clinical practice at the Yorkshire Centre for Advanced Dentistry outside Leeds where he takes referrals for restorative, aesthetic and implant dentistry (www.centreforadvanceddentistry.co.uk).

Why choose The Phantom Head Course

Improve your tooth preparation skills

Offer more complex treatments

Increase your private income

Secure a better, more varied job

"Professor Paul Tipton is an inspiring teacher with his knowledge I take up more complex work of a better standard and charging more."

Dr N Gokul.

Fast track your McIn Dent in association with

British Academy of Restorative Dentistry

Tipton Training

Dental School

Allport and Vincent Dental Laboratory Limited

Impress your clients and impress your colleagues

Secure your place now!

Enrol Now

Courses starting February 2015

Manchester & London From £549 +VAT per day

12 days approx 1 day per month 6hrs CPD per day

Discover more at

www.tiptontraining.co.uk

T: 0161 348 7848
E: enquiries@tiptontraining.co.uk
Clinical Management Approach of Molar Incisor Hypomineralisation. A case report.

By Dr. Shaikha Alraeesi, UAE & Dr. Manal Al Halabi, UAE

Abstract

Molar incisor hypomineralisation (MIH) is a relatively common dental defect that appears in first permanent molars and incisors and varies in clinical severity. The specific etiological factors remain unclear. Inappropriate management of the condition will allow early intervention including monitoring and preventive interventions that might help in remineralisation of the hypomineralised tooth structure. These preventive measures can be instituted as soon as affected surfaces are accessible.

Clinical relevance statement

Failure of early diagnosis and dental management in cases of Molar Incisor Hypomineralisation (MIH) leads to rapid development of dental caries, increased pulpal inflammation and continuous enamel as well as restoration breakdown.

Objective statement

The reader should understand the Molar Incisor Hypomineralisation (MIH) condition and the availability of different management options of this condition.

Introduction

Molar Incisor hypomineralisation (MIH) is a developmentally derived dental defect that involves hypomineralisation of 1 to 4 first permanent molars (FPM), frequently associated with similarly affected permanent incisors. The pattern of enamel defects consists of asymmetric, well-demarcated lesions affecting the enamel of the FPMs and is associated with similar defects in permanent incisors and canines. (1)

Prevalence

Available modern clinical prevalence data for MIH mostly from Northern Europe, ranges from 3.6% to 25% and seems to differ between countries and birth cohorts. (2)

An etiology

An etiology of this condition is poorly understood, with many associated factors (including environmental changes, breast feeding, respiratory diseases, oxygen shortage of ameloblasts and high fever) but few proven causative agents. (3)

Clinical Features

Fairly large demarcated opacities, whitish-yellow or yellowish-brown in colour that may or may not be associated with post-eruptive enamel breakdown. Hypomineralised enamel can be soft, porous and look like discoloured chalk or Old Dutch cheese. Subsurface porosity leads to breakdown after eruption, especially under occlusal forces, resulting in exposed dentine and sensitivity. (4)

Management

Permanent molars affected by hypomineralisation are prone to rapid development of dental caries and repeated breakdown of restorations. Therefore, careful planning is required, taking into account patient’s age (behaviour management issues), degree of crowding and co-operation. Sensitivity of affected teeth plays a major role in difficulty of achieving anaesthesia and thus behavioural issues.

~ Preventive

• Diet advice
• Higher fluoride toothpaste (at least 1450 ppm F)
• Topical fluoride varnish
• Casein phosphopeptide-amorphous calcium phosphate (CPP-ACP)

~ Restorative

• A small lesion can be treated with localized composite, where the enamel is soft, or fissure sealants, where the hardness of the enamel appears no different from the unaffected enamel.
• GIC is recommended as dentine replacement or as an interim restoration due to ease of placement, fluoride release and chemical bonding.
• For extensive lesions with post-eruptive breakdown especially if the cusps are involved, preformed stainless steel crowns (SSCs) are preferred as an effective medium-term restoration. SSCs can preserve the FPM until cast restorations are feasible. (5)(6)

~ To save the tooth or not?

• The first decision in the management of the MIH FPM is whether the tooth should be saved or not. The decision to extract or restore will depend upon a number of different factors, some of these being the degree/extent of hypomineralisation, post-eruptive breakdown, sensitivity, age and cooperation of the patient, any...
developmentally absent teeth. Consultation with an orthodontist is advised.

According to the Royal College of Clinical Radiographic guidelines for the Extraction of First Permanent Molars in Children, the ideal timing of first permanent molar extraction is between 8-10 years of age after the eruption of all incisors but before the eruption of the second permanent molars and second premolars. Traditionally, for the most optimum mesial movement of the second permanent molars, the extraction of the place of the extracted FPM and produce the best occlusal position, it has been suggested that the second permanent molar is demonstrating radiographic evidence of calcification in the root bifurcation.

Case report
A ten-year-old patient (SS) with no significant medical history or allergies presented to the Department of Paediatric Dentistry at Hamdan Bin Mohammed College of Dental Medicine (HBMCMDM) in Dubai Healthcare City, Dubai (UAE). Complaining of slight pain that led to a discolored filling in her upper left region. Presently the tooth is asymptomatic. The pain is described as intermittent during the day, lasts for a while (hour or less), does not stop her playing or affect her sleep.

Dental history was taken from the father. The father reported that (SS) had a significant number of upper respiratory tract infections and tonsillitis during early years of life. Clinical examination of the oral cavity demonstrated yellowish discoloration of the enamel on the occlusal surfaces of 16 and 26. 26 presented with Stained fissures of lower permanent molars with no progression of any pathological lesion underneath the SSC.

Radiographic investigations were done including (OFT and PA radiographs) to assess the proximity of the coronal defect to the pulp and to evaluate the presence of the pulp chamber and to ascertain the presence and stage of development of remaining permanent teeth (especially lower 5s, 7s, and 8s).

MIH was diagnosed based on clinical appearance. See Figures 1 (a, b, c, d & e) for clinical features. (SS) revealed for radiographic findings.

A diagnostic list and treatment plan was formulated by a specialist of Paediatric Dentist as well as orthodontist and explained in detail to the father.

Diagnostic Summary
A fit and healthy 10-year-old girl in the late mixed dentition with molar incisor hypomineralisation (MIH). MIH was diagnosed based on clinical appearance.

Aims and objectives of treatment
• To alleviate the pain and sensitivity.
• To preserve the structure of weakened FPMs.
• To formulate an individualized realistic preventive scheme and reinforce it regularly.
• To monitor the occlusion of developing dentition and treat as necessary.
• Maintain good oral health in the long term.

Treatment
A short-term treatment
• Emergency phase o Sedative filling of 20.
• Preventive care phase o Oral hygiene instructions o Diet analysis and advice o Plaque score o Fluoride advice
• Restorative treatment phase o Stainless steel crowns for all permanent first molars
• Recall and reviews o Regular recall 3 months, radiographs every 6 months and fluoride varnish application every 3 months

Medium/long term
• Monitor the eruption of permanent dentition
• Interdisciplinary management

Treatment
The treatment plan was set in two phases including Short/ Medium term and long term. The short term will start with Emergency phase for restoring the 26 with GI as a temporary filling. An extensive preventive programme was implemented to stabilise the situation in addition to diet assessment, analysis, and advice and fluoride application. In several visits crown preparation was done under local anaesthesia for 36, 46, and 26 followed by stainless steel less crown placement. Patient’s occlusion was checked for any discrepancy in each visit.

As SSs is considered to be of high caries risk status she was kept on regular recall programme including revisit visits and fluoride varnish application every 5 months, radiographs every 6 months. See Figures 5 (a, b, c, d & e).

Long Term Treatment Plan and Future Considerations
• Regular long-term diet monitoring and reinforcement of oral hygiene practices.
• Periodic review of the restorations with radiographic assessment.
• Review the first permanent molar status.
• Monitor eruption and development of dentition.
• Educate patient and parents about the poor long-term prognosis of first permanent molars these teeth and available future treatment options.

Discussion
Children with MIH have higher treatment needs and significant challenges in behaviour management than other children. S.S was a quiet girl who was apprehensive in the beginning of the dental surgery but willing to have the treatment. SS was diagnosed as MIH in her first permanent molars. Using non-pharmacological behaviour management techniques including Oral hygiene instructions, distraction helped to accustomise SS to dental treatment. These techniques are widely used in children's dentistry and well accepted by parents. The technique works well combined with behaviour shaping. S.S was rewarded with a gift after each appointment as positive reinforcement for her good behaviour and cooperation. 26 was temporized with glass ionomer to relief discomfort, stabilize the situation and to reduce bacteria present count present in the oral cavity.

Failure of achieving complete anaesthesia of first permanent molars was related to the nature of MIH SS received supplemental intragaleal infiltration. The innervations density in the pulp of hypomineralised molars is significantly greater than of normal molars. This can explain why lower left 6 was hard to be anaesthetised. Due to poor quality of the FPM of teeth of SS and significant tooth break down full coverage by preformed metal crowns was done. Preformed metal crowns prevent further tooth loss, control sensitivity, establish correct interproximal and proper occlusal contacts, are not costly and require little time to prepare and insert.

Conclusions
• The presence of MIH molars not only requires the dentist to identify problems at the early stages but also to clarify the problem thoroughly and explain the treatment options to the patient and child.
• It is advisable to consider children with a poor general health and in the first four years after birth at risk for MIH. These children should be monitored more frequently during eruption of the first permanent molars.
• Whilst many potential approaches exist for the restorative management of molar incisor hypomineralisation, few are yet supported by good quality clinical research data. Preformed metal crowns have been recommended as the prosthesis of choice in MIH affected posterior teeth with post-eruptive enamel breakdown in majority of the literature available.
• The use of nitrous oxide inhalation sedation can be a useful adjunct in obtaining satisfactory anaesthesia in MIH patients. Nitrous oxide was not used in the case of SS due to parental refusal because of limited financial resources.
• Had this patient presented earlier, consideration for enforced extraction of FPM would have been considered.

References


Evaluation of dental implant therapy – peri-implantitis

By Dr. Olivier Carcuac, UAE

Peri-implantitis is one of the most common complications affecting patients with dental implants. The condition is characterised by an inflammation in peri-implant soft tissue and loss of supporting bone. Despite several similarities in clinical features with its counterpart at teeth, the disease progression of peri-implantitis is faster than that of periodontitis. Peri-implant mucositis is the precursor to peri-implantitis as is gingivitis to periodontitis.

Clinical and experimental studies demonstrated that peri-implant mucositis and gingivitis lesions are similar in size and cell composition (Lang et al 2011). Both lesions may progress and thereby influence supporting tissues at teeth and implants. Established peri-implantitis lesions exhibit critical histopathological differences when compared to periodontitis lesions (Berglundh et al 2011). Pre-clinical in vivo studies comparing the two lesions have used experimental techniques to induce periodontitis and peri-implantitis. In one such study, Carcuac et al (2015) demonstrated that disease progression differed at teeth and implants over a six-month period. Bone loss was more pronounced at implants with modified surfaces compared to teeth and implants with non-modified surfaces. Histological analysis also demonstrated that periodontitis lesions were well contained and separated from the alveolar bone by a zone of non-inflamed connective tissue, while a similar border between the lesion and the supporting bone was absent in peri-implantitis sites (Figure 1). In addition, the most apical portion of the peri-implantitis lesion extended to the bone crest, the surface of which was lined with osteoclasts. The histopathological discrepancies between the two types of lesions may be explained by the structural differences in the supporting tissues at teeth and implants. In a comprehensive study based on human soft tissue biopsies obtained from 40 patients with severe periodontitis and 40 patients suffering from severe peri-implantitis, Carcuac et Berglundh (2014) reported further differences between periodontitis and peri-implantitis lesions. In contrast to periodontitis samples, peri-implantitis lesions were more than twice as large and contained significantly larger area proportions, numbers, and densities of macrophages, plasma cells and neutrophil granulocytes than periodontitis lesions (Figure 2). These findings indicate a more severe disease character for peri-implantitis, which may, in part, explain the higher rate of progression.

Peri-implantitis is diagnosed, as is periodontitis, in the presence of bleeding on probing and loss of supporting tissues. The discussion regarding the diagnosis of peri-implantitis usually focused on radiographic thresholds of bone loss. In this context, recommendations for clinical research and diagnostic guidelines for everyday clinical
practice have been confused. Studies evaluating the prevalence of peri-implantitis used so-called case definitions. While there is consensus concerning the use of bleeding on probing as a clinical criterion, the use of at least seven different radiographic thresholds of bone loss has been suggested to determine peri-implantitis (Tomasi et al 2012).

Following a meta-analysis of data from different studies, Derks and Tomasi (2015) recently reported that about 22% of patients with dental implants suffered from peri-implantitis. Similar results have been presented in other literature reviews (Mannelli et al 2012). In a recently published nation-wide project, data from 596 patients were used to study the prevalence of peri-implantitis (Derks et al 2015). While about 45% of the patients presented with signs of peri-implantitis, 14.5% had moderate/severe forms of the disease (bleeding on probing >2mm bone loss) at disease (bleeding on probing ≥1 mm). These results were associated with moderate/severe peri-implantitis. Patients presenting with periodontitis were more likely to suffer from moderate/severe peri-implantitis. Factors related to clinicians were associated with moderate/severe peri-implantitis: patients provided with prosthetic therapy performed by general practitioners presented with a higher odds ratio (4.5). In addition, certain implant brands were associated with a higher risk for peri-implantitis: Straumann implants show the lowest rates of moderate/severe peri-implantitis when compared to Nobel Biocare, Astra Tech and the other implants represented in this observational study (including Biomet 3i, CrestoTi, Xive, Friialit, LifeCore, Implant and API). Finally, a higher odds ratio (2.5) for moderate/severe peri-implantitis was observed for implants with a reduced distance (≤1.5 mm) from the prosthetic margin to the crestal bone as measured in baseline radiographs.

References

Editorial note:
The full list of references is available from the publisher.

CITY PHARMACY CO.
Trusted market leader since 1967.

Representing some International major companies such as:

ABU DHABI SHOWROOM
TEL. (02) 673 0790
FAX. (02) 673 1995

SHARJAH INDUSTRIAL AREA OFFICE
TEL. (06) 535 5575
FAX. (06) 5356839

SHARJAH RUHANAH SHOWROOM
TEL. (06) 555 9322
FAX. (06) 555 1300

About the Author
Dr. Olivier Carrasc (1) DDS, Specialist in Periodontology
My Dental Clinic
Al Thanyo Road, Villa 61A
Umm Saqeim 2, Dubai, UAE
(2) Odont. Dr. (PhD)
Department of Periodontology
Institute of Odontology
Sahlgrenska Academy
University of Gothenburg
Sweden
Specialist in Periodontics and Implant Dentistry at
My Dental Clinic
T: +971 4 5588959
E: oligier@mydentalclinic.ae

~ Page 24 ~
YOUR DENTURES GAVE THEM CONFIDENCE. WE’LL KEEP IT GOING.

Maintain your patients’ confidence and satisfaction with their dentures by helping them overcome daily social, emotional and physical challenges.

Help your patients eat, speak and smile with confidence with the Corega® denture care regime.
Dentine hypersensitivity protection, now in a daily mouthwash

The first Sensodyne mouthwash containing 3% potassium nitrate and fluoride, proven to provide ongoing protection from dentine hypersensitivity with twice-daily rinsing.1-5*

*Rinse twice daily after brushing with a fluoride toothpaste.

Sinus Lift. Don’t Dream It: Do It!

By Dr. Dominique Caron, UAE

Do you know you are about to perform yourself your next sinus lift procedure? Once it is done, you will wonder why you have been waiting for so long. The issue that often fails is: one, two, three teeth missing, framed by no tooth, weak teeth, living teeth…

What is the best option to be ethical and efficient?

First option: a bridge. It means doing it earlier. By no tooth, weak teeth, living teeth…

This solution would be nice except that it cannot work like this. The sinus may “disagree” and will have no strength. What you dream of is that: “strong implants fit into a strong support”.

Simple, except that you never did it!

If you are ethical:
- You will leave the bridge to stone age
- You will manage to have the implants done in the best conditions.

To do so you can subcontract the implants surgical step with a colleague who knows how to do it, it is safe and professional, but who can you fully trust?

However, if you feel there is nothing beyond you and that you have learned, that you have been on training courses, you will need to take the plunge!

I don’t know if you feel the same but during a lecture everything seems easy, quick, simple, it is like magic!

But now that you are alone without safety net, you don’t know where to begin. It is time for you to become your own specialist.

All this is first a matter of state of mind: YES YOU CAN!

Yes, all what we have to do in this dental case is simple: it is a matter of screws and plank. If you can assemble an IKEA cupboard, you can do implants. You should never lose the sight that we do on every day basis is a matter of building and civil engineering works. It is just at a very smaller scale. Nevertheless, we have the same constraints and an additional foe “the bacterias”.

Don’t lose your common sense, consider the stair case step by step and “THINK SIMPLE”. You don’t have a plank thick enough for your screw, add a back plate! The idea is the same, may be some more details to take into account, and the support is a living body you are supposed to “keep alive”… it is appreciated. (Joke)

The most accurate and safe in the market is the cone beam system.
With a Cone Beam, you have:
1. Study the Case
2. Open the way
3. Raise the “schneiderian membrane”
4. Fill the new empty space with the graft
5. Set the implants through the bone and the graft
6. Cover the window
7. Stitch well
8. Have a coffee with the patient

What are the imaging tools matching with the needs? The most common is CT scan, easy to find but you will get many raw slides and you build the 3D in your mind.
Keep this to the Stone Age due to the huge rate of radiation.

Good artist needs good tools to do a good job.

What is the best option to be a matter of state of mind: YES YOU CAN!

Don’t lose your common sense, consider the stair case step by step and “THINK SIMPLE”. You don’t have a plank thick enough for your screw, add a back plate! The idea is the same, may be some more details to take into account, and the support is a living body you are supposed to “keep alive”… it is appreciated. (Joke)

On the crest, don’t stay exactly in the middle, but little on the palatal side. The buccal flap will protect the implants more efficiently. Extend your incision at least one tooth front and one tooth back to have an easy access without a long vertical incision.

Make sure the incisions will not be close to the graft. You need to see easily what you are doing, it is a priority. The more you peel off the gums, the less you cut, the better your patient will heal. So you should always be smooth!
I will come back later on this technique. Peel of the gums smoothly on the buccal side with the periostetti. Take off high enough to help you “SEE WHAT YOU DO”.

Surprisingly, you will see it is helping a lot!

Now, big question: graft and implant in 1 or 2 times?
You came to all the conferences of CPP, you read a lot, you have watched many videos.

The result may be as follows: “The more you try to learn, the less you know”!

For the same question in the same conditions, you may be told anything and its opposite… Maybe this is not really helping but the state of mind is often: big graft, big delay!

Once more, I can tell you what I have done for more than 20 years. Don’t lose your common sense: a graft set in the bottom of a sinus is like a loose cargo in the bottom of a hold.

As soon your patient walks or goes down the stairs, you can imagine how it is shaking. Beyond the mechanical properties of the graft itself, what we will talk about in a minute, you can expect the fragile Schneiderian membrane will not be a great help.

Once more you should be practical. Put a screw in the middle! If your graft is rolling, there will be no healing, not fiber growth, no new blood vessel, and you will fail.

A stable graft is compulsory to get a predictable healing, with a stake in the middle; you make it a stiffer.

Now softly lift off the membrane from the bottom of the sinus, the same way you would lift a carpet! Once more avoid “Parkinson” and take your time. This step is important, it is not a race! You will see many “movie stars” proud to say they are very fast. As a matter of fact, the quicker you work, the better is the healing, but the main point is to be accurate and smooth. The stop watch comes next...

Now a big question:

What kind of graft?
You have attended many lectures, read many reports, gone online: each time the material considered is the best and fits 100%.

All the materials are the best! How can you make your mind?
To enter the problem in a relaxing way: “EVERY KIND OF GRAFT CAN MATCH” and the market is wide.

First of course, you have the bones: - Autograft bone: seen as the best. No immunogenic reaction, but you need to harvest. If you take the graft on the chin or the ramus you may have pain, inflammation and paresthesia. If you use the hip or the skull, you get involved in a heavy process, too heavy.

Allo graft, xenograft are dry bone denescribed with slow remodeling and a granular display which is not helping or a cubic display not easily matching.

You have coral, hydroxyapatite, calcium carbonates, brucites, phospho calcic, ceramics, tricalcium phosphates, biphasic ceramics, polymers, bioglass, calcium sulfates, composite… The list is long...

All materials can fit. Anyway, same as for your car. Four wheels and an engine means a car. Except some brands are better than the others!

Again think simple: What do you need? The graft must be:
- Easy to use
- Hemostatic

1. Easy to use.
Most of you have often got to fight with granulates sticking to everything but the cavity you want to fill. The bone substitute may be trodden and must not crumble.
- To get a homogenous bone, it is better to make an homogenous draft.
- Granulates outside the cavity, between the cortical and soft tissues, uncase the healing and may be an open way for bacteria.

With a kind of sponge mixing collagen and mineral phase, your graft will be repositionable, malleable, stable, clean and will not migrate.

Or, as a second ceiling, you set an absorbable membrane. For good, “resorbable” in 2-3 months, in time with the natural process.

- You did not stab it, you win.
- Go straight to the drilling of the socket with a tool as a shield between the drill and the membrane.

Now, big question: what do you need?
You have attended many lectures, read many reports, gone online: each time the material considered is the best and fits 100%.

All the materials are the best! How can you make your mind?
To enter the problem in a relaxing way: “EVERY KIND OF GRAFT CAN MATCH” and the market is wide.

First of course, you have the bones: - Autograft bone: seen as the best. No immunogenic reaction, but you need to harvest. If you take the graft on the chin or the ramus you may have pain, inflammation and paresthesia. If you use the hip or the skull, you get involved in a heavy process, too heavy.

Allo graft, xenograft are dry bone described with slow remodeling and a granular display which is not helping or a cubic display not easily matching.

You have coral, hydroxyapatite, calcium carbonates, brucites, phospho calcic, ceramics, tricalcium phosphates, biphasic ceramics, polymers, bioglass, calcium sulfates, composites… The list is long...

All materials can fit. Anyway, same as for your car. Four wheels and an engine means a car. Except some brands are better than the others!

Again think simple: What do you need? The graft must be:
- Easy to use
- Hemostatic

2. Hemostatic
The blood is useful to start the healing process but, when it becomes a flush, it can move your graft and you can hardly see what you do. This means some collagen type III to start a quick clot.

5. Resorbable
What you set is not a ready-made bone, it is a mock up for the natural bone to come.

Osteoconductive
The “mock-up” has to be attractive for the osteoblasts and the bone substitute has to be easily integrated in the new structure.

For good, instead of choosing between small and big granules, to fit well, we should mix:
- Under 80 um : too small granules create inflammation and resorption; avoid
- Between 80 um and 200 um: small granules fit well to the defects and increase the reactive surface.

- Beyond 500 um stands the pressure of the soft tissues. The wider it is, the more you get hollows welcoming stemm cells.

Today, the best I have found is MATRIBONE from BION UP! It is a kind of sponge you can shape, cut. It is malleable, repositionable and doesn’t crumble.

The wider it is, the more you get hollows welcoming stem cells.

What happens in you graft?
- First hours: collagen type III, which is roughly made up of several type I, has a surface that activates the platelets and makes with fibrin, a quick and stable clot.
- First days: granulation tissues, then remodeling tissues.
- One week: macrophages, cytokines, growth factors start micro vascularization.
- First 2 months: new vascularization in new growing time created by osteoblasts. Osteoblasts at work, you find stem cells in the lacunae.
- 8 months: dense bone is available, osteoblasts become osteocytes.

What happens in the sinus after some months? Let us see more samples:

Histological evaluation of human osteoblast onifice bone reconstruction with MATRIBONE, a collagen-based bone graft substitute, in dental and maxilla facial surgery.

Process:
1. Collection of a bone biopsy at the center of the treated site with a trephine bur.
2. Fixation in 70% ethanol, dehydration and inclusion in methyl methacrylate resin. Re- alization of 7 microns sections (NOVOTEC laboratory, Lyon, France).
3. Trichrome Goldner staining and microscopic analysis.

Case 1: biopsy after 4 months
45 year old female, 16 extraction, bone deficit in height and thickness.
New coating could eliminate implant failure risk

By Dental Tribune International

TORONTO, Canada:

Although their success rate has been reported as about 98 percent, dental implants can fail owing to biological and technical issues over time. In many cases, the body’s inflammatory response causes rejection. Canadian researchers have now presented a new implant coating that helps disrupt this immune mechanism to prevent both the risk of implant failure and the need for anti-inflammatory drugs.

The disruptive new anti-inflammatory polymer was developed by Dr. Kyle Battiston, a postdoctoral fellow at the Faculty of Dentistry and a recent graduate from the Institute of Biomaterials and Biomedical Engineering at the University of Toronto. It was originally designed as a tissue-engineering scaffold that allows tissue engineers to grow cells successfully.

Battiston and his colleagues were able to coat implants with the biomaterial, which is derived from a family of polymers found to reduce inflammation, specifically when it interacts with white blood cells, and discovered that the coating calms the body’s immune response.

“We’ve learned this family of materials can retain its anti-inflammatory character while adapting diverse physical properties,” said Battiston. “The material could thus be used for a wide variety of medical treatments.

Battiston plans to market the coating through his new startup company KSP2 within the next five years.

According to the American Academy of Implant Dentistry, 5 million Americans already have dental implants and this number is growing by 500,000 a year. About 10 percent of all U.S. dentists place implants today. The association estimates that the U.S. and European market for dental implants will reach $4.2 billion by 2022.

By Dental Tribune International
56th EXCIDA in conjunction with FDI Persian Regional Congress ICOI world congress XXXIV

VISIT PERSIA
THE ANCIENT EMPIRE

17-20 May 2016 | Tehran, Iran
Tel:(0098)2188289256-9
www.excida.ir
@excida56
Cast mounting using MaxAlign: The clinical component

By Dr. Les Kalman, Canada

The importance of records cannot be overstated. Records are a legal requirement, are vital in assisting with diagnoses, and facilitate treatment planning, patient comprehension and laboratory communication.\(^1,2\) The clinician has the choice between virtual or tangible records, which may include casts, a facsimile, articulation and photographs.\(^3,4\) Accurately mounted diagnostic casts provide an immense amount of information for treatment and that information will have an impact on the final prosthodontic plan.\(^5\)

Just as the correct mounting of casts provides valuable information, so too does incorrect mounting provide inaccurate information. In addition, incorrect mounting may result in false diagnoses and possibly even altered treatment plans, based on errors in inter-arch space, occlusal contacts and force directions (Fig. 1).\(^1\) Laboratory communication with the clinician remains an important aspect, yet this has been lacking.\(^6\) Without records, communication with the laboratory can be even more limited. Communication tools must be employed\(^6\) to provide information so that laboratory technicians can satisfy laboratory requirements. Lack of information results in gueswork, assumptions and incorrect dental work that is ultimately returned to the dental laboratory.\(^6\)

**Background MaxAlign**
The MaxAlign application (Max Whip Mix) is a communication tool for the clinician that captures essential patient information. It is a tablet-based technology that offers a unique set of records, enabling the accurate mounting of casts complete with a patient image. Max provides a calibrated photograph with clinical information and a novel technique for the mounting of casts. This case report will explore the effective use of Max to acquire clinical information that is vital for the laboratory, third-party insurance, the clinician and the patient.

**Clinical protocol**
A healthy 36-year-old female patient with a non-contributory medical history presented for consultation regarding elective anterior aesthetic treatment. Records consisted of alginate impressions using stock trays, which were poured in JADESTONE (Whip Mix), and utilisation of Max.

The Max app was downloaded onto a Samsung tablet (provided) and launched (Fig. 2). Patient information was input (Fig. 3). The tablet was positioned in the tablet clamps (provided) and the clamps were tightened to ensure a vertical orientation (Fig. 4). The tablet must be placed such that the Samsung logo is on the right, so that the camera is located to the right. The patient was in the upright position, with the occlusal plane parallel to the floor, while the tablet was placed on the instrument delivery stand (Fig. 5). Max has anatomical guides for positioning: maxillary incisor midline and edge, location of orifices and inferior orbital outlines.

The delivery stand was positioned close enough to the patient for her facial features to line up with the guides on Max (Fig. 6). Cheek retractors were employed to offer a clear view of the dentition (Fig. 6). Once the patient was in the correct position, the “arm auto capture” button was pressed. The tablet then captured a photograph, with a flash, of the patient (Fig. 7). Once the photograph has been taken, the clinician has the ability to maximize patient position by sizing or moving the image. The width of the central incisors can be selected from the boxes (Fig. 7). Once completed, the image is saved. The next step is to verify occlusion. This was done with standard shimstock while the patient is in maximum intercuspation (Fig. 8). The contacts were observed and input into the second Max screen (Fig. 9). This screen represents the quadrants of the dentition, and each box represents a tooth. In order to record occlusion, one touches the box that corresponds to the teeth contacting (Fig. 9). The image and record of occlusion are saved and the operator has the
A triple burst of better gingival health

The new Philips Sonicare AirFloss Ultra

Philips Sonicare AirFloss Ultra gives your inconsistent flossers everything they need for improved interproximal health. With our new high-performance nozzle design and triple-burst technology, it creates three bursts of micro-droplets to remove plaque biofilm.

Clinically proven as effective as floss for improving gingival health** and is shown to improve gum health in 4 weeks***. AirFloss Ultra can be filled with water or antimicrobial mouth rinse, for targeted treatment. And inconsistent flossers say it’s an easy addition to their daily routine. After all, the best solution is one they’ll use regularly and effectively.

95% said it was easy to use*

up to 97% showed improved gum health**

up to 99.9% plaque biofilm removal in the treated area†

For enquires contact Castle General Trading tel: 0097143328795 or email: cgtdub@emirates.net.ae

* Survey of U.S. patients
** When used in conjunction with a manual toothbrush and anti-microbial rinse in patients with mild to moderate gingivitis. AirFloss is designed to help inconsistent flossers develop a healthy, daily interdental cleaning routine. For more information, please visit www.philips.com/airfloss/faq or reference the QR code.
*** Vivo study to assess the effects of Philips Sonicare AirFloss Ultra, when used with antimicrobial rinse, on gum health and plaque removal.
† In a lab study, actual in-mouth results may vary.
option to exit the app or proceed with the laboratory component. If the mounting will be delegated to a laboratory, this concludes the clinical component of Max. The clinical information can then be e-mailed to the respective laboratory as a JPEG or PDF file. The laboratory would utilise the information according to the instructions in Max, as well as the peripherals, to mount a set of casts accurately (Fig. 10).

Discussion
Based on the records and examination, the following were determined: class I occlusion, 20% overbite, 0/2 mm overjet, canine guidance and evidence of a parafunctional habit. The diagnosis included mildly discoloured anterior composites and bruxism. The patient was presented with several treatment plans, ranging from preoperative whitening followed by minimally invasive composite replacement (Fig. 5).

Jet Air Polisher
QUICK JET®
VISIT US AT AEEDC 2016, 2-4 FEB.

→ COMPLETE OUR SURVEY & GET A FREE THANK-YOU GIFT!
to anterior porcelain veneers. An occlusal splint was also recommended. Although she was undecided on the treatment modality, the records obtained with Max provided valuable information for the clinician, the patient and third-party insurance. If treatment is to proceed, important information on occlusion, guidance and aesthetic determinants will be accurately conveyed to the laboratory. Utilisation of the clinical component of Max provided a very simple approach to capturing the clinical data. The process was straightforward, the anatomical guides proved very useful and the record of occlusion provided additional crucial information that is often omitted. There were no software glitches or errors during operation.

The patient also found the process extremely quick and comfortable. Max has several safeguards to guarantee optimisation. There is a sensor to ensure it is properly positioned when taking the photograph of the patient. If it is not properly positioned, image capture will not occur. Calibration may be required in order to ensure that the sensor is correctly set. This is achieved by positioning the tablet vertically in the stand and then pressing the “calibrate sensor” button. The sensitivity of the positioning sensor may also be adjusted with the “adjust sensitivity” button.

If the clinician has become frustrated and must take the image immediately, there is a “force capture” button that will override the sensor and take an image.

Future development may consider the option of saving the image in STL format. This would enable various output options and use with other digital image and design software.

Conclusion

Max provides a novel and innovative approach to the mounting of casts using a tablet, reinforcing the anatomical and aesthetic considerations when establishing a simulated patient case. The accurately mounted tangible casts provide substantial information for diagnostic and treatment planning, beneficial to dental students, new graduates and experienced clinicians. Compared with traditional approaches, such as facebow transfer, Max provides an easy, efficient and accurate method for clinical information acquisition that has benefits for both the clinician and patient. Its ease of use would perhaps encourage clinicians to consider utilising Max as a vehicle for obtaining crucial clinical data. This would enable greater overall communication, improved success in prosthesis fabrication, and a more satisfying experience for the patient and clinician.

Editorial note: The list of references is available from the publisher.

About the Author

Dr. Les Kalman is an assistant professor at the Division of Restorative Dentistry and chair of the Dental Outreach and Community Service programme at the Schulich School of Medicine and Dentistry at Western University in London, Canada.
Interview with Xavier Cherbavaz:
“We strongly believe in education, we are committed to be more present in the region.”

By Dental Tribune MEA/CAPPmea

DUBAI, UAE: The 2nd Ormco MENA Symposium took place on 4 and 5 December 2015 at the Jumeirah Emirates Towers in Dubai, UAE. Dental Tribune Middle East had an opportunity to catch up with Xavier Cherbavaz, Director for France and Emerging Markets.

DTMEA/CAPPmea: Could you tell us where is Ormco today?

Ormco is the largest company worldwide in orthodontics at this point, existing for over 50 years. At this moment the training of the professionals is the big part of Ormco mission. Also, most probably we are the company with the largest range of products, from the traditional to the twin brackets were you end wires toward the digital one were we deliver customized brackets with the right regulation and the wires that prevented so that the doctors spent time on adding value on the treatment plan and not spent lots of time in bandings. With this whole range we need to train our end user in order for them to be able to get to know the product.

DTMEA/CAPPmea: What is the main focus of today’s Symposium?

Our main aim is to keep a relationship with the costumer we serve, through the product to the education so that’s why we are here at this 2nd MENA Symposium. Additionally, Insignia and Damon are the main high end products of Ormco that we are presenting today during the Symposium in order for our users to expand their knowledge on those products.

DTMEA/CAPPmea: Do you spend lots of time with the end user?

Yes, we travel all the time to reach our costumer. We spend a lot of time with the end user. We are the innovating company, we try to launch new product, but also try to simplify the life of our client. Today, the training part is a big part behind so we try to spend as much time with them as possible in order to teach them about the new developments.

In the country where we are, orthodontics is a niche market, with limited number of people, they are all specialists. So generally there is in each country corresponding body where we know the orthodontists. Ormco is existing for over 50 years where we have relation wherever in almost each country someone has a product from us, which is a single spring or bracket or wires, maybe not all the range but some for sure. Orthodontics is a service industry so bring closer to the customer is the top priority for us.

Our primary focus is to work with orthodontics, now in some countries there are also cases where GPs are doing orthodontics, like let’s take Spain for example there is no orthodontists, there are mainly dentists. They don’t have a title of orthodontics because it doesn’t exist, in Italy, the specialization exists for only 4 years so for them is also something new so before there were mainly GPs. We are working market by market, France is specialist market, people with strong specialty, scientific bodies so we work with them a lot. We are the company that adapts by markets.

DTMEA/CAPPmea: During last year’s Symposium you shared with us that there are aspirations on organizing education programs. How is this going on?

It is going very well at this point. Over the past four years, there were no courses in the region, only few. In 2014 we organized 25 courses we had close to 1500 people coming to our courses, orthodontists. This year we have organized 50 courses and we have 2400 and we organize that all across the countries from Qatar to Egypt to Lebanon. Our aim is to be as close to the costumer as possible, so we organize courses as much as we can to their offices. Here we have selected Dubai as it is convenient to come and this is Symposium.

DTMEA/CAPPmea: Do you already have plans for the next Symposium?

Yes, of course. Next year we will have another Symposium in India, it will be the first one, we had one in South Africa last year and this was also the first one. Traditionally, when we enter the market for the first time, we organize Symposium and then a range of courses with different speakers in order to adapt to local needs from basic level to the advanced.

We strongly believe in education, we are committed to be more present in the region. This is what we did in last three years and what we continue to do. Ormco is the largest company worldwide so we have almost every philosophy of product to serve the orthodontics.■