
By Centre for Advanced Professional Practices

Dubai, UAE: May 2015 will mark a significant milestone in the history of the Centre for Advanced Professional Practices (CAPP) in Dubai. CAPP will be celebrating its tenth anniversary of successful continuing dental education not only in the United Arab Emirates but also across the Middle East. Through the hard work of its colleagues, sponsors, partners and supporters, CAPP has been able to establish first-class standards for continuing dental education programmes over the past decade. Participants and followers of CAPP programmes have also helped develop professional training according to the needs of the region with their open feedback.

CAPP is an ADA CERP-recognised provider that specialises in continuing medical and dental education programmes (conferences, hands-on courses, workshops, seminars and webinars).

Celebrate the 10th Anniversary at the Jumeirah Beach Hotel, DUBAI


By Dental Tribune International

Atlanta & Chicago, USA: In close collaboration with the Centers for Disease Control and Prevention (CDC) and the Organization for Safety, Asepsis and Prevention, the American Dental Association (ADA) has released information for dental professionals on Ebola virus disease, which is epidemic in West Africa. Among other recommendations, it provides advice on the treatment of patients recently returned from the region.

CDC and its partners are currently working to help prevent Ebola and other infectious diseases from being introduced into and spread in the U.S. As of

Health authorities offer Ebola guidance for dentists
Procter and Gamble Oral Care renews endorsement partnership with the Lebanese Dental Association in Beirut

By Crest & Oral-B

BEIRUT, Lebanon: During the 24th Beirut International Dental Meeting (BIDM 2014), held under the High Patronage of His Excellency the President of the Lebanese Parliament, Mr. Nabih Berri, a ceremony was organized to announce the renewal of the official partnership between P&G Oral Care and the Lebanese Dental Association, LDA at Riad el-11 Convention Center.

"Oral hygiene is a topic that quite often is overlooked" said Dr. Ashhad Kazi, Professional & Academic Relations Consultant – AP representing Crest and Oral B commented on the occasion: "The vision of Procter and Gamble Oral Care is to improve oral health of more people in more parts of the world more completely. This collaboration with the Lebanese Dental Association is one of the initiatives that we are proud of and keen on sustaining." Professor Elie Azar Maalouf, President of Lebanese Dental Association (LDA), stressed on the importance of this collaboration between the LDA and Crest and Oral B will provide to the retirement fund for dentists in Lebanon. He added: "We are specifically thrilled about the unique benefits that this collaboration between the LDA and Crest and Oral B will provide to the retirement fund for dentists in Lebanon."

The ceremony took place in the presence of the president and members of the Saudi Dental Syndicate, whereby Dr. Kazi presented Professor Maalouf with the newest innovation from Kolberg, Germany, a Bluetooth enabled Power Brush: The Oral-B White Pro 7000 that has just been released in the UK. Dr. Kazi added, "Oral hygiene is a topic that quite often is overlooked and not given its due importance in our daily lives, with newer oral care technologies now at our disposal, it can be a game changer in the fight for maintaining good oral health. Crest and Oral B have a long history of high quality research as such, they offer a comprehensive line-up of toothpastes, mouthwashes, toothbrushes and flosses which provide consumers with innovative, targeted solutions designed to meet all general and specific oral care needs."

With this collaboration for the second term, both Crest and Oral B and the Lebanese-Dental Association will not only be establishing more awareness about the right routine for good oral hygiene and its maintenance, but also providing unique benefits to the retirement funds of dentists in Lebanon.

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CEREC Omnicam

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Scanning with the new CEREC Omnicam combines powder-free ease of handling with natural color reproduction to provide an inspiring treatment experience for the patient. Discover the new simplicity of digital dentistry. Enjoy every day with Sirona.
By Sirona

BENSHEIM, Germany: Sirona and the Centre for Advanced Professional Practices (CAPP) organized the first ever “CEREC Desert Fest” with exciting discussions about the newest insight in digital dentistry, real-time demonstrations and an entertaining social program. The event held in Dubai from September 12-13 was aimed at both potential CAD/CAM users and experienced CEREC users.

Sirona presented the CEREC Desert Fest for the first time at The Palace Hotel Downtown Dubai, a beautiful hotel located in the city’s Old Town. More than 200 dental professionals took the chance to share their aspirations for Digital Dentistry and their experience with Sirona’s CAD/CAM system with dental colleagues from all over the world. In addition to pioneer and future CEREC users, dentists and dental technicians from the UAE, professionals from Bahrain, Egypt, Greece, Iran, Iraq, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Sudan and The Netherlands attended the event.

Volker Vellguth, Vice President Sales Russia, CIS, Middle East and Africa at Sirona: “With the CEREC Desert Fest we wanted to establish and strengthen the connection between our know-how and the experiences of CEREC users in these spectacular surroundings. Professional exchanges are important for the advancement of digital dentistry. We wanted to provide a stage for creative discussions for dental professionals and the more than 200 guests took advantage of this opportunity. We can proudly say that the event was a great success for us and CEREC!”

The guests clearly enjoyed this new and signature networking event. Filled with entertainment, panel shows, real-time CEREC-demonstrations, desert safaris and table clinic presentations in a beautiful Arabian flavored ambiance in the heart of Dubai.

Dr. Daniel Vasquez, San Diego: “What a wonderful experience, we had a great time. When I started my presentation I asked how can I bring Dubai to San Diego or San Diego to Dubai; it is simple, I made many new friends and I hope I can stay in the heart of many of the attendees and of course in all of you.”

The audience was well entertained at the CEREC Desert Fest in Dubai.

“The guests clearly enjoyed this new signature networking event.”

“Professional exchanges are important for the advancement of digital dentistry.”

Please visit the event’s website: http://cerecfest.cappmea.com.

Contact Information
Oct. 17, the ADA advises dental professionals of the following:

A person infected with Ebola is not considered contagious until symptoms appear. Owing to the virulent nature of the disease, it is highly unlikely that someone with Ebola symptoms will seek dental care when he or she is severely ill. However, according to CDC and the ADA Division of Science, dental professionals are advised to take a medical history, including a travel history, from their patients with symptoms in whom a viral infection is suspected.

As recommended by the ADA Division of Science, any person within 21 days of returning from the West African countries Liberia, Sierra Leone and Guinea may be at risk of having contacted persons infected with Ebola and may not exhibit symptoms. If this is the case, dental professionals are advised to delay routine dental care of the patient until 21 days have elapsed from their trip. Palliative care for serious oral health conditions, dental infections and dental pain can be provided if necessary after consulting with the patient’s physician and conforming to standard precautions and physical barriers.

In general, providers of dental health care services should continue to follow standard infection control procedures in the clinical setting as described in CDC’s 2005 Guidelines for Infection Control in Dental Health-Care Settings, the organization stated.

Signs and symptoms of Ebola include fever greater than 38.6°C or 101.5°F and severe headache, muscle pain, vomiting, diarrhea, stomach pain, or unexplained bleeding or bruising.

CDC emphasized, “The virus is spread through direct contact with blood and body fluids of an infected person, or with objects, like needles, that have been contaminated with the virus.
Utilizing the Tempcap abutment with CAD/CAM
Combination of Tempcap, in-office CAD/CAM and e.max allows for final restoration

mCME articles in Dental Tribune have been approved by:
HAAD as having educational content for 2 CME Credit Hours
DHA awarded this program for 2 CPD Credit Points

By Dr. Les Kallman, USA

The E4D in-office CAD/CAM unit (Editorial note: Planmeca E4D Technologies) has been employed in an investigative laboratory study to design and mill an unconventional IPS e.max restoration that would be coupled with the Tempcap as a final implant-supported crown. The combination of the Tempcap, in-office CAD/CAM procedures and IPS e.max allows the clinician to create an immediate final restorative product with ideal characteristics.

The procedure is a simple, efficient and effective solution for the restoration of implants.

Introduction

The temporization of a dental implant following surgery, particularly in the anterior region, is a necessary procedure. The temporization allows for surgical healing, preservation of the gingival architecture and, most importantly, replacement of a tooth in the edentulous space for patient acceptance. Several techniques for the temporization exist, but the process has proved to be time-consuming and frustrating. The Tempcap abutment and the process for temporization were created to provide a simple yet effective approach.

The advent of CAD/CAM technology and e.max, the potential of the Tempcap to act as a final abutment seemed likely and suitable for investigation.

Background

Following the surgical placement of a dental implant, several requirements must be met to maximize healing and osseointegration of the implant body to bone:

- Minimal forces, if any, should be exerted on the implant body, permitting proper healing and preventing a non-osseous union.
- The gingival architecture must be managed meticulously to prevent contamination, minimizing the risk of peri-implantitis and possible failure.
- There must be sufficient time for the process of osseointegration.

Temporization and immediate restorations should not violate these factors.

The Tempcap is a healing cap and restorative platform combined (Fig. 1). It has an all-metal construction, and it contains two to three retentive pin projections (Fig. 2). Tempcap is available in different widths and heights to accommodate different implant sizes (Fig. 3) and is compatible with existing instrumentation (Fig. 4).

The function of the Tempcap is to:
- allow for optimal gingival healing;
- prevent contamination of the surgical field;
- minimize forces and microvibrations on the implant;
- facilitate the simple yet successful restoration of the implant (Fig. 5).

CAD/CAM stands for computer-aided design and computer-aided manufacturing. CAD enables the individual to digitally capture an image of a prepared tooth or structure and then design an indirect (out of the mouth) restoration by using software.

After the ideal restoration has been produced, the design is then fabricated out of a material by a milling machine. In-office E4D units (Editorial note: Planmeca E4D Technologies) are currently available to allow for immediate chairside fabrication without the use of a commercial laboratory.

IPS e.max (Ivoclar Vivadent) is a relatively new metal-free dental material used in indirect restorations. It is an aesthetic material composed of lithium disilicate and has ideal physical and aesthetic properties, allowing it to be the first choice for CAD/CAM restorations. IPS e.max has strength second only to gold and has the ability of detailed CAM production.

Methodology

The Tempcap was selected and placed on an Ankylos (DENTSPLY Implants) implant body (master cast with soft tissue) (Fig. 6). Digitization was achieved by using an E4D camera (Editorial note: Planmeca E4D Technologies) (Fig. 7), in which several images were captured to compile an accurate image (Figs. 8 & 9). CAD design was used with E4D software (Editorial note: Planmeca E4D Technologies) to determine and delineate margins (Fig. 10).

Tooth design was initiated incorporating several parameters:
- ideal aesthetics and emergence profile (Fig. 11);
- adequate proximal contacts;
- appropriate occlusal scheme;
- material thickness requirements;
- internal surface morphology to adapt to Tempcap;
- design that can be milled via CAM technology.

Numerous design iterations were required to achieve the desired design requirements (Figs. 12–14). IPS e.max was selected for milling (Fig. 15) and was executed by an E4D CAM unit (Editorial note: Planmeca E4D Technologies) (Fig. 16). Milling limitations, such as bar contact and prosthesis fracture, required CAD design modifications. Reiterations in CAD/CAM design were carried out until a successful restoration was achieved (Fig. 17).

The unfired IPS e.max crown was tried for fit and aesthetics and then subsequently fired (Fig. 18), resulting in its colour change. The crown was further stained, glazed and fired (Fig. 19), resulting in its final position (Fig. 20).
The restoration's internal aspect (Fig. 21) was assessed for path of insertion, retention and fit. A secondary investigation utilized a more complex Tempcap to assess the limit of the CAD/CAM unit's capability. A stand-alone Ankylos (DENTSPLY Implants) implant body was coupled with a Tempcap abutment with three retentive projections (Fig. 25). The abutment was digitized with the same methodology as described. An IPS e.max crown was executed and assessed (Figs. 24 & 25).

Discussion
This study has determined that the Tempcap can be successfully designed and milled by in-office CAD/CAM technology (Editorial note: Planmeca E4D Technologies) to create an ideal prosthetic crown from IPS e.max within a laboratory setting. CAD software can be manipulated to generate forms beyond the scope of the unit. Complex units, such as the three-pronged Tempcap may be successfully designed and milled. IPS e.max has the capability to be milled in complex patterns, while still maintaining its structural integrity. However, further laboratory studies, quantitatively assessing stresses and strengths and utilizing a larger sample size, are required to validate the concept. Subsequent clinical investigations are required to assess the clinical significance and viability of the Tempcap with CAD/CAM technology. The potential to fabricate the Tempcap entirely from e.max should also be considered.

Conclusions
In-office CAD/CAM technology can be utilized and manipulated to generate digitized forms beyond the scope of the morphogenesis. CAD manufacturing has limiting factors that must be realized when producing modified prostheses. CAD modifications must account for these discrepancies. IPS e.max has the ability to be milled in extremely detailed designs. The Tempcap can be optically scanned and digitized in order to design and create a CAD/CAM IPS e.max restoration using E4D technology. The utilization of the Tempcap as a successful provisional abutment has been documented; the utility of the abutment as a simple, efficient and cost-effective component seems promising. These advances simplify the procedure and reduce the cost, ultimately allowing a greater accessibility for both patients and clinicians.

Editorial disclaimer: Dr Les Kalman is the co-owner of Research and the inventor of the Tempcap.

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References
The aesthetic challenge

By Dr. Mohamed El Sayed Hassanien, Egypt

Patient’s satisfaction has always been the main goal of achieving a perfect and aesthetic treatment. As the popularity of esthetic dentistry increases, a growing number of patients are seeking treatment for improvement of aesthetical and functional outcomes. Consequently, several treatment options have been proposed to restore the pleasant esthetic appearance that the patient is always seeking.

Based on the conservative approach and minimal invasive dentistry protocols, ceramic laminate veneers have been introduced to satisfy the patients growing aesthetic demands. Many construction techniques have been utilized in the dental market whether directly or indirectly to fabricate ceramic laminate veneers.

CAD/CAM being state of the art dental technology offers lots of merits for both the clinician and the patient. Being a chair side same day procedure, utilizing intra oral scanning avoiding conventional physical impressions, and long-term provisional restorations thus producing an aesthetic all-ceramic restoration with highest degrees of accuracy and precision.

Case presentation
A twelve year girl, medically healthy, denies taking any medications visited my clinic complaining of fractured upper two central incisors Fig. 1 & 2. After clinical and radiographic examination, which revealed complete tooth fracture, two ceramic veneers for both central incisors were proposed as a treatment option to solve her complaint.

Tooth preparation
Tooth preparations were made using the depth-guided diamond wheel no. 018 to indicate the facial reduction amount of 0.4 mm for both teeth. The labial diamond bur no. 016 was used to complete the preparation on the labial surface and precisely reproduce the cervical finish line located just below the free gingival margin Fig. 3.

Intra oral scanning
Sirona Omnicam was used to scan the upper, lower and buccal crowns to formulate the 3D virtual colored model. The virtual design was proposed ending with a butt joint on the Incisal edge and not involving the palatal wrap around.

In Lab SW 4.2.3 was used to scan, design and mill these two veneers.

The case was administrated as a virtual design technique, material was selected from Ivoclar Vivadent Empress Cad Fig.5.

Intra oral scanning
Sirona Omnicam was used to scan the upper, lower and buccal crowns to formulate the 3D virtual colored model. Margins were determined for each tooth separately and insertion axis were determined depending on their corresponding path of insertion.

Virtual design
The virtual design was proposed with the SW, both veneers were virtually linked as a group so they were both virtually active. The bio generic variation tool was used to give the best morphological proposal to match the adjacent teeth. The virtual tool was used to show the veneers proportions to ensure that the two veneers showed similar length to width relations Fig.6.

With the two veneers linked, restoration virtual translucency tool was used to check the amount of ceramic extension in relation to the underlying tooth preparation Fig.7.

Shade matching
Visual shade matching was used for this case, Where the adjacent sound teeth showed A1 shade. Empress Cad blocks being a Lucite reinforced ceramic material was chosen for this case with a low translucency in order to mimic the adjacent shade of the teeth. Try in stage was done for the patient before glazing to check for proper seating and accuracy of the margins.

Glazing and characterization
Both veneers were seated properly with the object to fix putty material for better handling during glaze and stain process.

Empress Cad paste glaze was the material of choice for glazing the two veneers. In order to match the adjacent teeth, Empress Cad white stain was used on the middle and Incisal areas in a scattered pattern with a thin brush to give the natural white stain effect. Single cycle was used for staining and glazing together Fig.9.

Cementation procedures
- Ceramic veneer surface treatment:
  - HF 4% Empress etching gel was

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KaVo MASTeRsurg LUX Wireless: Redefining the best

With the successful launch of the EXPERT-surg LUX surgical unit and the SURGmatic instruments KaVo recently celebrated its comeback as a main player in the dental surgery field. As one of the world market leaders the dental company now presents another highlight: The MASTeRsurg LUX wireless surgical unit. Thereby KaVo confirms its market position as a leading and innovative international dental player.

The new KaVo MASTeRsurg now completes the attractive KaVo surgical portfolio and redefines surgical standards. Therewith all dentists and dental surgeons, no matter what their different individual needs are, will find the perfect solution for their surgical work. The KaVo MASTeRsurg surgical unit convinces through outstanding comfort. It is offering a wireless foot control, allowing the user a great freedom of movement. The data documentation function supports procedure by real time displaying of the torque and other important digital data and saving it concurrently. KaVo MASTeRsurg makes it real: a customizable surgical unit that adapts to dentists’ and dental surgeons’ individual requirements. E.g. multiple programs, each with up to 10 treatment steps, maximum speed, maximum torque and even more parameters can individually be defined and saved.

The new INTRA LUX S600 LED, one of the lightest and smallest surgical motors in the world, enables to work with high power and precision. When it comes to performance and comfort, KaVo continues to set the benchmark with the EXPERT-surg and the MASTeRsurg controllers, the SURGmatic instruments (now available with hexagon clamping system with optimized head gearing) and the INTRA LUX S600 LED motor. All these components combine to a system for dental surgery that is not only easy to use but that provides save and highly precise tools for dentists and dental surgeons to face their daily challenges.

A new member of the legendary product family

Nobel Biocare to join Danaher dental business

By Dental Tribune International

ZURICH, Switzerland/CHARLOTTE, N.C., USA: Today, Danaher, a U.S. health care conglomerate of brands from various industries, and Swiss dental manufacturer Nobel Biocare announced that the two companies have entered into a definitive transaction agreement. In order to further expand its global dental business, Danaher has offered to buy Nobel Biocare, which is the second-largest supplier of dental implants worldwide, for CHF2 billion (US$2.1 billion).

As reported by Dental Tribune ONLINE earlier this year, Nobel Biocare confirmed that it had been approached at the end of July by third parties with a potential interest in acquiring the business. Now, the company’s board of directors has unanimously decided to recommend that Nobel Biocare’s shareholders accept the offer, which in
In this article, you will be introduced to the concepts, goals and techniques needed to diagnose surgical cases, when surgical cases should be started and how to gain the knowledge needed to create successful results. We'll delve into joint status, soft-tissue analysis, surgical treatment objectives, pre-treatment surgical setups and surgical setups. We'll then follow-up by looking at the concepts of natural head position, the axis-horizontal plane and the true vertical line will be introduced. By the end of this article, you should have:

- An overview of the knowledge needed for successful treatment.
- An introduction into what, when and how to perform successful cases.
- A need of joint health.
- A summary of the soft-tissue analysis.
- An outline of the surgical treatment objective.
- An overview of diagnostic and surgical setups.

Remember that this article is an introduction only; it's not intended to teach you how to do surgical cases. Advanced training will be necessary to master successful orthognathic surgical cases. So with no further ado, let's get started.

**Functional Occlusion**

The goal is to obtain functional occlusion. Before treatment, you have to determine if you have an orthognathic surgery case. You don't want to begin orthodontic treatment with the idea that if orthodontics fails, you will do surgery.

You'll see in Figures 1-5 that this case involves every facet of dentistry. Changes occurred not only in the facial features, but also in the teeth themselves. It involved orthodontic and orthognathic surgery, but also lengthening the front teeth by the restorative dentist to achieve the natural smile in balance (Figs. 1-2). To this end, we need to look at five areas:

- **Joint status**
- **Soft-tissue analysis**
- **Surgical treatment objective**
- **Pre-surgical setup/surgical setup technique**
- **Surgery**

**Joint status**

Starting with the first area, you need to know the joint status. Is the joint healthy, is it degenerating, is there a disc problem? This means you'll need to apply not only a good clinical exam, but also articulated models that can measure the difference between centric occlusion and centric relation.

**Soft-tissue analysis**

You'll need to know how to analyze the soft tissue. You'll need this because you are looking at everything from a soft-tissue standpoint, or put another way, you're recording the basic measurements that come from soft tissue, not hard tissue. If you deal with hard tissue only, then you will come up short in the soft tissue. Ignoring the soft tissue will result in a face that's not improved, just different.

**Surgical treatment objective**

You need to know how to do a surgical treatment objective. You'll need to know the technique, and you'll need to know how to apply it because the surgical treatment objective allows you to treat the face, the occlusion, in a two-dimensional medium.

**Pre-surgical setup/surgical setup technique**

Once you have established what you'll need to do from the surgical treatment objective, you'll need to do what we call a pre-surgical setup. Otherwise you'll need to apply the knowledge you've gained from the patient, soft-tissue analysis and the surgical treatment objective, and perform a three-dimensional workup to make sure what you have planned will work with the joints, muscles and nervous system.

**Surgery**

Finally, you need to know surgery. I recommend that the orthodontist be in the operating room so you know what the surgeon is doing, and how the surgery goes. It's very important to know that the surgeon gets the joints seated in a passive manner. If the joint is stressed, then there's a good chance that we'll have some surgical relapse.

**Joint status**

Joint analysis will include three portions: history, a clinical examination and imaging.

**Clinical examination**

Next is the clinical examination. Clinical examination includes the following:

- **range of motion**
- **symmetry of jaw motion**
- **palpation**
- **auriculotemporal nerve**
- **masseter splinting**
- **CR position**

Range of motion should be between 45 mm and 55 mm on opening and includes assessing movement. We're looking for a symmetrical mandible motion — meaning the chin should not deviate to the left or right on opening — and it should be relatively free of dental interference.

Now check for palpation of the muscles of mastication. If you don't check the muscles that move the mandible, then there's a good chance that you'll miss some sort of functional bite issue. We also listen to the joint with a stethoscope, and we apply some anterior pressure to the disc through external auditory meatus to make sure the disc is functioning properly.
LCBCT
Most of the time, we start with cone beam because it’s easy to obtain a 3-D image of the joints. Thanks to the work of Rickets and Dr Ikeda, we have a way to measure joint position and get an idea of how the condyles are basically seated. With cone beam, we can measure the health of the condyles.

Our imaging showed a joint that is in a state of degeneration. The condylar head has changed in vertical height. Therefore, we would expect to see an asymmetrical opening where the chin deviates to the affected side. In all three views (sagittal, coronal and axial), we have a condyle that is actually changing, especially when you make a comparison to the left condyle (Fig. 5).

In a side-by-side presentation, you can see that the left side is definitely in a lot better shape, having a more rounded effect to it. The size of the coronal view is one that shows a definite symmetric outline to it as compared to the other side. The axial view confirms this; you see that the shape is better and has a more dense outline.

Thus, our basic imaging system helps us determine if you have a transverse problem occurring in the joint.

In the coronal view, we can even see that there may be some sort of cyst formation. When you compare the right side to the left side in the coronal view, you get a more traditional image of what is our joint space. If we go to the two-dimension-al view, created in the cone beam, we can see that the right joint has definitely lost vertical height, and we definitely have a joint spacer that is excessive (Figs. 4 & 5).

In the sagittal view, the right side, the joint looks pretty normal. However, if we look at it in a transverse direction, you’ll see less of the joint space laterally than you would do medially, something we see in both the left and right joints (a normal joint space, right side). That’s why it’s important that you not only look at a sagittal view, but you also need to look at the coronal view to see if you have a transverse problem occurring in the joints.

Soft-tissue analysis
When we’re trained in orthodontics, we’re trained in hard-tissue analysis, otherwise all of our cephalometric analysis are based on hard structures. If you use hard structure to determine soft-tissue corrections, then you also have to use good soft-tissue aesthetics. That’s why a soft-tissue analysis is so important.

Using soft-tissue markers with 3-D facial mapping, we are able to diagnose the soft tissue, and we can also relate it to the hard tissue.

In Figure 4, we’ve overlaid the soft tissue on top of the hard tissue. With the markers on, after we convert it to a two-dimensional X-ray, we can see where the sub-papill area is, where the cheekbones are and where the alar base is. In addition, you will see a marker that we call a hinge access marker, which comes from establishing the true hinge axis of the patient. There is also a marker that’s placed on the nose that we call the horizontal point. We are going to analyze everything from a basic coordinate system of a true vertical to an axis horizontal.

The image is orientated from the axis horizontal plane and the true vertical plane, which is based on the patient’s natural head position.

Figure 5 shows how these two corners are at 90 degrees from each other. In this analysis, we’re recording all of the soft-tissue measurements, both horizontal and vertical, and we’re going to base them on the line that runs through the subnasale (SN). This establishes the true vertical line based on natural head position.

Furthermore, we’re including a few hard-tissue measurements that will tell us about the architecture of the mandible. These come from Rickets and from the Jarakah analysis. With this analysis, we can cover the basis that we need for orthodontics, but we can also cover what we need in a surgical articulator. This allows us to orient the CBCT data with the articulator mounting.

Now we have the true axis-horizontal plane and the true vertical line combined, and now facial, skeletal and functional issues can be assessed.

In the example we are using, the patient has a mandible that has an archbite with an anterior open bite. This is precisely the kind of case where you would be looking for degenerative joint disease. All of the above enables us to establish the parameters and coordinates we need to analyze the face and occlusion and then apply the correct treatment so the patient will have a functioning stable occlusion with the necessary facial improvements.

Soft-tissue analysis
The treatment objectives are based on the soft tissue. You perform the surgical treatment objective in this order.

1) Establish the position of the upper lip to the true vertical line in a vertical and horizontal manner.
2) Determine what you need to do with the anterior teeth to create the correct upper lip position.
3) Once you established the anterior part of the maxilla, then proceed to the posterior part of the maxilla and determine if you need to do an intrusion or extraction of the posterior segments to level the occlusal plane.
4) If you have transverse asymmetry, metrics where the occlusal plane is cantled instead of level. This is especially true in cases where there’s a degenerative process happening in one joint.

All of this enables us to assess third of the face. If you still find the chin is too far forward or too far back, you may need to do genioplasty.

In the example case (Fig. 8), we have performed a surgical treatment objective, established the true vertical line and we have our axis-horizontal plane. In this patient, we need to move the anterior teeth up because in the frontal analysis the patient showed too much tooth structure and too much gingival tissue. To fix this, we balance the maxillary anterior teeth based on the upper lip position.

Once we’ve established the correct tooth position in the anterior, we’re able to set up our occlusal plane at 95 degrees, showing us what we need to do with the posterior segment. In the example case, we need to extrude the posterior segment.

Figure 9 shows how we’ve completed the extrusion of the maxillary segment, and we’ve balanced the occlusal plane. The next objective is to place the mandible with the correct overbite. This is not 2 mm but 4 mm. This is because you want to have an adequate overbite to create adequate discusion. In establishing the mandible, you can see in our example how the lower part of the face is placed normally enough with the true vertical line (Fig. 10).

In establishing the surgical treatment objective, we see that we want to place the anterior section in the superior direction and the posterior in the inferior direction. These are all the measurements we need to establish a surgical setup. Hopefully, this is performed preoperatively so the patient has a good idea of what needs to be done.

Pre-surgical and surgical setups
The pre-surgical and surgical setups are techniques that do require the clinician’s time. It’s...
The importance of cementation: A veneers case using a new universal cement

By Kerrex

E

nthetic options in dentistry are the prevailing choice of most patients today. Veneers and bleaching in particular have become buzzwords in popular culture, and TV sitcoms, film and magazine advertising have turned these cosmetic techniques into household names. As a result, dental teams must accommodate the demands of their patients, becoming highly versed in placing metal-free restorations.

Practitioners can find a multitude of educational articles and courses teaching the science and technology of porcelain, zirconia and composite. But while emphasis is frequently placed on the final prosthesis or direct restoration, often overlooked are the increasingly important auxiliary materials that contribute equally to the clinical success of these new materials and restorations: impression and provisional materials, bonding agents and cements. Education is imperative because cementation and bonding are two areas of esthetic dentistry that have evolved through generations of products and techniques.1 These processes are essential in making esthetic restorations both functional and comfortable. That’s why veneering can be an optimal, conservative alternative to crowning teeth, since preservation of tooth structure is important to dentists and patients alike. The highly esthetic results are due to the fact that ceramics have a translucent finished surface texture similar to that of natural enamel.2 Therapists, assistants and lab technicians spend vast amounts of time and effort perfecting veneers, avoiding fracture through painstaking preparation, material and shade selection, fit and fabrication. Yet even after such arduous processes, clinical failure and patient dissatisfaction readily occur with errors in cementation.

Cementing veneers is a delicate process with a historical litany of potential problems – color instability, insertion difficulty, handling and cleanup issues, unsatisfactory radiopacity, low translucency after curing, mismatch between try-in gels and final cements, and debonding, to name a few. Cement selection in certain applications necessitates knowledge of the chemistry and physical properties of the particular cement type, and insertion requires an exacting technique for successful clinical results.3

This article outlines a veneer case using NX3 Nexus® Third Generation—a new, universal cement from Kerr. The subject is a long-standing patient-of-record with a current radiological and medical chart. This focus is on the steps and techniques implemented at final cementation of the prostheses.

Clinical Case

A female patient in her mid-fifties presented a chief complaint of being unhappy with her smile. An examination of her hard tissues revealed immediate concerns of multiple fractures, hypocalcification, shortened anterior teeth due to wear and an asymmetrical smile line (Figures 4 and 2). After proposing a first phase treatment plan to restore all of her compromised upper anterior teeth, the patient consented to restoring only teeth numbers 6-11. The patient ultimately came highly versed in placing metal-free restorations.

Prior to preparation, the tissue was cleansed using NX light-cure cement in the clear shade (Figure 9). The cement was dispensed directly onto the tooth surface and cured for 10 seconds using the L.E. Demetron II curing light (kerry) (Figures 7 and 8).

After etching and bonding, the veneers were cemented using NX light-cure cement in the clear shade (Figure 9). The cement was dispensed directly onto the tooth surface and cured for 10 seconds using the L.E. Demetron II curing light (kerry) (Figures 7 and 8).

Figure 1: Pre-up

Figure 2: Interior upper pre-up

Figure 3: Temps off sect 8232DC4

Figure 4: Esxapsyg tanker 8232DC3

Figure 5: Kerr etch

Figure 6: Optibond Solo Plus

Figure 7: Curing Solo Plus

Figure 8: Cured bonding agent

Figure 9: Veneers w NX3 8222186

Figure 10: Cleaned cement8232DC7

Figure 11: Final shot da

Figure 12: Final Act and dual-cured

Figure 13: Post-op

Cementation is an important aspect of functional aesthetics. An understanding of chemistry, technology and physical properties are all essential to proper usage and clinical success. Cement selection was the driving factor in choosing the bonding system for this case. NX3 Nexus® Third Generation cement is free of amines—organic compounds containing nitrogen as their key atoms—which were largely blamed for the colour shifts so prevalent with earlier cement formulations. In an earlier use of the product the cement proved to be “fluoropic”? the consistancy of non-drip paint, the restorations were seated and adjusted before curing with no dripping or running. Color match, ease of use and cleanup, color match and optimum retention are some of the attributes necessary when choosing a cement—NX3 met all of these expectations.

References

About the Author
Dr. Mitch Conditt, a 1985 graduate of Baylor College of Dentistry in Dallas, TX, lectured internationally and has published numerous articles reviewing all aspects of restorative and cosmetic dentistry.
Conservative approach to multidisciplinary aesthetic dental treatment

By Kostis Giannakopoulos, Greece

The aesthetic performance of dental restorations has always been a factor of utmost importance in the success or failure of the treatment. Lately, as aesthetic awareness of the population increases and the evolution of dental materials have made new techniques possible, optimal aesthetics can be achieved following less invasive restorative procedures. In many cases, multidisciplinary treatment is necessary so that the best possible outcome is achieved with a minimum degree of compromise between invasiveness and aesthetics. Every complex case should be treated planned by a team of specialists, so that every detail and opinion from each point of view is taken into account. The restorative dentist usually designs the smile and oversees each phase of the treatment by other specialists.

Congenitally missing lateral incisors are a common dental problem that can be esthetically dealt in three different ways: 1. canine substitution, 2. tooth supported restoration, and 3. implant supported restoration. Tooth auto transplantation (usually premolar) and removable implant supported restoration.

Tooth auto transplantation (usually premolar) and removable implant supported restoration.

1. canine substitution, 2. tooth supported restoration, and 3. implant supported restoration. Tooth auto transplantation (usually premolar) and removable implant supported restoration.

The chief complaint of the patient was spaces between the teeth and specifically the missing upper left lateral incisor tooth, the irregularly shaped upper right lateral incisor, and the diastema between teeth #11 and 21. Also, she was concerned about asymmetries in her smile and misalignment of her teeth. Finally, the patient stated she would like to have a brighter smile (Figures 1-3).

The dental examination revealed no pathological findings or signs of dental disease. The DMFT was low and the comprehensive periodontal examination was within normal limits; soft tissue examination resulted in no pathological findings; radiographic imaging revealed no pathological findings as well.

The aesthetic evaluation of her smile resulted in the following issues that would need to be addressed in the treatment plan: 1. peg shaped lateral incisor #12, 2. congenitally missing lateral incisor #22 with diastema between #11 and 21, 3. dental midline transmitted to the right by 4mm, 4. asymmetry between the left and right side, especially in the space between #11-13 and 21-23, 5. gummy smile, especially on the area of #12 and the missing tooth #22, and 6. the gingival zenith was asymmetrical between #11 and 21 (Figures 4-6, Table 1). The occlusion was Class 1.

The base shade of the teeth was A3 on the upper central incisors and A3.5 on the upper canines with the Vita Classic Shade Guide (Vita Zahnfabrik, Bad Sackingen, Germany). Photographs and alginate impressions were taken in the exam appointment to fabricate study models. Then the team of aesthetic/restorative dentist, orthodontist and periodontist treatment planned the case. The recommended treatment plan was accepted by the patient in favor of the alternative treatment plans.

Orthodontic phase

The orthodontic treatment goals were as follows: 1. intrude #11 to align the incisal edges of the centrals, 2. equalize the spaces between #11-13 and #21-23, 3. transfer the dental midline to the left, and 4. correct misalignments and minor rotations in different areas. Some composite resin was bonded on the facial surface of tooth #12 to facilitate bracket placement. The composite was made in shade to

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<td>21-22</td>
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Notes

Table 1: Teeth and spaces between them were measured. The proportions of the teeth (length to width ratio) and the arrangement of the spaces were crucial information in treatment planning, especially in patients with a high lip line.

Figure 1 - 3: The unaesthetic smile of the patient before treatment.

Figure 4 - 6: Retracted view of the teeth before treatment. Note the peg shaped #12, the missing #22 and the asymmetry of the spaces between teeth #11-13 and 21-23.

Figure 7 - 9: Photographs of the patient during the orthodontic phase of the treatment.
A multi-disciplinary approach to minimally invasive functional aesthetic dentistry

By Dr. Tif Qureshi, UK

Simple tooth alignment is rapidly becoming accepted as the norm in cases that previously would have been treated with porcelain veneers. However, patients often present with a mix of problems such as previous metal ceramic work, the treatment of which should be integrated as part of the treatment plan. Timing becomes a vital part of the treatment when mixing restorative care, alignment, tooth whitening and occlusal planning. The following case illustrates an effective approach to treatment.

Case report
A patient presented complaining that “his two front teeth [old upper anterior crowns] felt as if they were too large and were always hitting the lower teeth”. In addition, his bite never felt “right” (Figure 1). He also wanted to try to improve the appearance of his teeth. He was aware of what could be done with porcelain veneers, but wanted to try to make the best of his own teeth.

Examination
On inspection, it was clear there were several issues:
1. Occlusion - The irregular alignment of the lowers and the thickness of the upper old crowns were adding to the problem of unbalanced anterior contacts. The back of the crowns, especially the upper left central, were hitting the front of his lower teeth, in particular the lower left central.
2. Thickness/aesthetics of crowns - The occlusion meant that the upper crowns had been placed quite labially and because they were metal ceramic, made them feel particularly thick. Research on aesthetics has shown that only 1 mm of movement was needed for the uppers and a thickness of about 2.5 mm of movement was required for the lowers. Inman Aligners are much faster than clear aligners with these kinds of movements. And 2-3 clear aligners with these kinds of movements are likely to need, with Inman Aligners, we never carry out in one go. Only IPR strips or discs are used. This gives the opportunity to ensure the stripping is far more anatomically respectful than using burs or heavy discs. This massively reduces the risks of excess space formation, gouging or poor contact anatomy. No more than 0.15 mm per contact on the posterior teeth was adjusted on this single visit. The contacts are smoothed and fluoride gel is applied each time.

Treatment
On the initial appointment the two old crowns were removed (Figure 2). The preps were merely cleaned and treated as conservatively as possible. Temporary crowns, which could be adjusted, were placed (Figure 5). Upper and lower impressions were taken for upper clear aligners and for a lower Inman Aligner. A prescription of the tooth movement using Spacesaver软件 was given to the technician so they were aware of exactly where we wanted the teeth to be moved. Spaceaver also calculates a figure for the amount of crowding present giving us an idea of the total amount of space that would need correcting and whether the case is suitable for Inman Aligners or not.

Two weeks later, the patient returned. The Inman Aligner and clear aligner were fitted on the lower and upper teeth respectively. Minimum interproximal reduction (IPR) was started. Despite knowing how much we are likely to need, with Inman Aligner treatment, we never complete all the IPR in one go. Despite calculating the amount of crowding present, the IPR is never carried out in one go. Only IPR strips or discs are used. This gives the opportunity to ensure the stripping is far more anatomically respectful than using burs or heavy discs. This massively reduces the risks of excess space formation, gouging or poor contact anatomy. No more than 0.15 mm per contact on the posterior teeth was adjusted on this single visit. The contacts are smoothed and fluoride gel is applied each time.
The patient was then sent home. The Inman Aligner was worn for 16-20 hours a day with the patient returning 2 weeks later, it was clear that the contacts had closed tight and the teeth had moved a little.

More IPR was carried out on both the upper and lowers. The occlusal contacts of the upper temporary crowns were adjusted to allow clearance for the lower teeth to move and the lower left lateral to advance particularly and the patient was then sent away again for 2 weeks. The temporaries were also facially contoured to ensure they were flush with the natural teeth. On the subsequent return visit, it was clear that the teeth were aligning rapidly and especially well (Figures 4 and 5). We then decided to start some simultaneous tooth whitening. Impressions were taken, even though the result was still 25% from completion. Sealed, rubber trays were made and careful instructions given to the patient. While the patient was concentrating on using the Inman Aligner, they are always highly receptive to using bleaching trays. It adds greatly to motivation and often means they achieve a far better result. DayWhite from Oral Healthcare (Formerly Discus Dental) is used so that the patient only needs to wear the bleaching trays 55-45 minutes a day.

The patient returned after another 3 weeks and was happy with what was achieved. Upper and lower alignment was now complete. An impression was taken for a lower retainer wire to be fitted later. The temporary crowns were removed, the prep cleaned with CHX and new impressions were taken after some minor adjustments to the incisal margins.

A new lower impression was taken of the final lower occlusion to ensure the crowns could be made with a good long centric contact. The temps were replaced and impressions sent to the laboratory. The patient booked in for a shade one week later and two weeks after cessation of bleaching where colour and tooth morphology was examined and discussed with the patient. Two weeks later, the patient returned. A retainer wire was bonded to the lower incisor teeth using a preformed wire on a jig made by the orthodontic technician. The temporary crowns were removed and new IPS e.max F (Ivoclar Vivadent) crowns were bonded using Variolink II (Ivoclar Vivadent) and Optifluid FL (Iv1er). The occlusion against the aligned lower teeth was checked. The patient was extremely happy with the end result and felt his teeth looked natural (Figures 6-12).

Discussion

The case is another example of how a progressive form of smile design can be so essential in any case where a patient is looking to improve their smile. At every point, the patient sees their smile improving, first with the removal of the temporary crowns and then with the bleaching. If they are still keen to have full crowns, then at least the teeth are straight and light, so less invasive and more translucent veneers can be used. More often than not, patients prefer a more natural result where we make “their own teeth look as good as they can”. In a case like this with previous metal ceramic crowns, one can see how integrating alignment, and whitening can enhance aesthetics and simplify restoration dramatically. This makes a stable and aesthetically pleasing outcome far easier to achieve (Figures 13-17).

Conclusion

In each of our practices, there must literally be hundreds of patients who have issues similar to this gentleman’s complaint. Previously, conventional solutions often placed a barrier to treatment, taking time and cost into what was already an expensive treatment. Most patients just could not be bothered and would live with it. Now, simple anterior alignment can be so much quicker and more cost effective. I’m amazed at the sheer volume of patients who will have treatment like this done if they are suitable. Being able to combine whitening because the aligners are removable is just another bonus so we can capitalize on the patient’s current composure and get an even better result. Of course, case selection is absolutely vital! Understand what is treatable and what should be referred to a specialist orthodontist is essential. This means that patients must be fully consented and understand the risks and disadvantages of not treating any posterior issues if just concentrating on anterior alignment.

Disclosure

Dr Qureshi runs courses with Dr James Russell and Dr Tim Bradstock-Smith and lectures on the

References


Acknowledgements

The author thanks Inman Aligner Certified Laboratory, Pearl Healthcare, Hampton, Victoria; Donal Inman CDT and the Inman Orthodontic Laboratory; Nimrodental Inman Aligner Lab, London; Tony Knight at Knight Dental Design; and Middle East Dental Laboratory, Dubai.

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Dr. Tif Qureshi is Immediate Past President of the British Academy of Cosmetic Dentistry. He has a special interest in minimally invasive cosmetic dentistry and presents hands-on courses and lectures on the Inman Aligner worldwide.

Dr. Tif Qureshi teaches Inman Aligner Training. Inman Aligner courses can be booked at: www.inmanalignertraining.com

For course info visit: www.inmanalignertraining.com or email: inman@inmanleisure.com
make it easier to distinguish and completely remove it after the orthodontics was completed. After treatment, the goals set were accomplished (Figures 7-9).

Surgical phase
As stated previously, the dental team decided to align the incisal edges of #11 and 21 and not intrude further #11 to align the gingival zeniths. This decision was based on the fact that the teeth showed no signs of wear, in which case the worn tooth would be intruded more to be back in its original pre-wear position and then would be treated restoratively. The goals of the periodontal surgery were:

1. Align the gingival zeniths of teeth #11 and 21, 2. gingivectomy with osseous reduction on #12 to reduce as much as possible the gingival display without compromising the long term prognosis of the tooth due to loss of periodontal support, 3. gingivectomy in mostly all the upper teeth to bring the gingival display to a more pleasing appearance. After surgery, a healing period of 8 weeks was recommended by the periodontist before the restorative procedures start (Figures 10, 11). The option of a single implant placement for the missing lateral incisor #22 was rejected before surgery, as an additional bone grafting procedure would be required and this was not accepted by the patient (Figure 12).

Aesthetic/Restorative phase
Six weeks after the periodontal surgery, in office whitening was performed so the patient's desire for brighter teeth is met (Phillips Zoom, Phillips Oral Healthcare, Stanford, USA). The shade of the teeth 10 days after the whitening was completed was A1 for the upper centrals and A2 for the canines (Figure 13).

After proper healing of the periodontal issues was confirmed with the periodontist, tooth #22 was prepared for an all ceramic lithium disilicate crown and teeth #21 and 25 were prepared for an all ceramic lithium disilicate Maryland type all ceramic bridge with wings are fabricated. The wings are fabricated.

After the restorations were fabricated (Figure 14) and the temporary crown and arch wire were removed, they were tried in and the fit and contacts were verified. Another try in was performed with a glycine based paste (KY Jelly) so that the shade, contour and surface texture were assessed and approved by the dentist and the patient. At the same appointment the restorations were bonded after the porcelain was etched with 9% hydrofluoric acid and silanated. (Ultra-cem Products Inc, South Jordan, UT, USA), and the teeth cleaned with pumice.

A 5 step etch and rinse adhesive (All Bond 2, Bisco, Schaumburg, IL, USA) and a dual cure resin luting cement (Essix, Bisco, Schaumburg, IL, USA) were used. Spot curing was performed and excess cement was removed and after light curing for 60 sec each surface, the cement was left for 5 additional minutes to complete the chemical cure mode as well. Final finishing, adjustments of occlusion and polishing were performed with finishing diamonds (KOMET, Lomex, Germany), rubber points (Astropol, Ivoclar Vivadent, Schaan, Liechtenstein) and finishing strips (Soflex, 3M ESPE, Seefeld, Germany). Finally, a diamond polishing paste was used (Ultradent Products Inc, South Jordan, UT, USA) on a Flexinuff (Cosmedent, Chicago, IL, USA). An alginate impression was taken to fabricate a new Essix orthodontic retainer in the in-house lab within 1 hour. Oral hygiene and maintenance instructions were given to the patient and a follow up appointment was scheduled after 4 weeks (Figures 15-21).

A multidisciplinary approach in treatment planning and performance, as well as the use of contemporary restorative materials and techniques allow for a conservative, yet very aesthetic final result.

References

The author would like to thank the Orthodontist, Dr. Evita Bakopoulos for their contribution to the treatment of this case.

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The Author would like to thank the Orthodontist, Dr. Evita Bakopoulos and the Periododontist, Dr. Alexis Bakopoulos for their contribution to the treatment of this case.
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workshops and self-instruction programmes. For the past ten years, CAPP has facilitated over 550 continuing education programmes with over 52,000 international participants. With the opening of CAPP Asia in 2012, CAPP’s reach has expanded to the Asia Pacific region and beyond.

In 2012, CAPP joined the global family of 96 publishers by becoming the proud owner of the Dental Tribune Middle East & Africa edition, and has since been delivering six print editions annually to over 20,000 dental professionals in the Middle East and Africa region and has delivered 24 newsletters to more than 41,000 active subscribers. Through its international website, the latest industry news reaches the largest dental community worldwide—an audience of over 650,000 dentists.

CAPP started out in Dubai ten years ago as a centre for professional training. It quickly grew and developed two very important international conferences: the CAD/CAM and Digital Dentistry International Conference and the Dental-Facial Cosmetic International Conference.

Next year, the tenth CAD/CAM and Digital Dentistry International Conference will be celebrated together with the CAPP anniversary. The last decade has been a journey with challenges in keeping pace with the incredibly fast growth of the industry combined with new technologies, particularly in digital dentistry.

Ten years ago, it would have been difficult to imagine the kind of opportunities presently available to change dentistry and improve overall patient care, including diagnostics, planning and treatment, in terms of precision, treatment and healing time, and aesthetics. What has been accomplished in the past ten years has been significant and CAPP would like to thank all of its business partners, sponsors and supporters for together making CAPP the success it is today. CAPP would especially like to acknowledge all who have worked at and continue to be with the CAPP office and share the challenges and passion. Thanks also go to all of the dentists, dental technicians, dental hygienists and dental assistants who have followed us in the decade of rapid development of the dental industry and dental technology.

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Date of preparation: June 2014.
Ref: CHSAU/CHPLD/0008/14c
Dear Friends and Colleagues,

November is upon us once again. This year for the sixth consecutive time the amazing Jumeirah Beach Hotel in Dubai will host the Dental Facial Cosmetic International Conference for a two day scientific weekend offering all dental professionals the latest research and developments in the field of Aesthetic Dentistry. The Dental Facial Cosmetic International Conference has become a vital platform for the success and perception of dentistry in the Middle East region. Yearly November is upon us once again. This year for the sixth consecutive time the amazing Jumeirah Beach Hotel in Dubai will host the Dental Facial Cosmetic International Conference for a two day scientific weekend offering all dental professionals the latest research and developments in the field of Aesthetic Dentistry. The Dental Facial Cosmetic International Conference has become a vital platform for the success and perception of dentistry in the Middle East region. Yearly

This year’s conference will cover several subjects related to Aesthetic Dentistry enlightening all delegates with experiences from over 25 International Key Opinion Leaders who have gathered in Dubai. Participants will also have the unique chance to see the latest equipment which will be showcased at the product display made available by the top of the dental industry. We sincerely hope that this meeting will let participants immerse themselves in plenty of knowledge and share opportunities with one another. On behalf of Emirates Dental Society, I would like to wish you a very enjoyable and educational 6th Dental Facial Cosmetic International Conference.

My honor and pleasure is my honor and pleasure to welcome you all to our 6th Dental - Facial Cosmetic International Conference.

I am sure that this conference will be of the greatest help to develop our knowledge and sharpen our skills in pursuing the goal that we all share, to provide our patients with the best possible solutions for their aesthetic needs.

We will continue this unsurpassed cooperation to bring to our audience the most recent updates of technology in the dental field with few “surprised” as well. See you all in the dynamic Emirate of Dubai.

Dr. Aisha Sultan
President of the Conference

Dr. Munir Silwadi
Conference Chairman & Scientific Advisor

Dr. Munir Silwadi
BDS, MRCDSO, D USS, FADI, FICD
Conference Chairman & Scientific Advisor

This 6th edition of our DFCIC features a joint meeting with the American Academy of Implant Dentistry. During this session, the AAD will share with us their vast knowledge and experience as well as the latest in the field of Implant Dentistry.

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Dr. Aisha Sultan
President Emirates Dental Society
President of the Conference

Dr. Munir Silwadi
BDS, MRCDSO, D USS, FADI, FICD
Conference Chairman & Scientific Advisor
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09:00 – 09:45
**Dr. Gaetano Pauloni, Italy**
Adhesive esthetics solutions in anterior and posterior teeth

09:45 – 10:10
**Prof. Swaid Sami, Germany**
Minor & Major Augmentation in Oral and Maxillofacial Surgery and Implantology: new perspectives with Nonoxidephosphate cement

10:10 – 10:45
**MEET THE SPONSORS / COFFEE BREAK**

10:45 – 11:30
**Dr. Anton Lebedev, Russia**
Zirconia vs. glass-ceramics – pros and cons

11:30 – 12:15
**Dr. Julian Caplan, UK**
In-surgery CAD/CAM Dentistry – Fact or Fiction

12:15 – 13:40
**LUNCH / PRAYER TIME**

13:40 – 14:15
**Dr. Costa Nikolopoulos, Greece**
Simple Fast & High Quality Implant Dentistry

14:15 – 15:00
**Dr. David Glarudge, UK**
An Introduction to Digital Impressioning and the Digital Workflow

15:00 – 15:45
**Dr. Richard John Simonsen, USA**
Photography – Clinical for Dentistry, and Nature for Hobby

15:45 – 16:00
**DISCUSSIONS**

16:00 – 16:45
**Prof. Carina Mehanna Zogheib, Lebanon**
Teeth whitening from A to Z...

16:45 – 17:30
**Prof. Khaleed Balto, KSA**
The Effect of manufacturing features of rotary NiTi files on their performance: A clinical approach for analysis

17:30 – 18:15
**Dr. Gary Severance, USA**
Chairside Restorative Dentistry – Control Your Future

18:15 – 18:30
**DISCUSSIONS**

18:30 – 19:00
**POSTER PRESENTATION**

**MEET THE SPONSORS / COFFEE BREAK**

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**DAY TWO**

**SATURDAY | 15 NOVEMBER 2014 | CONFERENCE DAY | MAIN AUDITORIUM**

08:00 – 09:00
**BREAKFAST WITH THE SPONSORS / REGISTRATION**

09:00 – 09:45
**Dr. James Russell, UK**
Accessible Aesthetic Dentistry

09:45 – 10:10
**Dr. Michael Aya, USA**
Advances in interdisciplinary Aesthetic Surgery and Implantology

10:10 – 11:15
**Dr. Julian Caplan, UK**
The aesthetics of in-surgery CAD/CAM Dentistry

11:15 – 11:30
**MEET THE SPONSORS / COFFEE BREAK**

11:30 – 12:15
**Dr. Anton Lebedev, Russia**
Vital or vital? Behind the Scenes

12:15 – 13:00
**Dr. Marcus Engelschalk, Germany**
Double Scan vs. single Scan – Two different workflows for essential improvement in fixed prosthodontic reconstruction in implantology

13:00 – 14:15
**LUNCH / MEET THE SPONSORS**

14:15 – 15:00
**Dr. Marcus Engelschalk, Germany**
The virtual scan in prosthodontics – new workflows for more predictability

15:00 – 15:45
**Dr. Petros Yvanouglou, Greece**
The Science & Art of Restoring Immediately Loaded Implants

15:45 – 16:30
**Dr. Bjorn Tittel, Germany**
Innovative Solutions & Surgery in Aesthetic Dentistry

16:30 – 17:15
**Dr. Gary Severance, USA**
The Landscape of Digital Dentistry

17:15 – 18:00
**Dr. Emilio Rodriguez, Spain**
Immediate Load/with-Aesthetic and Functional Restoration

18:00 – 18:15
**DISCUSSIONS**

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**DENTAL HYGIENIST DAY**

**Jumeirah Beach Hotel, Dubai, UAE**

**15 NOVEMBER 2014**

**PART OF 5TH DENTAL FACIAL COSMETIC INTERNATIONAL CONFERENCE**

14 – 15 November 2014

**VENEERS vs. CROWNS THE CHALLENGE IN SMILE DESIGN**

**Dr. Eduardo Mahn, Chile**
09:00 – 17:30

**INDIRECT VENEERS**

**Dr. Munir Silwadi, UAE**
09:00 – 17:30

**INDIRECT VENEERS**

**Dr. Manaf Taher Agha, UAE**
09:00 – 17:30

**INDIRECT VENEERS**

**Aiham Farah, CDT, UAE**
09:00 – 17:30

**VENEERS vs. CROWNS THE CHALLENGE IN SMILE DESIGN**

**Dr. Eduardo Mahn, Chile**
13 November 2014 (09:00 – 17:30)

**DIRECT VENEERS**

**Dr. Eduardo Mahn, Chile**
13 November 2014 (09:00 – 17:30)

**DIRECT VENEERS**

**Dr. Eduardo Mahn, Chile**
13 November 2014 (09:00 – 17:30)

**DIRECT VENEERS**

**Dr. Eduardo Mahn, Chile**
13 November 2014 (09:00 – 17:30)

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**HANDS ON COURSES**

**VENEERS vs. CROWNS THE CHALLENGE IN SMILE DESIGN**

**Dr. Eduardo Mahn, Chile**
12 November 2014 (09:00 – 17:30)

**INDIRECT VENEERS**

**Dr. Munir Silwadi, UAE**
13 November 2014 (09:00 – 17:30)

**DIRECT VENEERS**

**Dr. Eduardo Mahn, Chile**
13 November 2014 (09:00 – 17:30)

**INDIRECT VENEERS**

**Dr. Munir Silwadi, UAE**
13 November 2014 (09:00 – 17:30)

**INDIRECT VENEERS**

**Dr. Munir Silwadi, UAE**
13 November 2014 (09:00 – 17:30)

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**GAGE**

**Jumeirah Beach Hotel, Dubai, UAE**

14 – 15 November 2014
**Instructions:**
1. Exchange Business Cards with Company - Ask for Stamp in return
2. Find out the Main Product
3. Complete the Gameplan with products & stamps
4. Submit your contact details to the reception

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22% reduction in bleeding (p<0.01 vs. baseline).

Adapted from Saxer et al, 1994. All interdental spaces from 6+ to +6 were tested at baseline and 4 weeks for bleeding on probing on the right side (buccal) and left side (lingual). Findings were recorded as 0=no bleeding; 1=slight/isolated bleeding; 2=marked bleeding. Mean scores were determined. N=22.

Baseline values [Mean SD]: Control (fluoride-containing toothpaste) group 24.75 (6.34); parodontax® group 25.40 (6.80). After 4 weeks: Control (fluoride-containing toothpaste) group 26.00 (9.14); parodontax® group 19.80 (7.38). *parodontax® vs control p<0.05.
There was no pulp exposure fractured at the middle third. I saw tooth #9 was horizontally. Upon clinical examination and review of the digital radiograph, two periapical radiographs with different lateral angulations for all dental injuries, including crown fractures. If cone beam-computed tomography is available, it should be considered to reveal the extension and direction of the fracture.1

Dr. Edward Mills in his presentation on Site Development and Implant Protocol Based on Etiology of Tooth Loss refers to a similar traumatic injury in which CT images revealed not only a root fracture within the bone but a fracture of the lingual plate.2

A limited field 3D scan 5cm x 5cm at 500 voxels was taken with the CS 8100 3D to rule out bucral or palatal plate fractures (Fig. 2). None were evident on the scan. While her parents were upset that she had been injured, the ability to view a 3D image reassured them that the damage appeared to be limited to the tooth's coronal structure.

Treatment Plan

The patient's treatment options were: 1) do nothing; 2) restore with a composite restoration, realizing that this would have a questionable long-term prognosis due to size of fracture; 3) restore with a CAD/CAM milled crown. The patient and her parents were advised that cases where teeth have been injured traumatically such as in this case, one might experience a post traumatic irreversible pulpitis at a period of time beyond the initial trauma. In some cases, this condition may be treated by endodontic treatment and crown restorations but in other cases root resorption may take place precipitating the loss of the teeth. These teeth will be monitored every 6 months over several years with periapical radiographs. Every appropriate effort to maintain the tooth in place and avoid the need of an implant until the patient reaches maturity. Dental implants in adolescent patients may affect vertical growth and development of the alveolar ridge because the osseointegrated implant acts as an ankylosed tooth. At a focus conference on Advanced Dental Implant Studies, Dr. Mills summarized that jaw growth in a young adolescent patient may compromise the outcome of the oral rehabilitation using an implant supported prosthesis even if implants successfully integrated. After presentation of the treatment plan and discussion of risks, benefits, options, and alternatives, the parents and patient elected to restore tooth #9 with a CAD/CAM crown.

The parents understand this crown will likely need to be replaced once she reaches adulthood for the best cosmetic appearance, as her teeth and face will change with further growth and development.

Tooth #9 was anesthetized and prepared for a ceramic crown. I utilized the CS 5000 intraoral scanner to scan the prepared maxillary anterior quadrant and the opposing mandibular anterior quadrant as well as obtain a bite registration (Figs. 3, 4). CS Restore software was then utilized to design the anterior crown (Figs. 5-7). The CS 5000 milled the crown from an ivory.
Porcelain laminate veneers – avoiding complications

By DCDM

Dentist Veneering is the process of covering the facial surfaces of teeth by using various types of dental materials. Most commonly used are porcelain veneers which are thin shells of porcelain that are shaped like the outer layer of the teeth and are used to cover the teeth, aiming to enhance their appearance.

Many celebrities opt for this esthetic treatment to achieve what may seem like a picture-perfect smile. This may lead people to a false expectation that everyone is a good candidate for veneers. However, from a dental clinician’s perspective preparing and planning for veneers is very challenging, and if proper analysis of the patient and proper techniques in preparing the teeth are not used, multiple complications can occur. These include gingival inflammation, chipping and breaking or even complete de-bonding of the veneers.

To decide whether a patient is a good candidate for veneers many factors should first be assessed; the condition of the patient’s teeth, habits, periodontal condition and most importantly the patient’s expectations and willingness to maintain their veneers after they are placed.

We should start by analysis of the teeth. This involves assessing their shape and proportion; diastemas, and analysis of the occlusion. Regarding shape and dimension, there should be sufficient tooth structure to retain the veneer, otherwise the longevity can be severely affected. In teeth with small surface areas such as lower incisors, or teeth with multiple cavities and fillings which decrease the available surface for bonding, there is an increased chance of the early displacement of the veneer. In cases such as full crowns may offer a better long term option (H.Serdar Cotert et al, 2009).

In terms of diastemas, if these are too large veneers can only partly reduce the space, otherwise gingival inflammation and/or recession can occur due to the bulkiness of the veneer (Weissgol and Cohen, 1981). Additionally, a tooth which is unnaturally close to the gingiva, which indicates poor oral hygiene. If this is done, complications which arise include: placing the veneer margin too deep due to gingival enlargement, and breaking during preparation and bonding leading to poor marginal seal and marginal staining after veneer placement. Eventually gingival recession or worsening inflammation will result. Good oral hygiene and gingival health should be achieved before veneers are started. All of these factors need to be considered during the initial assessment to avoid complications.

Additional complications can arise during the preparation of teeth. There are two common approaches to placing porcelain veneers, one is done without altering the natural teeth - bonding the porcelain veneers to unprepared teeth. This might seem a conservative choice avoiding alteration to tooth surfaces, but it inevitably creates a bulky over-contoured appearance and increases the risk of the veneer de-bonding and gingival complications.

Finally in tooth analysis the occlusion must be considered. For veneers to have a longer survival rate they should not have excessive biting forces on their edges as is common in patients with an edge-to-edge occlusion which can lead to chipping and breaking of the veneers. Care must also be taken in patients with missing posterior teeth, as this increases the loading on the anterior teeth. Patients’ habits and gingival health should be assessed. Night-time grinding or heavily clenching, often related to stress, or even biting or chewing on fingernails or objects like pens, create high horizontal forces impacting on survival of the veneers at a rate 8 times higher than patients who don’t have such habits. Such forces can readily lead to fracture, chipping or total de-bonding of the veneer. We should also consider the patient’s high consumption of dark or acidic foods as well as smoking habits which can lead to dark stains around the margins of the veneers (Fig 1). Since patients with dark stained teeth will often consider veneers as a solution, habits should be identified and changed after veneer placement to maintain the esthetics of their veneers (Beier et al, 2012).

Marginal stains can be minimized by brushing or rinsing after smoking and consumption of dark colored foods.

The patient’s oral hygiene must also be assessed, which leads us to the last key point of gingival health. Veneers should not be prepared on bleeding inflamed gingiva, which indicates poor oral hygiene. If this is done, complications which arise include: placing the veneer margin too deep due to gingival enlargement, and breaking during preparation and bonding leading to poor marginal seal and marginal staining after veneer placement. Eventually gingival recession or worsening inflammation will result. Good oral hygiene and gingival health should be achieved before veneers are started. All of these factors need to be considered during the initial assessment to avoid complications.


A study analyzing the overall survival rate of porcelain veneers over a 20 year period concluded that the estimated survival rate over a 5 year period is at 95%, at 8 years is 94%; at 10 years is 86% and at 20 years is 85% (Beier et al, 2012). It should be noted that these were veneers placed after adequate tooth preparation.

The clinician must consider all these factors before choosing to place veneers if complications are to be minimised and patient satisfaction achieved.

References are available from the author.

Figure 1. A significant staining of the veneer margins as a result of smoking and high coffee consumption.

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Case report surgical correction of a class III malocclusion in an adult

By Dr. Fabien Depardieu

This case report describes a successful orthognathic treatment of a skeletal Class III malocclusion with mandibular prognathism in an adult individual. The patient with Class III malocclusion, having mandibular excess in sagittal and vertical plane was treated with orthodontics, bilateral sagittal split ostectomy.

The surgical-orthodontic combination therapy has resulted in near-normal skeletal, dental and soft tissue relationship, with marked improvement in the facial esthetics in turn, has helped the patient to improve the self-confidence level. The interdisciplinary approach is the treatment of choice in most of the skeletal malocclusions (1).

Keywords: Class III malocclusion, decomposition, Orthognathic Surgery, Bilateral sagittal split osteotomy, prognathism, surgical orthodontic treatment.

Introduction

The Skeletal Class III malocclusion is characterized by mandibular prognathism, maxillary deficiency or both. Clinically, these patients exhibit a concave facial profile, a retrusive nasomaxillary area and a prominent lower third of the face. The lower lip is often protruded relative to the upper lip. The upper arch is usually narrower than the lower, and the overjet and overbite can range from reduced to reverse.

The effect of environmental factors and oral function on the etiological factors of a Class III malocclusion is not completely understood. However, there is a definite familial and racial tendency to mandibular prognathism. For many Class III malocclusions, surgical treatment can be the best alternative. Depending on the amount of skeletal discrepancy, surgical correction may consist of mandibular setback, maxillary advancement or a combination of mandibular and maxillary procedures. After surgical correction of the skeletal discrepancy, the occlusion is usually finished orthodontically to a Class I relationship. However, if surgery treatment is not performed, and the final molar relationship is Class III or Class I, there are challenges specific to the static and functional Class III occlusion that must be considered.

Sometimes a Class III relationship is caused by a forward shift of the mandible to avoid incisal interferences. This is a pseudo-Class III malocclusion. In these cases, it is important to establish the inter-occlusal relationship with the teeth in the retruded contact position.

In this paper, the surgical orthodontic treatment of a young adult patient with a Class III malocclusion is illustrated.

Diagnostic and Etiology

The patient was a 28 year-old man who had a Class III facial type and slight crowding with a complete Class III relationship. His chief complaint was an esthetic facial and un-even bite. His medical history showed no contraindication for orthodontic therapy and orthognathic treatment. No one in his direct family had a skeletal Class III features.

The pretreatment extra-oral photographs showed symmetric facial structures (Fig 1). The patient had a concave profile, a decreased nasolabial angle and a protusive lower lip.

The intra-oral photographs (Fig 2) showed a Class III occlusion on each side with an anterior crossbite and without apparent crowding. Overjet was -2.0 mm, and overbite was -3.5 mm. His maxillary anterior teeth were prognathic, with inadequate display when smiling.

The mandibular dental midline was deviated 2.5 mm to the right, although the maxillary dental midline was coincident with the facial midline.

There were no signs or symptoms of temporomandibular joint dysfunction. Mandibular movements, such as maximal opening and lateral and anterior displacement were within normal limits. No deviation and pain were discovered during the border movement of the mandible.

A cephalogram and a panoramic radiograph were taken before treatment. The cephalometric analysis and its tracing showed that the mandible protruded relative to the cranial base (SNB angle, 82°; ANB angle -2°). The panoramic radiograph showed no other abnormal signs.

After the analysis of the photographs, the casts and radiographs, it was decided to approach his problems as a skeletal Class III malocclusion with an anterior cross bite and a lower deviated midline (2).

Treatment Objectives

The treatment objectives (5) were to obtain a harmonious facial profile by decreasing the protrusion of the mandible, improve the occlusion, including correction of the anterior crossbite, establishment of ideal overjet and overbite, achievement of a functional molar relationship; and place the dental midlines in the middle of the patient’s face.

We planned:

- To set back the mandible to correct the prognathism and the midline deviation.
- To relieve the proclined maxillary incisor position and to relieve the dental compensations.
- To relieve the dental compensations by straightening the mandibular incisors to an upright position over basal bone.

Treatment Alternatives

The first alternative was orthodontic treatment with extraction of 4 premolars. Through the retraction of the mandibular anterior teeth, the anterior crossbite and Class III molar relationships would be corrected and the concave facial profile would be camouflaged. Nevertheless, the mandibular incisors were not suitable for much distal movement because of the thin trabecular bone in the mandibular anterior area that could damage the periodontal tissues by gingival recession, frenostomation or delineosis.

The second alternative was combined surgical and orthodontic treatment. The anterior crossbite would be corrected with a single-jaw surgery; a mandibular setback. The concave profile would be improved.
as well. It was decided to extract the upper second premolars to relieve the dental compensations by repositioning the upper incisors.

The third alternative was to correct the class III malocclusion by miniscrew-assisted mandibular dentition distalization. However we decided that the skeletal problem was too excessive and required orthognathic surgery.

After we discussed the three alternatives with the patient, he chose the second option.

Treatment Progress
The preoperative orthodontic preparation began on December 2011. Before the levelling and alignment procedures (4), the maxillary second premolars were extracted to decompensate the maxillary incisor inclination and to reduce the acute nasolabial angle. Pre-adjusted 0.022-in edgewise brackets were bonded to all teeth. The preoperative orthodontic treatment was achieved in 12 months, ending with 0.018 x 0.025 stainless steel surgical archwires for the maxillary and mandibular arches.

The orthognathic surgery involved a set back of the mandible with a bilateral sagittal split osteotomy. This was performed to improve the mandibular projection and establish an Angle Class I canine position with ideal overjet and overbite. After the surgery, the patient was placed in intermaxillary fixation for 2 weeks. Two months after surgery, finishing was performed with maxillary and mandibular 0.016 x 0.022-in titanium-molybdenum alloy archwires. The appliances were removed after 18 months of active treatment. Bonded lingual retainers were fitted to the lingual surfaces of the anterior teeth in both arches. Maxillary and mandibular essix retainers were delivered with instructions to wear them full time for two weeks and then night time.

Treatment Results
The post-treatment photographs (Fig. 5) showed that facial aesthetics were improved, and ideal occlusion was achieved with proper overjet and overbite. The maxillary dental midlines coincided with the facial and mandibular midlines. The occlusion was finished to a therapeutic Class II.

Discussion
The decision for surgical orthodontic treatment for this patient was based on the fact that his primary concern was his facial profile. Before the single-jaw surgery: a mandibular setback, preoperative orthodontic treatment, including decompensation of the maxillocclusion, is necessary. The dental decompensation we performed was intended to retract the proclined maxillary incisors to a normal axial inclination. Lack of optimal dental decompensation compromises the quality and quantity of an orthognathic correction. The patient’s teeth were decompensated by extracting the upper second premolars and levelling the mandibular arch. This phase was achieved in 12 months.

Conclusion
This case report describes the surgical orthodontic treatment of a young adult man with dental and skeletal class III relationships. The orthognathic treatment was the best option for achieving an acceptable occlusion and a good aesthetic result. An experienced multidisciplinary team approach ensures a satisfactory outcome. Presurgical orthodontics removes all the dental compensations and suggests the extent of the skeletal discrepancy. Normal skeletal base relationship is achieved by osteotomy and setback of the prognathic mandible, postsurgical orthodontics guides the normal occlusal rehabilitation by correcting any emerging dental discrepancies.

References

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Dental implant competitors shake things up amidst economic uncertainty

By Kristina Vidug, USA

In 2015, the global dental implant market—composed of the sale of dental implant fixtures, final abutments and other devices—was valued at over US$5.7 billion. The European market, valued at nearly one-third of the global market at close to US$1.2 billion, contracted through 2014, as uncertain economic conditions continued to reduce procedure volumes and as more low-cost competitors entered the market, driving down prices.

These factors hampered the expected economic recovery and resumption of growth projected for 2015. As a result, the dental implant market will continue its decline before stabilising in 2015. Only then will the European market slowly begin to recover. Factors such as low gross domestic product growth and high unemployment continue to render dental implant procedures—which are primarily paid out of pocket by patients—cost prohibitive, while alternatives, such as bridges and dentures, that are perceived as more affordable will represent attractive options.

Dental implants were invented in Sweden; as a result, it is not surprising that a great number of premium manufacturers are based in Continental Europe. In the past, premium manufacturers, such as Straumann and DENTSPLY Implants, were able to rely on their long-standing reputation in the market and the high quality of their products to command higher prices than did some of their competitors. The price reduction has come at a perfect time: while economic conditions begin to slowly improve, consumers are still extremely price sensitive. These

price cuts therefore allow dental professionals to offer premium implant products to their patients at a reduced rate.

Straumann’s price reduction is not its only foray into the value market. In the first quarter of this year, the company purchased US$50 million worth of bonds from low-cost South Korean dental implant manufacturer MegaGen. The investment, which will be converted to shares in 2016, will help bolster Straumann’s revenue while allowing it to participate in both the premium and value segments, thus appealing to a wide range of practitioners and patients alike.

Straumann is not the only company shaking things up in the world of dental implants. Zimmer Dental recently announced its acquisition of rival Biomet. While both companies are better known for their orthopaedic products, they are fairly significant competitors in the dental industry as well. Lay-offs are not uncommon when companies merge, especially when the companies in question offer the same types of products. This can have a negative impact on sales in the short term, as the newly conjoined companies’ sale force decreases, leading clients to switch to other competitors.

However, this will not be the case with the Zimmer-Biomet merger, at least not in the short term, as the sales teams from both companies are expected to be retained through the merger. The cost of retaining both sales teams has been estimated at US$400 million. While the effect of this acquisition on the market remains to be seen, the fact that the sales force will not be decreasing bodes well for the newly merged companies, likely resulting in an increased market share in the dental implant segment.

There is discussion of merger and acquisition activity among other companies in the segment too, with Nobel Biocare reportedly in talks to sell to private equity firms and strategic buyers. While these talks are still in the very early stages, what is certain is that there has been a great deal of activity in the competitive landscape in the past several years.

This, combined with the aforementioned economic factors, is turning this once stable and mature market into a dynamic, action-filled space. With the dental implant market set to rebound in Europe and with revenues expanding in other countries—particularly in the rapidly developing BRIC and Middle Eastern markets—the global industry is poised for even further change, and the competitive landscape could look entirely different a few years from now.

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About the Author

Kristina Vidug is Market Research Analyst at Decision Resources Group, a U.S.-based market information provider.
SameDay Dental Implants® & Teeth: A Surgical & Prostho Protocol

By Costa Nikolopoulos Oral & Maxillofacial Surgeon (S.A.) & Petros Yvanouglu Specialist Prosthodontist (U.S.A.)

The original Branemark protocol advocated the use of a two stage surgical approach where the turned (smooth) implants were buried for several months under the mucosa. With the advent of surface enhanced and tapered implants the protocol later evolved into a one stage approach.

Several clinicians then proceed to immediately load these one stage implants with good success provided good primary stability (more than 45Ncm) was achieved at time of implant placement and provided micro-movements could be limited to 100µm. Ample reports have been published on immediate loading of dental implants showing an initial unloaded period of 5–6 months is not necessary. From a patient’s point of view the reduction of treatment time between implant placement & installation of a functional prosthesis leads to increased patient satisfaction & treatment acceptability.

Avoid Bone Grafts

This is in line with Prof. P.I. Branemark's philosophy of “Lesser Surgery to Treat More Patients” (Fig.1).

With increased costs and patient morbidity due to bone grafting, an increased patient resistance to implant treatment has been noted. An alternative method of treating implant patients who have suboptimal bone volume without bone grafting is made possible by using:

1) Angled implants in a tilted manner placed into available bone anterior and posterior to the maxillary sinus (Fig 2).

2) Wider and appropriately shaped implants placed into immediate extraction molar sockets thereby avoiding socket or sinus grafting (Fig 5).

High Primary Stability

An important factor for immediate loading success is high primary implant stability (greater than 45Ncm) which can be achieved by using a surface enhanced tapered implant design to enhance lateral compression of bone.

By underprepping, high insertion torque and primary stability can be achieved even in cases of decreased bone density such as is often the case in maxillary alveolar bone and as well as in osteoporotic patients. Primary stability can easily be measured during implant placement with a torque wrench (Fig 4).

If 45Ncm insertion torque is not achieved, the implant should be removed and without further bone preparation a 1mm wider implant is placed.

This usually results in adequate primary stability of 45Ncm for immediate loading. If 45Ncm insertion torque is still not achieved then again the implant can be removed and replaced with an even wider diameter implant if the available bone width permits. This protocol results in adequately high insertion torque and primary stability to enhance lateral compression of bone.

Scientific research shows less bone loss, better bone levels and peri-implant soft tissues when the transmucosal abutments are placed at time of surgery and never removed (Fig 8).

Healing caps are then placed on the multi-unit abutments (Fig 10). After abutment placement, at the same surgical appointment, the impression is taken at abutment level and provisional acrylic screw retained fixed teeth are placed in the same day as the implant surgery.

In single implant cases the healing abutment is placed directly at implant level. An implant impression is taken and six hours later a full ceramic/zirconia screw retained crown is then connected and torqued to 45Ncm directly on to the implant without an intermediate/transmucosal abutment (Fig.11).

No multi-unit abutment is in place or placed in the single implant case as the multiunit abutment has no antirotation feature.

Flapless/Minimal Flap Surgery

In extraction cases no mucosal/micro-periosteal flap is reflected. The integrity of the extraction socket walls is inspected and assessed with a 15mm or 20mm periosteal probe placed into the extraction socket (Fig 12). The quality of the extraction socket is then confirmed by good vision with magnifying loops and light illumination.

In healed sites where possible the “punch” technique is used (Fig 15).

Alternatively minimal flaps are raised where indicated. This flapless/punch technique/minimal flap approach results in minimal or no soft tissue changes thereby allowing the restorative dentist/prosthodontist to proceed with the provisional acrylic screw retained teeth in the same day and permanent ceramic screw retained teeth in 1 week in the case of single implants.

In the case of the single implant the permanent full zirconia screw retained tooth can be delivered in 6 hours on the same day.

Number of Implants

In edentulous cases 4 to 6 implants (lips 14 & 15) are placed per arch depending on:

1) Bone volume & quality
2) Implant length & diameter
3) Implant distribution (A-P spread)
4) Patient’s age
5) Patient’s finances (cost to benefit ratio)

Prosthodontic Protocol

The Prosthodontic protocol of SameDay Dental Implants & Teeth is focused and designed around the patient’s needs. It’s fast, efficient and doesn’t compromise quality. The patients are never left without teeth for more than six hours. As a result treatment acceptance is high.

All implants with good primary stability (>45Ncm) are immediately loaded with screw-retained teeth. For single implant cases, the final all ceramic screw retained tooth is fabricated and delivered to the patient within six hours. For multiple implants cases, temporary screw retained acrylic teeth are fabricated without screw retention and a final metal screw retained all ceramic or metal teeth are delivered one week later.

Timing of Immediate Loading

Dental implants either should be loaded the earliest possible (never exceed ten days after surgery) or alternately loaded two months after placement. This is because the so-called initial stability (mechanical stability) that an implant has, starts to drop gradually and the implant becomes prone to failure if forces are applied. Fortunately, simultaneously a “secondary stability” (Osteointegration) starts to build up. The sum of the two “stabilities” which is demonstrated on the stability graph (Fig.16), gives us the “total stability”. As a golden rule implants ideally should never be disturbed during the “stability dip” period.

Preoperative Preparation

In order to achieve this protocol, preoperative screening and detailed surgical and prosthodontic planning is necessary. In edentulous cases 4 to 6 implants are placed per arch depending on:

1) Bone volume & quality
2) Implant length & diameter
3) Implant distribution (A-P spread)
4) Patient’s age
5) Patient’s finances (cost to benefit ratio)

Fig 1. Dr. Costa and Dr. Petros in line with Prof. Branemark's philosophy of "Lesser Surgery to Treat More Patients".

Fig 2. Angled implants placed into available bone anterior and posterior to the maxillary sinus.

Fig 3. Immediate molar replacement implants.

Fig 4. 45Ncm Primary Stability measured during implant placement.

Fig 5. Silicone key of the facial surfaces of the existing teeth.

Fig 6. Silicone key of a diagnostic wax-up.

Fig 7. The silicone key can direct the implant surgeon.

Fig 8. Bite registration is start- ed prior to extraction of all the teeth and impressions are used with ad- dition of bite registration mate- rial onto the remaining healing caps.

Fig 9. Flapless/immediate abutments with “One Abutment One Time” approach.

Fig 10. Healing caps placed on abutments.

Fig 11. The single implant with a Zirconia screw retained crown.

Fig 12. Pulpation of the extraction socket walls with a peri-odontal probe.

Fig 13. All On-6.

Fig 14. All On-4.

Fig 15. All On-6.
Fig. 25. Adaptation of the final technician grinds and shapes according to the prosthetic platform different sizes and shapes, accurately with the use of prefabricated zirconia cores and eventually bakes the porcelain on to it. Four to six hours later the permanent tooth is placed into the mouth of the patient. The prosthetic screw is torqued down to 45Ncm. A periapical x-ray helps to verify the perfect fit (Fig. 26) on to the implant (Fig. 20). Occlusion is checked and verified with the help of 9iyh thick “schimchott” articulating paper. The prosthetic access hole is obliterated with layered filling (telfon tape + composite resin) to allow easy access for retrievability in the future but simultaneously excellent esthetics.

The use of the “Passive Abutment” procedure, the final prosthesis is cemented by the dental technician. This is achieved by:

1) taking photos and videos to record the esthetic result, in the mouth and
2) using the so-called “Clinical Remounting Procedure”, in the laboratory.

Alginate impressions and bite registration are taken from the temporary teeth, which are removed from the mouth and repositioned again on the articulator. From the newly remounted temporary teeth the dental technician fabricates:

i) a series of silicon keys which will guide him to fabricate the permanent teeth and
ii) an “Anterior Custom Made Guiding Table” (Fig 22) which will allow him to reproduce the occlusal scheme of the temporary teeth to the permanent teeth.

Two minutes later the temporary teeth are placed again in the mouth of the patient and the screws are checked. The “healing cementation that can cause significant complications if left accidentally under the immata tissues. Fitting of the prosthetic crown onto the fitting surface of the implants is cleaned, dried and cemented by the dental technician. This is one of the most important prerequisites for optimal implant model is used as a blueprint for the cementation. Based on our experience over the past 15 years of using passive abutments, the metal try-in procedure is not needed, thus speeding up the fabrication of the fit procedure.

Once all necessary modifications are made and the patient is satisfied, we need to convey all newly established parameters of the fit procedure to the dental technician. This is achieved by:

1) prefabricated silicon impression cores in different shapes and sizes.
2)顺丰 perceive and implant impressions, bite registrations and silicone keys, right after surgery.

The patient should be evaluated for esthetics, phonetics and occlusion. Midline, plane of occlusion and buccal corridors are established which means that in case of soft tissue lesions it is possible in most cases to avoid bone grafts, achieve high primary stability and treat patients with implants and passively fitting, screw retained teeth all in one day (Fig 27).

Fig. 26. Final Full Contour ZIRCONIA prosthesis on implants.

1) the use of prefabricated zirconia cores and providing the patient with the help of photos and videos to record the esthetic result, in the mouth and
2) using the so-called “Clinical Remounting Procedure”, in the laboratory.

Alginate impressions and bite registration are taken from the temporary teeth, which are repositioned again on the articulator. From the newly remounted temporary teeth the dental technician fabricates:

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Follow up

Two months later the osseointegration of the implants is radiographically and mechanically evaluated. In case of soft tissue recession, a pick up impression of the prosthetic crown is done. A new soft tissue model is fabricated and the dental technician can add porcelain accordingly (Fig. 25). The patient is followed up every six months for the first two years and thereafter according to his/her oral hygiene level.

Complications

The most common complication is porcelain fractures/chipping. These can be easily repaired by removing the teeth and relinking the porcelain.
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used to etch the fitting surface of each veneer for 60 seconds as recommended by the manufacturers to obtain a clean ceramic surface for durable bonding.

Empress ceramic primer Monobond-S was used as a silane-coupling agent for one minute and then air dried for five seconds according to the manufacturers instructions. One layer of Excite bonding agent was applied on the fitting surface of each veneer for 60 seconds then air thinned for 5 seconds Fig 10.

Tooth structure surface treatment:
Transparent strips were used on the proximal surface of adjacent teeth to avoid etching effect. Phosphoric acid 35 % was used to etch the enamel margins of the tooth preparations for 30 seconds and 15 seconds for the dentin areas. Copious air water spray was used to remove the acid for 30 seconds. One layer of Excite bonding agent was applied on the tooth structure and air thinned for five seconds. LED light curing unit was used for curing.

Vario-link Veneer light activated resin cement was used for cementation of the two laminate veneers. Optera Sticks were used for holding the labial surface of the veneer for better handling processes during cementation. Initial polymerization was made and excess cement was removed with a sharp tip of a probe. Dental floss was used to ensure that there is no trapped cement in-between the embrasures. Final polymerization was completed. Intra oral proximal strips were used for better smooth proximal margins Fig.11.

By Dental Tribune MEA

Under the high patronage of his Excellency the President of the Parliament of Lebanon Mr. Nabil Berry, Lebanese Dental Association known by its yearly BIDM (Beirut International Dental Meeting) has organized the 24th BIDM 2014 in collaboration with the Saudi Dental Society at BIEL in Beirut on 11-15 September 2014.

Pre-congress courses and workshops took place on September 10 at “USJ” - University St. Joseph - Faculty of Dentistry which was managed by Professor Ghassan Yared and Professor Carina Mehanna, under the supervision of Prof. Nada Naaman, Dean of Faculty of Dentistry.

On the first day of the event the attendees witnessed the ribbon-cutting ceremony followed by a tour of the exhibition exploring the latest dental technologies, equipment and services displayed by numerous key industry leaders and dental manufacturers.

The BIDM 2014 not only opened the doors to open-discussions and learning for the region but allowed the participants to build their skills and use the opportunity for networking by up-to-date knowledge and sharing experiences in the application of technology throughout the event.

President of Lebanese Dental Association, Prof. Elie Maalouf discussed during the opening ceremony: “With the theme “Planning for the Future” we encourage all Lebanese living in Lebanon and abroad, as well as all Arab and foreign dentists to attend this highly regarded meeting, in an effort to plan for a better future, not just scientifically, but culturally and politically.”

Prof. Maalouf further announced, “We should all denounce terrorism and extremist behavior. Attending this meeting and especially in this dire time will tell the world that we are strong together and will show them that no matter how hard they try to separate us we will always find a platform to meet. Lebanon is a small country but it has always reflected to the world a sense of modern civilization and openness to all cultures and religions. Lebanon does not tolerate extremist behavior and will not allow negative media to taint its reputation. Holding ambitious annual dental meetings with world renowned international and local speakers will show the world that we are competing with first world countries regarding scientific achievements.”

< Page 8

BIDM 2014 Opening Ceremony

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About the Author

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Allaround for All Indications
The general secretary of LDA, Dr Walid Khattar further declared during the ceremony: “Efforts exerted leading to this conference were colossal, we did very important team work as council members, committee members, professional and competent employees, to accomplish this conference. I hope that you will benefit from interesting scientific topics adding therefore to dental medicine a new scientific cornerstone.”

The conference further proved to be a vital platform for the participants to share ideas, explore the potential of new advances in technology and foster closer ties. The BIDM 2014 gathered under one roof of 6,000 square meters more than 4,500 dental professionals in the dental field.

The scientific conference brought together more than 2,500 dentists registered to the event program from Lebanon and the region and more than 1000 have been registered as visitors to the exhibition area. This year, despite the difficult situation in the region, the event gathered 56 highly esteemed guest speakers from 16 countries around the world (USA, India, France, Germany, United Kingdom, Italy, Bulgaria, Libya, Greece, Spain, Lithuania, and from the Arab countries Kuwait, Sultanate of Oman, Egypt, Kingdom of Bahrain and KSA) in addition to an interesting panel of Lebanese talented lecturers will attempt to clarify during 3 exciting days some of the most important issues and dilemmas arousing today. They highlighted on areas of ongoing developments and frontiers of research challenges in treatment planning, clinical performance and sustainable measures that are essential for a long-term treatment success. The event also received sponsorship by major market players and dealers in the region and the world leading companies, more than 157 companies were part of a unique huge space offered this year.

The event came to a conclusion with 13 lucky draws sponsored by Lebanese Dental Association during the closing ceremony. Overall, The BIDM 2014 was a resounding success with nothing but positive feedback from the visitors.

The courses this year covered a variety of topics including: Endodontology, restorative dentistry, pedodontontology, laser in dentistry, Surgery and implant loading. Each course received specific continuing education hours in collaboration with CAPP (Center for Advanced Professional Practices) which is an ADA CERP recognized provider.
Saliva and Oral Health

By Michael Edgar, Colin Davies & Denis O’Mullane and contributed to by Mahbush Navazesh

Excerpt from Saliva and Oral Health-An Essential Overview for the Healthcare Professional

Saliva plays a significant role in the maintenance of oral-pharyngeal health. Subclinical complaints of a dry mouth (xerostomia) and objective evidence of diminished salivary output (salivary gland hypofunction) are common conditions, particularly in medically compromised older adults. They can result in impaired food and beverage intake, a burden of oral disorders, and diminished host defence and communication. Persistent salivary gland hypofunction can produce permanent oral and pharyngeal disorders and impair a person’s quality of life.1,2

Global estimates of xerostomia and salivary gland hypofunction are difficult to ascertain due to varying study design, differences in diagnostic criteria, and usage of the terms xerostomia and salivary gland hypofunction interchangeably, utilisation of different diagnostic criteria and saliva collection methods, and small sample sizes. However, overall, the prevalence of xerostomia and salivary gland hypofunction increases with age and affects approximately 60 million persons aged 65 years and older.2

There are multiple causes of xerostomia and salivary gland hypofunction, the most common of which are: age-related decreases. Although an awareness and understanding is important to the prevention, early diagnosis and treatment of the condition. There is an extensive body of research on saliva and its role in oral health. It has been used to indicate an individual’s susceptibility to developing caries, it has also been associated with general and oral health. Saliva benefits include its role in oral health helps to diminish host defence and treatment of the condition. It can be used to monitor the presence and level of harmful microorganisms and ions.

The following article provides an overview of oral complications associated with salivary gland hypofunction. It includes: epidemiology, diagnosis, clinical implications and management of xerostomia.

Xerostomia and Salivary Gland Hypofunction

Saliva

Saliva is a complex fluid that is produced by over 70 different glands within the oral cavity. It is vital for its role in oral health and helps to maintain the prevalence of xerostomia and salivary gland hypofunction.9

Diagnosis of xerostomia and salivary gland hypofunction

Subjective responses and questionnaires

The establishment of a diagnosis of xerostomia may be difficult to ascertain due to the symptoms and signs of xerostomia.3

Saliva Collection

Saliva Collection

Stimulated whole salivary flow rates have been attempted to define the lower limits of ‘normal’ salivary flow rates. However, there is substantial variability in flow rates that makes it difficult to define diagnostic differences of glandular fluid production. In studies of healthy persons across the lifespan, salivary flow variation 10-100 fold, while stimulated secretion varies 10-100 fold.4

In patients considered to be at risk for developing salivary gland hypofunction, it would be useful to monitor salivary flow rates over time. Most investigations consider a diagnosis of salivary gland hypofunction if the stimulated whole salivary flow rate is less than 0.5 ml/min using standardised techniques. Several studies have demonstrated that the saliva and salivary gland hypofunction will be more likely to develop and affect the quality of life. Therefore, identification of patients at risk will help in the prevention of the condition.

With deficient reminiscentia, dental erosion is a more frequent occurrence in patients with salivary gland hypofunction. It is more likely to develop in medically compromised older adults. These conditions who complain of xerostomia and salivary gland hypofunction, the most common being diabetes, hypertension, hypercholesterolaemia, osteoarthritis and in patients with Sjögren’s syndrome. A swollen submandibular gland can be palpated medially from the postero-inferior border of the mandible.5

Sjögren’s syndrome is a systemic autoimmune disorder involving the exocrine glands. It is nearly 100% among patients with Sjögren’s syndrome. A swollen submandibular gland can be palpated medially from the postero-inferior border of the mandible.5

Gingivitis

The presence of saliva is vital to the maintenance of healthy hard (teeth) and soft (mucosa) oral tissues. Severe reduction of salivary output not only results in a rapid deterioration of oral health but also has a detrimental impact on the quality of life for the sufferer.

An understanding of saliva and its role in oral health helps to promote the role of salivary glands in health. Salivary gland hypofunction is associated with various oral and systemic conditions such as diabetes, hypertension, hypercholesterolaemia, osteoarthritis and in patients with Sjögren’s syndrome. A swollen submandibular gland can be palpated medially from the postero-inferior border of the mandible.5

There are numerous introral complications associated with reduced salivary output. Oral mucosal surfaces become desiccated and easily friable, they lose their lubrication and will appear dry, erythemic, and raw with an associated mouth breath.

Microorganisms and ions.

Saliva is an essential fluid that is easily available for study and analysis. It can be used to monitor a person’s susceptibility to oral infections, particularly in medically compromised older adults. These conditions who complain of xerostomia and salivary gland hypofunction, the most common being diabetes, hypertension, hypercholesterolaemia, osteoarthritis and in patients with Sjögren’s syndrome. A swollen submandibular gland can be palpated medially from the postero-inferior border of the mandible.5

Sjögren’s syndrome is a systemic autoimmune disorder involving the exocrine glands. It is nearly 100% among patients with Sjögren’s syndrome. A swollen submandibular gland can be palpated medially from the postero-inferior border of the mandible.5

The increase in salivary output during and immediately after meals and during periods of stress is an essential component in the prevention, early diagnosis and treatment of the condition.

Interestingly, most studies have not demonstrated significant differences in saliva and salivary gland hypofunction when compared with healthy controls,8,9 which may be due to greater attention to oral health and more frequent use of professional dental services. In addition, while several studies have demonstrated significant differences in numbers of carriers associated with streptococci and lactobacilli, others have suggested that salivary gland hypofunction compared with healthy controls, similar levels of micro-organisms associated with gingival inflammation were detected in both populations. Therefore, the primary dental problem in patients with salivary gland hypofunction is compared with less risk (but greater than that for healthy individuals) for developing gingival and periodontal problems.

Impaired quality of life

Many of the oral-pharyngeal sequelae of salivary gland hypofunction and chronic xerostomia lead to an impaired quality of life. Dental hypofunction and spasm leads to the inability to diagnose, treat and identify the presence of patients at risk will help in the prevention of the condition.

With deficient reminiscentia, dental erosion is a more frequent occurrence in patients with salivary gland hypofunction. It is more likely to develop in medically compromised older adults. These conditions who complain of xerostomia and salivary gland hypofunction, the most common being diabetes, hypertension, hypercholesterolaemia, osteoarthritis and in patients with Sjögren’s syndrome. A swollen submandibular gland can be palpated medially from the postero-inferior border of the mandible.5

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(difficulty swallowing), and difficulty chewing food secondary to salivary gland hypofunction can lead to changes in food and fluid intake that compromise nutritional status. The speech and eating difficulties that develop can impair social interactions and may cause some patients to avoid social engagements. Dysphagia increases susceptibility to aspiration pneumonia and colonization of the lungs with Gram-negative anaerobes from the gingival sulcus.10

Management of xerostomia and salivary gland hypofunction

The initial step in the management of xerostomia is the establishment of a diagnosis. This frequently involves a multidisciplinary team of health care providers who communicate effectively, since many patients have concomitant medical conditions and frequently experience complications of polypharmacy. The second step is scheduling frequent oral health evaluations due to the high prevalence of oral complications.11

Maintenance of proper oral hygiene and hydration (water is the drink of choice) are helpful. Several habits, such as smoking, mouth breathing, and consumption of caffeine containing beverages, have been shown to increase the risk of xerostomia. Limiting or stopping these practices should lessen the severity of dry mouth symptoms. A low-sugar diet, daily topical fluoride use (e.g. fluoride toothpaste and mouth rinses), anti-microbial mouth rinses, and use of sugar-free gum or candy to stimulate salivary flow, help to prevent dental caries. Patients should be instructed on the frequent use of fluids during eating, particularly for dry and rough foods. Eating and swallowing problems secondary to salivary gland hypofunction can impair the intake of fibre-rich foods, restricting some older adults to a primarily soft and carbohydrate diet. Accordingly, patients must be counselled on a well-balanced, nutritionally adequate diet and the importance of limiting sugar intake, particularly between meals.

If there are remaining viable salivary glands, stimulation techniques using sugar-free chewing gum, candies (sweets), and mints can stimulate salivary output. Chewing sugar-less gum is an extremely effective and continuous dialogue, since it increases salivary output and increases salivary pH and buffer capacity. Buffered xylitol-containing chewing gums or mints are often recommended, because xylitol has an anti-carieogenic effect.

Conclusion

Saliva not only plays a pivotal role in the maintenance of a healthy homeostatic condition in the oral cavity, but contributes to one’s overall health and well-being. Components from saliva interact in different ways with the dentition to protect the teeth. Patients who lack sufficient saliva suffer from many oral diseases, of which caries is only one. To alleviate discomfort they are advised to use saliva stimulants and substitutes which have the function of lubricating the oral surfaces. Chewing sugar-free gum is increasingly being viewed as a delivery system for active agents that could potentially provide direct oral care benefits, as it promotes a strong flow of stimulated saliva.


*Underwriting costs for this Sali-vay and Oral Health edition were provided by Dr. Michael Dodds and The Wrigley Company.

References

Robert Pauley, Jr., DMD
Dr. Pauley has been practicing dentistry in the Atlanta area since graduating from the University of Kentucky College of Dentistry in 1988. Currently enrolled in the Advanced Dental Implant Studies, Dr. Pauley is an Associate Fellow of the American Academy of Implant Dentistry and a Fellow of the International Congress of Oral Implantologists.

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New 3Shape advisory board develops plan to improve patient care

By Dental Tribune International

COPENHAGEN, Denmark: 3Shape, a global provider of digital 3-D solutions for dental laboratories and dental clinics, has formed a dental advisory board made up of 12 prominent dental professionals from around the world. The new board will provide the company with insight and direction in digital technology and product development, as well as help the company move towards its goal of improving dental patient care.

“The 3Shape Dental Advisory Board provides 3Shape with a unique opportunity to work with the dental industry’s top digital experts to develop our technology and solutions and better answer real needs for dentists. Our goal is to improve patient care. Working alongside these industry leaders brings us one step closer to this,” said Flemming Thorup, President and CEO of 3Shape.

The group met for the first time earlier this month in Copenhagen. Leading digital dentistry advocate and practitioner Dr Jonathan Ferencz from the US chaired the two-day meeting. The advisory board developed a four-point plan to achieve the following objectives: (1) to share best practices in the use of digital technologies; (2) to define actual needs for better dentistry based on cases and experience; (3) to support the research and development of and innovation in dental technologies; and (4) to promote education and awareness of digital dentistry.

All board members are respected leaders in the use of digital dental solutions and intra-oral scanning. Members work with a variety of the digital dental systems available on the market and not necessarily 3Shape’s own 3-D scanners and CAD/CAM software.

“The way dentists care for patients has changed dramatically over the past few years, with digital technology driving much of this change. Digital workflows enable dental professionals to work more efficiently and accurately, with digital case handling now in many cases surpassing analogue treatment in quality. The creation of the board will serve to improve patient care even further and strengthen 3Shape’s reputation as an industry leader. At the two-day meeting we got a sense of 3Shape’s passion not only from their willingness to listen to the expertise and insight of the professionals gathered, but also from their commitment to taking action and applying our recommendations to create better solutions and improve patient care,” said Ferencz.

The 3Shape Dental Advisory Board comprises 11 dentists and one dental laboratory owner. Board members are from Australia, Brazil, Denmark, France, South Korea, Spain, Switzerland and the US. Plans for the board include biannual meetings to ensure the success of the four-point plan, as well as to assess both the industry and 3Shape product development.

Ferencz likened support for 3Shape in the industry to that of IT giant Apple: “I think there is a passion that users have for 3Shape that is analogous to the passion that Apple users have for their products. 3Shape is driven by innovation much the same as Apple. And like Apple, they make products that are more useful, beneficial and incidentally, look cool too.”

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Dental Tribune MEA: Dr. Brendan Carr, thank you for your time. Could you share with us your background and the road to becoming VP at The Emirates Dental Clinic Services in Dubai?

Dr. Brendan Carr: I graduated from Glasgow University in 1998 and worked in the NHS for 5 years before accepting a position in a large private practice in the Gold Coast Australia. After working and living in Australia for 4 years I took up a position in a private practice in West London for a further 5 years. I moved to Dubai in 2009 having been very fortunate to be selected for a position in the Emirates Airline dental clinic which has been a great move and a clinic I thoroughly enjoy working in. I took on the role as VP of the clinic in March 2015 and am very fortunate to have an excellent team working with me to provide high quality dental care to our eligible patient base.

What makes The Emirates Dental Clinic Services so unique in comparison with the hundreds of clinics in UAE?

The Emirates Clinic is unique in the way that we solely look after eligible staff and their dependents of the Emirates Group and no one else. This includes our team of over 5500 pilots. We need to ensure that this important group are dentally fit and most importantly, fit to fly. The dental treatment for all our patients is covered under the company’s generous insurance scheme. In addition our dentists are all salaried and as a result patients have the confidence that whatever treatment we recommend is done so with their best interests at heart and with no commercial motivation. The clinic has been open now for 19 years and in that time has grown from 2 dentists and 7 hygienists in order to support the expansion of the airline over the years with the aim of providing ethical, quality dental care in a safe environment as its core philosophy. Our clinic has also been independently accredited by the Australian Council on Health Care Standards (ACHS), which assesses the quality and safety of health care provided by clinics and hospitals. This is an award which we are all very proud of within the team and the Emirates Group as a whole.

How do you assess the level of dental medical services and awareness in UAE?

There is no doubt that the awareness of the importance of dental health is improving in the UAE and that the regulatory bodies (ACHS), which assess the quality and safety of health care provided by clinics and hospitals, are all very proud of within the team and the Emirates Group as a whole. There are many developments in the UAE to support the expansion of the airline over the years with the aim of providing ethical, quality dental care in a safe environment.

What is your impression of the Dental Industry Market and its development especially in Digital Dentistry?

In the past 10 years there has been a dramatic increase in the amount of new products and technologies coming into the market and it can often be a challenge keeping up with all of these developments. I am of the opinion that as with all industries, we should embrace new technologies that will improve the service that we provide for our patients and the working environment we work in. The digitalization of equipment whether it be with radiograph systems or CAD/CAM scanners is becoming more and more an integral part of the dental surgery. It is clear that when feedback has been provided to the manufacturers of problems being faced with new technology, this feedback is being listened to so as to improve the functionality of this technology. I am of the belief that the digital technology available nowadays justifies the investment required by dental clinics.

How do you and your staff keep up to date with the latest developments in Dentistry?

All of our staff are required to meet both the DHA continuing professional development standards and the CPD requirements of their home countries regulatory bodies. In order to achieve this we attend conferences and seminars both locally and overseas. We also have subscriptions to dental journals from around the world which we share within the group. We also take advantage of online CPD articles and reports.

What would you say is your dental philosophy? The message you would like to give to your patients?

My dental philosophy is that quality and safety come first and we provide the highest standard of care for our customers.

Is there anything else you would like to add?

I would like to thank the dental associates for your hard work, dedication and commitment to the dental profession. Thank you for the work you do in promoting dental education both locally and globally.

Inibsa dental: the specialists in dental anaesthesia

Inibsa Dental is a pharmaceutical company with over 65 years’ experience in the R&D and production of dental anaesthetics. With a production capacity of over 150 million cartridges a year, Inibsa Dental is positioned in its own right amongst the world’s leading manufacturers.

Inibsa Dental has the right anaesthetic to suit every patient. In their daily practice, dentists face a wide range of pathologies and patients. It is important to choose the appropriate anaesthetic for each treatment and patient considering factors such as the need for postoperative pain control, the required haemostasis, the risk of postoperative self-inflicted injuries and any existing contraindications to the selected local anaesthetic. Inibsa Dental provides a complete range of drugs to deliver safe, convenient and effective anaesthesia for every type of dental procedure and patient.

Inibsa Dental’s local anaesthetics are aseptically manufactured, latex-coated and have latex-free rubber components to ensure a smooth and painless injection.
not something that can be outsourced to a lab. You need to spend the time in doing these setups to determine if it's something that can be treated. Remember, there are cases where you cannot achieve the goals.

Before we get to the setup, it's worth examining the three basic concepts that this whole system is based on. That's not just orthognathic surgery, but orthodontics itself.

Concept No. 1: You need to start with a seated conical position. You will need to learn techniques to know when you have a seat, a condyle, and if it's in a stable position.

Concept No. 2: You can't believe what you see in the mouth. This is foreign to what we've taught in the orthodontic profession. We're trained that when we finish a case we have the patient bite down, and we say that the occlusion looks good or it doesn't. However, you need to understand that this is a learned muscle position. It's not a position that usually conduits to normal joint function.

Concept No. 3: Quit trying to do the impossible with orthodontic tooth movement. This is where orthognathic surgery comes into play. Don't try to fix skeletal aberrations with orthodontic tooth movements. Too often cases are treated with a compromised treatment plan, but due to the skeletal defects it is impossible to establish a functioning occlusion, thus resulting in failure.

We need a ruler to measure how we come up with a diagnosis and then we need the same ruler to measure our successes. So in the sample case, the ruler consists of five goals: joints, face, perio, teeth and function.

In a pre-surgical diagnostic setup, which is a trial treatment, the case can be diagnosed and treated before you start. This way you have the result in mind before beginning (five goals). The orthodontic, surgical and restorative modalities can all be combined pre-treatment. This way the patient knows what is needed to solve his or her particular malocclusion.

These pre-treatment setups are based on the VTO (tooth movement) and the STO (skeletal movement). Once all treatment modalities have been tried, the clinician will know if orthognathic surgery will work for the patient.

The surgical setup is performed just before surgery to determine the skeletal changes needed to correct the skeletal malocclusion and see if the prediction setup is correct. We use our rulers again to make certain that the five goals are obtainable. The surgical splint can also be constructed from the surgical setup. The surgical splint is used to place the skeletal parts in their correct position.

Steps in pre-surgical setups
First, we need to get the maxilla positioned in the articulator. We still recommend that you use the articulator as a tool to do your setup. Virtual setups tend not to include the patient's true functioning hinge axis. If you don't have the axis, you're liable to use setup an arc of closure that distorts the condyle. We establish the functioning terminal hinge access of the patient on both the left and right. We're then transferring the hinge access to the side of the face. Once we have it on the side of the face, we can do our axis-horizontal transfer. The dot shows the functioning hinge axis on the patient, represented on both the right and left sides.

The axis-path tracing that we created while trying to find the terminal hinge axis of this patient allowed us to look at the angle of eminence. What we like to see is a steep angle of eminence that helps disclude the posterior teeth in lateral border movements. Moreover, we like to see nice, smooth curved lines in the jaw motion, as that tells us the condyle and disc are working in harmony with each other.

We determine the best centric relation position in the mouth. Nevertheless, remember, you can't believe what you see in the mouth. That means this may even be worse, especially when we do a true hinges-axis mounting.

Figure 11 shows a true hinges-axis mounting. We have the true hinge axis, we have the axis-horizontal plane and we have the tooth position according to this setup. That means the pin, which was removed for the photograph, would be the true vertical line. The articulator mounting is now the same as the CBCT imaging.

What we see in the next image is that this patient only hits on the left side. Nothing touches on the right. As you can see, the open bite is even worse on the right. As you can also see, the open bite is even worse on the hinge-axis mounted models (Fig. 12)

Diagnostic setup
The diagnostic setup we've been discussing is based on the VTO, STO and the articulated cast mounting. The orthodontic setup, as well as a surgical setup, can be done on the same set of hinge-axis mounted models. We can also include in the diagnostic setup the correct arch form so a mutually protected occlusion can be obtained (Fig. 13).

Surgical setup
The surgical setup allows us to plan the surgery case before we go to the operating room. We perform this after we've finished the pre-surgical orthodontics and we're getting ready for the surgery itself.

What you should find when you compare the pre-treatment setup with the surgical setup is that the bony part should look very similar on the articulated mounting as the pre-treatment.

In this case, we've leveled the occlusal plane as part of our surgical setup. In doing so, we gained a large correction of the mandible without doing genioplasty. Again, this is based on the axis horizontal and the true vertical line.

Now that the surgical orthodontics has been completed, and the patient is now ready for surgery, we go back and do the natural head position and measure how far Glabella is from SN. We then do our axis transfer and place the markers. Then we double check that we have the natural head position (Fig. 14).

Next, we do our axis transfer, placing the maxilla exactly how it's related to the axis-horizontal plane. This is important because it enables us to place the maxilla on the articulator exactly as it exists on the patient, to the functioning axis.

Figure 15 shows the surgical models mounted according to the axis-horizontal plane. We use a centric bite to position the mandible to the maxilla, allowing the musculature to seat the condyles up and forward.

We then get into our surgical correction. We've corrected the maxilla. To maintain the proper torque of the anterior teeth, we'll need a four-part maxilla. Now we have our anterior segment (lateral to lateral) and two posterior segments (cuspid to second molar) and the palate. The anterior segment is positioned vertically and horizontally to the maxillary relaxed lip position. In addition, we take into account the tooth and gingival display the patient exhibits.

We've done the correction in the maxilla, putting the uncorrected mandible on. This shows the discrepancy you see once you've leveled the maxillary occlusal plane. Now we position the mandible. If we've done our pre-treatment surgical orthodontics correctly, things should fit together. Thus, after the mandibular correction is completed, and the setup, an uncorrected maxilla is placed on the articulator. You should see a large posterior open bite.

This is also an easy way to contrast our intermediate surgical splint, which you can see in Figures 16a & b. Note how we changed the plane of the mandible. This is based on doing the mandible first. By placing the mandible correctly in all three planes of space, we can establish the functional axis of the mandible.

This helps eliminate some of the errors that occur in orthognathic surgery. If we do the mandible first, and we know the vertical...
measurement that we need, it's easy to place the maxilla correctly to the mandible.

There are certain surgical techniques that need to be applied to accomplish the surgical orthodontic techniques. By following the proper surgical techniques, the postsurgical relapse can be kept to a minimum.

The other thing that we can do is establish even centric stops, according to the axis position. That's why in Figures 17a & b the models are painted red. We can do an occlusal analysis and equilibration and establish a stable tooth fit before surgery; all of which is based on the true terminal hinge axis.

We're able to get a Class I and we're able to gain enough overbite. We will need to do some postsurgical orthodontics to finish the occlusion, but the image shows the hinge axis closer on the articulator.

If you were able to hold the model, you would notice that there's no rocking. Everything is stable. You don't want the patient to come out of burger and find that the patient has trouble finding a surgical orthodontic position with the joint seated.

In order to gain even stops, we had to remove some tooth enamel around the upper and lower arches. That's what we do in the operating room before we begin the operation. We do the equilibration when the patient is asleep and before the operation begins.

As you can see in the post treatment intra-oral and extra-oral photos (Fig. 18), the facial changes include a shortening of the lower facial third. An adequate overbite has been established so a mutually protected occlusion can be seen. The proper disclusion, where the back teeth separate by at least 2 to 3 mm, has been established.

If we apply the second concept in the mandible (you see in the mouth), we need to go to post treatment hinge-axis mounted models. Figure 19 shows the cone-beam data, both pre- and post treatment. Note the double platform is maintainable to establish a stable platform to position the maxilla.

Surgery

One of the most important take-home lessons from this article is that you need to know your surgeon. Establishing a one-on-one relationship with your surgeon can be challenging. If the orthodontist does not know what the surgeon goes through, then in the planning stage pre-treatment, the teeth may be placed in a position that the surgeon will have trouble establishing in the correct skeletal position. This is a relationship that simply takes time.

Once you have knowledge of the surgeon, then you need to know what happens at the hospital because this becomes an important part, especially during recovery.

The people who are handling recovery need an exceptional level of compassion, and they need to be able to handle emergencies. Oftentimes the patient will get sick, and his or her teeth are held together with elastic and wires. The healing period normally lasts 10 weeks. It may be longer depending on how the segments are healing. The point is that we don't get into postsurgical orthodontics before the segments have stabilized.

Additional considerations

We know that you need to know the joint status. You'll need to know how to do a soft-tissue analysis and how to establish a surgical treatment objective. You'll need to know how to do pre-treatment setups and surgical setups. You need to apply all of this to your patient. Figure 19a shows all patients (mixed dentition, adolescent or adult).

If the teeth aren't in the correct position in the jaw, then there's no way the surgeon can place the parts correctly, resulting in surgical failure. Most surgical failures happen because of orthodontics.

One of the things you need to keep in mind in your pre-treatment surgical orthodontics is that you established the correct arch form. Without the correct arch form, it's difficult to put the parts together.

The other thing to keep in mind is the actual 5:1 position of the teeth. If you have up-righted the upper anterior teeth, the surgeon will have a difficult time fitting the mandible to this.

If you have tipped the lower anterior teeth back too far — such as in a Class III — then you cannot obtain a good maximum intercuspation because of the incorrect torque of the anterior. The setup part of the procedure will give you this information.

Age

If it's an adolescent patient, you can do the presurgical orthodontic and establish the correct axial position of the teeth in each jaw. However, do not try to fix the occlusion. That means the teeth will be in the proper positions when you approach the surgery.

As a rule, I won't get into a surgical case before a female is in her early 20s, and with males in their mid 20s. I've seen cases where they were done earlier and actually grew out of the correction.

Learning these techniques

We all need to be taught to do these things, and it needs to be from someone who has done them for a number of years so you can be certain that the methods you are learning will work. They are taught in the Advanced Education in Orthodontics (AEO) course, and we do practice them.

That includes surgical setup, orthodontic setup, soft-tissue cephalometric analysis and surgical treatment objective. They need to be practiced a number of times. It's not something you can learn on your own. You need a mentor who will teach you all the characteristics you'll need.

In the lab phase of the AEO class, we do get into mounting cases on the true hinge axis. You will learn how to establish these on patients. They are not time consuming. Normally, establishing a hinge axis in the axis-path tracing and transfer takes no more than six or seven minutes, so the clinician is not using a lot of his or her time to establish a correct hinge-axis mounting.

The instructors will demonstrate how it's done, and then you have to perform the procedures. Under the proper guidance, you can learn these techniques and apply them in an office setting in an economical manner.

Without the coaching, these procedures can feel like too much of a chore. Moreover, without coaching, there's no way to do a surgical workup for the benefit of the patient, which of course, is the main reason you need to know these procedures.

It also helps if you work with the same surgeon for a number of years. It's true that the restorative dentist who obtains the final outcome is the one who should finish the case from where you left it.

It takes some time and it takes some effort to learn these procedures. But once you do learn them, and you have the technique, your surgical cases will be more stable. You can also down the instances of surgical relapse that you see.

Above all, remember this is all for the benefit of the patient. You need to spend time learning and you need to spend time in the operating room to know the problems that can occur. Then you need to spend time in the diagnoses and workup.

However, the benefit is for the patient, who winds up with a functioning occlusion and improved smile. The gingival tissues are healthy and the jaw functions correctly.

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**About the Author**

Dr Theodore D. Freeland, DDS, MS, is a board-certified orthodontist in Gaylord, Mich. After graduating from Albion College in 1967, he attended the University of Detroit Mercy, earning a dental degree in 1971 and his master’s degree in orthodontics in 1978. Freeland has completed Dr. Gene Williamson’s course in occlusion and TMJ and the Roth/Williams course in advanced orthodontics.

In addition, Freeland has served as an adjunct professor in orthodontics at the University of Detroit Mercy, and held appointments at the University of Detroit in fixed and removable orthodontics; the Roth/Williams Center as a clinical instructor; and the Advanced Education in Orthodontics Group as director and instructor.

Freeland is an accomplished author who lectures nationally and internationally. He's also the author of many articles, including several on the use of cone beam data in orthodontics.
Modern life can be challenging.

Modern, healthy lifestyles and dietary habits often mean an increase in the consumption of acid-rich foods and drinks. However, experts believe that as few as 4 acidic challenges a day can put patients at risk of Acid Wear.\(^1\) In addition to giving behavioural advice (e.g. diet and brushing), your patients may also benefit from a daily toothpaste that can protect enamel from these multiple acid challenges.

Pronamel is proven to reharden acid-softened enamel and provide ongoing protection from the effects of Acid Wear.\(^4\)\(^5\)

Daily protection from the effects of Acid Wear

References:
Sensodyne® understands that dentine hypersensitivity patients have differing needs

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- Clinically proven to provide dentine hypersensitivity relief[1-3] - Contains fluoride to strengthen enamel - Helps to maintain good gingival health[4,6]

Sensodyne® Complete Protection, powered by NovaMin®, – an advanced approach to dentine hypersensitivity relief

- NovaMin®, a calcium and phosphate delivery technology, initiates a cascade of events on contact with saliva[7,12] which leads to formation of a hydroxyapatite-like restorative layer over exposed dentine and within dentine tubules.[7-9]

- In vitro studies have shown that the hydroxyapatite-like layer starts building from the first use[7-9] and is up to 50% harder than dentine.[9,14]

- The hydroxyapatite-like layer binds firmly to collagen within exposed dentine[9,15] and has shown in in vitro studies to be resistant to daily physical and chemical oral challenges.[9,14-17] such as toothbrush abrasion[9,16] and acidic food and drinks.[14,17]

Sensodyne® Complete Protection helps maintain good gingival health[4-6]

Good brushing technique can be enhanced with the use of a specially designed dentifrice to help maintain good gingival health.[16,19]

In clinical studies, NovaMin® containing dentifrices have shown up to 16.4% improvement in plaque control as well as significant reduction in gingival bleeding index, compared to control toothpastes.[5-6]

In vitro studies show that a hydroxyapatite-like layer forms over exposed dentine and within the dentine tubules[2,8,10,12,13,33]

Adapted from Tai et al., 2006. In vitro cross-section SEM image of hydroxyapatite-like layer formed by supersaturated NovaMin® solution in artificial saliva after 5 days (no brushing).[13]

References:
By Shelly L. Campbell, RDH, MPH

The cabbage soup diet. NASA-inspired space food sticks. The belt massager machine to ‘jiggle away the pounds.’ How are these things connected? These health-fad, fitness offerings from the 1960s quickly faded from the public eye after failing to live up to their hype, or by causing safety concerns.

Another health improvement introduction in the '60s – the electric toothbrush – could have met a similar fate because early prototypes were bulky, unreliable, and often associated with creating electric shock. But unlike other inventors of health fads discredited over decades, two well-known electric toothbrush manufacturers continued to evolve more streamlined and technologically advanced power toothbrush models over the next several decades.

Today, many children and adults have permanently replaced their manual brushes with an electric model, having been over by the electric brush’s reliable cleaning efficiency and ease of use. Value-based battery brushes, as well as premium multi-functional rechargeable electric toothbrushes (also referred to as power toothbrushes), are now mainstream, their popularity reflected in exponential growth over the last decade.1 Interest- ingly, a recent survey showed only 14% of women surveyed would consider giving up their power brush as a budget-saving sacrifice.2 It’s safe to say that power brushes are here to stay. Dental professionals who already have a lot on their plates. From their systematic reviews and meta-analyses of clinical research, the Cochrane Group concluded that one brush type produced statistically significantly superior results to manual brushing.3,4 The Cochrane Group compared one brush technology – oscillating-rotating (O-R) – standing out as compared to manual toothbrushes based on the Cochrane findings.5

**The safety question**

Power toothbrush effectiveness is seldom debated, but safety concerns are involved. Could the documented connection between power toothbrushing and gingival inflammation, lead to more gingival abrasion caused by longer brushing times and increased brushing frequency? Does power toothbrushing result in more hard tissue wear compared to manual brushing? Will enthusiastic power brush users apply too much force and compromise their gingival tissues or promote recession?6

Although the Cochrane review didn’t evaluate safety as the primary objective, it did state, “Any reported side effects were localized and temporary.”6 Other studies and literature reviews have generally come to the same conclusion.7,8 Case closed. Or is it? Lingering questions about the safety of power brushes on hard and soft tissues have persisted in some quarters.9 Hygienists and dentists know their patients take their professional product recommendations seriously, and want to ensure they’re suggesting the most effective and safe oral commercial products and regimens.

The goal should be evidence-based recommendations as opposed to speculation, but keeping up with all of the literature and assessing the quality and relevance of each individual power toothbrush study requires a significant commitment of time and effort for profession- als who already have a lot on their plates.

In search of an answer

Systematic reviews of health topics (see sidebar) can be a great asset to busy professionals who don’t have time to comb through the literature themselves. To address the power toothbrush safety question, a recently pub- lished systematic review in the Journal of Periodontology considered theoretical safety concerns over power versus manual toothbrushes through a comprehensive analysis of all relevant published reports. The authors of the Cochrane review focused on comparison of two six-month clinical trials, which ranged from four days to three years. These included adults with and without elevated plaque, gingivitis and/or bleeding, children with and without orthodontia, and periodontal pa- tients. Braun/Oral-B or Philips/Jordan manufactured the power brushes in the reviewed studies, while 10 various comparator manual brushes were also rep- resented. The majority of toothbrushing was unsupervised in the home setting.

**What was the key finding?**

Here are the key findings:

1. A meta-analysis [see sidebar] of two six-month clinical trials focusing exclusively on gingival recession showed there were no significant recession differences between power and manual toothbrush groups.

2. Did O-R power brushes use more force than manual brushes? No. A meta-analysis [see sidebar] of two six-month clinical trials focusing exclusively on gingival recession showed there were no significant recession differences between power and manual toothbrush groups.

3. Gingival abrasions that could potentially be caused by tooth- brushing were found in both the manual and O-R power tooth- brushes, but the authors of the published reports de- scribed them as either negligible/not clinically significant, or occurring with about the same frequency in the manual and power brush groups, and not significantly different when statistically tested.

**How important is in vitro data?**

Did the in vitro studies show greater wear with O-R brushes? Since there is currently no standard methodology with enough sensitivity for long-term clinical assessment of hard tissue brush- ing damage, in vitro studies are a valuable step in identifying potential safety concerns (like abrasion potential) that are challenging to discover clinically.

Four in vitro (laboratory) inves- tigations of toothbrush abrasion and wear with use of the O-R power toothbrushes, compared with manual brushes used under simulated clinical conditions. The authors of the fourth study suggested that bovine enamel loss after an acidic attack may be increased with use of cer- tain power brushes where used at the same brushing force. But understanding the clinical impli- cations is difficult, given that toothbrushing forces have been...
**Oral Probiotics – Overview**

By Victoria Wilson, UK

oral probiotics are live bacteria that are similar (or identical) to the beneficial microorganisms found naturally in the oral cavity. The addition of oral probiotics to an oral care regimen can restore and preserve the natural balance of beneficial bacteria, which can be depleted by diet, stress, medication, illness or other factors. Oral probiotics support tooth and gum health, whiten teeth and freshen breath.

How on earth did the words ‘brush’ and ‘floss’ come to define our entire profession? Did we spend almost 5,000 grueling hours learning only how to teach people to brush ‘n’ floss? I don’t think so. What we learned is how to bring the mouth to health. What we learned is more accurately achieved today by health promoting products such as oral probiotics, making dietary changes, and neurogenesis.

The brain is plastic in that it’s moldable and new pathways can be created. This is called neurogenesis. Providing the brain opportunities for new neural connections is important to brain health. It turns out that playing Sudoku doesn’t stimulate brain fitness; it helps a person become really good at Sudoku. It is kind of like telling patients to brush ‘n’ floss the same way over and over – you become really great at manipulating the mechanical removal of plaque.

To start your own neurogenesis mission, the brush or floss default story. Focus on the term biofilm management instead of the words ‘plaque’. As you study and then talk to your patients about biofilm. Then talk about how oral probiotics can reduce oral biofilm, particularly in the secret spots where a brush and floss cannot reach. All probiotics work in the dynamic component of biofilm, but only a few can function in the first six inches of the mouth.

When using products containing freeze-dried oral probiotics in the mouth, patients can enhance their activation with the release of live, active bacteria that attaches to the tooth surface and inhibits the adherence of the teeth and deep beneath the gum line. These colonies become a bioburden of beneficial bacteria to support oral health. With daily replenishment, these probiotic bacteria re-establish themselves both on the surface and deep beneath the gum line. These colonies become a bioburden of beneficial bacteria to support oral health.

In the oral cavity, harmful bacteria convert sugar and carbohydrates into lactic acid. Lactic acid is the bacterial byproduct which is responsible for dental caries and the erosion of tooth enamel. Without requiring lifestyle changes, the addition of oral probiotics can positively affect the long-term health and wellness of the mouth and the other health systems dependent on oral health.

Some oral probiotic strains are beneficial in promoting healthy acidic conditions by lowering the pH and reducing the number of acidogenic and aciduric bacteria. These bacteria are freeze-dried so that they can reanimate under moist conditions.

Use of oral probiotics

**Caries**

The ecological plaque hypothesis states that caries and periodontal disease are the two most common bacterial-associated diseases in the world, originate from a disturbance in the balance and diversity in the biofilm. Contributing causes may be inadequate oral hygiene, incorrect diet, and/or other factors which determine the micro-ecology. Caries is caused by the presence of acid-producing streptococci, which metabolize dietary sugars to create a low local pH environment which can de-mineralize enamel. Oral probiotics are able to naturally alter the oral pH levels.

Oral probiotics and gut probiotics share a common health goal. To achieve that goal they use health-promoting bacteria to crowd out the disease-promoting bacteria. That’s how the oral probiotics used to treat Probiotics US 58 and Blis K12/M18 work. The Probiotics’ complex is a grouping of oral probiotics that build a much smaller biofilm because they are not aciduric (don’t make acid).

Pathogenic biofilm has a couple of requisites, and one is a low pH. So a biofilm with early colonizers that doesn’t make acid has a longer time harboring the bacteria that we associate with dental disease. Harnessing this pH characteristic of biofilms gives right up into the face of tradi- tional bacterial control. This allows for a more consistent application. The presence of oral probiotics in the mouth is determined by whether or not the patient has taken probiotics regularly. The presence of oral probiotics in the mouth is determined by whether or not the patient has taken probiotics regularly.

This pH alteration is energized by one particular friendly bacterial strain in the Probiotics’ family, Streptococcus oralis K12, and Streptococcus uberis K12 give off hydrogen peroxide. Take a shade guide picture before starting your patients on these probiotics and see if you notice a difference. Are the teeth lighter?

In the early days of caries bacteri- al studies, it was learned that when Streptococcus mutans were fed sucrose, they would excrete massive amounts of the acid that damages tooth enamel. Streptococcus mutans and mucolytic acid. This gooi of the biofilm protects the popu- lation of the biofilm from the damaging effects caused by such things as antibi- otics, toothbrushes, and floss. Snuggling the mouth with the Probiotics’ complex populates the niche previously inhabited by aciduric bacteria, that grow faster than Strep. mutans can.
PRECISION CLEAN BRUSH HEAD PROVIDES

UP TO 5x

GREATER REDUCTION
IN PLAQUE BIOFILM ALONG THE GUMLINE

5x

* vs. a regular manual toothbrush

Oral-B, most Dentist Recommended Toothbrush Brand worldwide

continuing the care that starts in your chair
Hygiene safety for your dental practice

As a leading dental company, KaVo is offering comprehensive, all-inclusive infection protection and more security for the patient and dental practice team. All KaVo units have an automatic on-going and intensive sterilisation function which ensures the continuous germ re-duction of the systems which convey water and prevents the formation of microorganisms in peri-dends of stagnation.

In addition, the dental in-strument rinsing function en-ables efficient tools are rinsed before beginning treatment and after each patient treatment au-tomatically in a BKA compli-ant manner. Of course, handles, instrument shelves, spouton bowls and suction cannels can be removed easily and without difficulty for cleaning and disinfec-tion.

The smooth, closed and hy-giene-friendly surfaces of the dental units also play a role in reducing the infection risk.

The KaVo ESTETICA E70 and E90 dental units also have with OXImat and DEKamat a fully automatic hygiene system: the manual, time-consuming mix-ture or refilling sterilisation and disinfec-tants are thereby a thing of the past. In the KaVo ESTET-ICA E50, the optionally avail-able CENTRIMAT takes over the central supply of the unit with DEKASEPTOL gel which ensures effective and efficient cleaning and disinfection of the suction or drainage system which is sub-ject to daily use.

With OXYGENAL 6, KaVo also offers an environmentally friendly and cost-effective system based on hydrogen peroxide which has proven its effective-ness, material compatibility and user-friendliness in daily prac-tice.

In addition to the treatment units, the tool portfolio of KaVo is also appealing due to numer-ous hygiene effects: effective re-duction steps, for example, pre-vent contamination of the inside of the tools and thereby support hygiene safety. The Planetary coat-ing of the tools not only of-fers excellent gripping proper-ties but is also easy to clean. For decades, KaVo tools and turbines are ther-mally disinfected and sterilisable. Minimum gap dimen-sions also make hygiene safer and more efficient.

Whiter Teeth
Natural by-product of oral pro-biotics is a low-dose of hydrogen peroxide. As this good bacteria is replenished daily, it creates a gradual tooth whitening effect with visible results of long con-tact times, delivering 24 hour per day coverage of balancing and brightening.

Yellowing, surface discolouration or staining are all results of life-style choices: tobacco use, cof-fee, tea, beets, etc. Anything that stains will affect the color of the tooth. Tooth enamel is porous, filled with microscopic cracks and pores that hold onto stain- ing products. Commercial tooth whiteners employ extremely high levels of harsh, chemical hydrogen peroxide which can actually damage the tooth and create a roughness on the tooth’s surface. This increases the film that builds up on the tooth sur-faces and in the micro cracks and is available to hold on to stains much better.

S. oralis KJ5 binds to the surface of the teeth, crowding out harm-ful bacteria by competing for the same nutrients and surface spaces. In laboratory studies, the low-dose hydrogen perox-ide produced by the S. oralis KJ5 created a continuous whitening benefit that didn’t plateau over the duration of the study. With daily use, the colonization of S. oralis KJ5 provides a consistent, and expanding population for gradual and continual whitening effects.

The hydrogen peroxide metabo-lites of S. oralis KJ5 also con-tribute to the breath-freshening features of oral probiotics by inhibiting the growth of harm-ful bacteria. The decrease in these harmful bacteria results in a substantial reduction in the volatile sulfate compounds asso-ciated with bad breath.

Unlike other whitening prod-ucts, oral probiotics are com-pletely free for veneers, caps and dentures.

Reexamination
Now ask yourself – if you cannot motivate someone to achieve to-tal dental biofilm removal with a toothbrush, can you get them to incorporate one single probiotic tablet a day into their routine? Using these tools addresses the forgotten reality of how much room a biofilm needs, the com-plexity of a mature biofilm, and the size of human cells. Stop wearing the badge of “Floss Nags” with pride. Serve yourself and your patients better by of-fering scientifically proven health-promoting products like oral probiotics.

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Dr. Rose & Associates Clinic wilson@dental-tribune.me

With the QUATTROcare Plus, KaVo is offering an excellent tool for a validated, R1-com-plaint and cost-efficient interior cleaning and the maintenance of instruments. Because: to ef-fectively prevent infections, den-tal transfer elements must be cleaned and disinfected inside and out.

Due to its many years of ex-perience with dental practice hygiene, the proven and co-ordinated system (360° competence) with proven effec-tiveness and excellent stability of the materials used, KaVo is your top choice as partner when it comes to hygiene safety, also for instruments.

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There are a number of reasons to choose Philips Sonicare.

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Ask your dentist about Philips Sonicare today!

*FlexCare Platinum and DiamondClean compared to a manual toothbrush.
Philips introduces its best brush yet: Sonicare DiamondClean, helping users achieve brushing brilliance every time

By Philips

Dubai, UAE - Philips is proud to present the new Sonicare DiamondClean – a brush that takes sonic tooth brushing to its most sophisticated level and which delivers Sonicare’s best clean yet removing up to 100% more plaque in hard to reach places than a manual toothbrush.

Sonicare DiamondClean harnesses Philips Sonicare’s patented sonic technology to produce a powerful dynamic cleaning action for a difference users can see and feel. It is gentler on teeth and gums than a manual toothbrush, helping to keep teeth stronger and healthier for longer. Philips Sonicare gently whips toothpaste into an oxygen-rich foamy liquid and directs it between and behind teeth and along the gumline, where plaque bacteria flourish. Sonicare DiamondClean is clinically proven to remove up to 100% of plaque from hard to reach places and to improve gum health in just 2 weeks. It is also clinically proven to whiten teeth in 1 week; and it's gentle technology actually helps protect against gum irritation and recession to help reduce sensitivity. Now is the perfect time to give your teeth the celebrity treatment and switch to Sonicare to really experience the difference.

The brush is able to deliver a unique whole mouth clean feeling thanks to its five brush modes that allow you to tailor your brushing according to your needs as well as your dental professional's advice. The brush modes range from:

- **Clean** – the standard mode for a whole mouth clean
- **White** – removes surface stains to whiten teeth
- **Polish** – brightens and polishes teeth to bring out their natural brilliance
- **Gum Care** – gently stimulates and massages gums
- **Sensitive** – an extra-gentle mode for sensitive teeth

Highly charged DiamondClean's chrome base also features a unique charging glass that can be used for mouth rinsing, but also incorporates the latest in inductive charging technology to charge the toothbrush as it rests in the glass - making it stylish enough to display in the most fashionable bathroom.

Not only is Sonicare DiamondClean Philips’ most advanced brush yet, it’s also our most easy to use and stylish. DiamondClean's power handle has a ceramic finish and a chrome accent ring highlights the elegant neck of the brush. The technology in the handle is hidden so that the sleek matte finish of the brush is uncluttered by electronic visual displays. Only when the on button is pressed are the brushing modes illuminated to reveal the array of options. These are then simply selected by scrolling down using a one button action.

When travelling or on the go, Sonicare DiamondClean is designed for convenience with users being able to keep their brush fully charged using a revolutionary USB travel case that can be plugged into almost any laptop computer and saves the hassle of having to pack plugs and adaptors. But only the most intrepid travellers need worry about this advanced feature as Sonicare DiamondClean holds an impressive three weeks charge.

Brilliant cut Sonicare DiamondClean brush heads also sport a new diamond-cut tuft formation to provide you with an even more efficient brushing experience. The uniquely designed diamond bristle heads have 44% more bristles than Philips Sonicare’s standard sized ProResults brush heads, providing you with both superior plaque removal and whiter teeth. The heads come in two sizes – Standard and Compact – for focused cleaning in areas of special need, for orthodontic patients and those with smaller mouths.

For more information about Philips Sonicare DiamondClean or the Philips Sonicare range, including copies of clinical studies, visit www.mea.philips.com/e/oralhealthcare/ar
Infection control in dentistry has never been more essential

By Dr. Safura Baharin, Malaysia

The World Health Organization (WHO) has reported a rise in airborne infections worldwide. Tuberculosis in particular has increased in the developing world.[1,2] It has been stipulated that the risk of exposure to tubercle bacilli in susceptible DHCP is greater than in healthy individuals. Bhattacharyya et al concluded that dentists and their assistants, who are exposed for approximately 15 minutes during peak aerosol concentration, have a slightly higher risk of exposure to Mycobacterium tuberculosis than the general public does.[8] During this period, the DHCP inhales about 0.014–0.12 μl of aerosolised saliva, which may contain viable pathogens that can have a detrimental effect on the health of susceptible DHCP.

With all of this in mind, it is the responsibility of DHCP to adhere strictly to recommended infection control guidelines and policies. Several measures should be taken to reduce and control airborne contamination in the dental clinic. For example, it has been demonstrated that the use of a mouthrinse, high-volume evacuation or a combination of both methods significantly reduces the number of colony-forming units in aerosols emitted during ultrasonic scaling.[13] Routine use of rubber dam isolation provides a clean and dry area for placement of dental restorations, prevents saliva and blood splatter, and protects the patient's mouth and airway.

Using personal protective equipment (PPE), such as surgical masks (with at least 95% efficiency against particles 0.3–1 μm in diameter; changed for every patient or every 20 minutes in an aerosol environment or every 60 minutes in a non-aerosol environment), safety glasses with lateral protection to prevent contact with eyes, as well as disposable gowns and gloves to reduce the penetration of or contact with bacterial aerosols and splatters, is vital.

Regular maintenance of the air-conditioning system is recommended too, as good ventilation has a diluting effect on the airborne microbial load, especially at night when the clinic is closed.[14] Air samples taken at different times at a multi-chair dental clinic showed that bacterial aerosols are more concentrated during treatment and that there is higher concentration of circulating bacterial aerosols at the beginning of the day, which may be related to reduced ventilation.[14] Residual bacterial aerosols can be removed through air filters or ultrafiltration.

As splatters can travel as far as the door or supply counter in the middle of a multi-chair dental clinic,[14] all clean, used instruments and equipment should be kept in closed cabinets or drawers to prevent contamination. Other important measures that must be taken to prevent cross-infection include adequate sterilisation of dental instruments, disinfection of work surfaces before and after each dental procedure, disinfection of all dental materials and work sent out to the laboratory, and regular maintenance of the dental water lines and equipment, which has the potential to harbour bacteria. All dental water lines should be purged at the beginning of each day for between 5 and 10 minutes and flushed thoroughly with water, as residual water may become contaminated overnight and biofilm may develop along the inner side of the tube. Purging will result in a significant decrease in bacterial counts.[15, 19]

The Canadian Dental Association recommends using high-speed handpieces for 20–30 seconds after each treatment to purge all potentially contaminated aerosols. This procedure has been proven to reduce the bacterial load of the water line significantly.[17] Blood cells as well as bacterial and viral particles, can survive inside handpieces even after disinfection. They must therefore be sterilised between patients.[17, 18]

The clinic floor should be disinfected and cleaned with an antimicrobial disinfectant solution at least twice per day to eradicate any bacterial residue from splatter or aerosols.

It is a well-known fact that private dental clinics sometimes employ dental assistants who have not received certified training. Improperly trained personnel, however, may lead to poor infection control practices. It is the responsibility of every dentist to educate and train his or her assistants in the standard procedures. Furthermore, DHCP is recommended too, as good ventilation has a diluting effect on the airborne microbial load, especially at night when the clinic is closed.

Basic infection control measures, such as frequent handwashing, wearing a mask, and following standard and additional precautions, the last being specific to MERS-CoV, have been published to inform and educate dental health personnel (DHCP) about the importance of practising adequate infection control.
By Ivoclar Vivadent

The extended product range of the IPS InLine metal-ceramic system from Ivoclar Vivadent offers dental professionals an even greater choice of application options.

It is often the small things that render the daily lab work more comfortable and flexible. This also applies to the IPS InLine System Powder Opacquer which makes alternative application techniques accessible.

The IPS InLine System includes a manageable number of components and an extensive range of applications according to the respective prosthetic situation. The system is suitable for every processing technique – from the easy one-layer and the conventional multi-layer to the press-on technique. The new IPS InLine Powder Opacquer meets this high level of flexibility as it is compatible with all system components.

Furthermore, users benefit from many economic and technological advantages: The Powder Opacquer is equally suitable for the conventional application with a brush or application instrument as well as for the spray-on technique. What is more, the same IPS InLine System Powder Opacquer Liquid is used irrespective of the application technique.

Fast veneering of all CAD/CAM-fabricated and cast metal frameworks

The homogeneous structure of the new Powder Opacquer with optimized grain size distribution ensures a high application and firing stability.

Thanks to the optimally coordinated opacity and colour saturation, the desired shade is easily achieved with the Powder Opacquer. Frameworks, fabricated with either conventional casting methods or digital processes, are quickly masked even with only thin layers due to the material’s excellent masking strength.

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The necessity of (Dental Technician-Patient) interaction for a successful esthetic material selection

By Aiham Farah, Syria

More important than the indications of a certain case, (especially when the need behind the treatment plan is the bleach-esthetic part in the first place), is to understand the patient's needs and expectations.

As a dental technician, you have to give your insights about a possible solutions from the technical standpoint, and whether these solutions can be done to the extent of the patient's esthetic visualization, or if they will compromise another functional or phonetics parameters.

Finding out more about the patient's personality and what needs to be expressed with his/her smile, will add a lot of judgment on our decision as to what to choose of restorative esthetic material. Like how bright the color should be? Is it a concern of how natural the outcome looks? Or on the contrary, what matters is how prominent and visible to everyone it is?

This can be done only if we allow the dental technician to interact with the patient's personality that is hidden behind his replica plaster-working model!

Therefore, I divide the esthetic-seeking people, who show up to the dental studios asking for a change in their smiles (based on the intensity of bleach color required, and the concern of how life-like those ceramic teeth should look like) to a three categories:

Back to Natural – Bright decent - extreme white. Then I relate that to the most used esthetic restorative material system in the world, the IPS e.max system.

So The dental team can easily rely on certain factors in choosing:

1st. their restorative ingots according to a scale of bright-dark shades and transparent-opacity range.

2nd. the working technique to be carried out.

For (Back to Natural) patients, The Layering working technique is a must, (Value & LT & MO1) ingots are recommended.

For (Bright decent) Patients Either the Cut-back working technique Or layering, (LT BL2, BL3 & MO0) ingots are recommended.

For (extreme White) Patients Full press & Staining working technique is recommended, (MO0 & LT BL1) ingots are recommended.

Never to forget that the above mentioned is always relative to the thickness of the material. 

John Battersby:

Have you observed any difference between Asian and European technicians when it comes to their familiarity with and adoption of the latest digital dentistry technologies?

Dr Andrea Mastrorosa Agnini:

We have not really had the opportunity to work closely with any Asian technicians yet, so we do not know with which technologies they are familiar or which technologies have already been widely adopted in Asia. What we have seen is that there is mass and growing interest in all of them.

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Interview: “One cannot just replace a technician with a machine”

Interview with the Agnini brothers, dentists and prominent specialists in fixed prosthetics, periodontology, and implantology

By John Battersby, Singapore

Brothers Dr Andrea Mastrorosa Agnini and Dr Alessandro Agnini presented a series of lectures on digital dentistry and mastering the fully digital workflow at IDEM Singapore 2014 in April. The doctors were two of the star speakers at the Dental Technician Forum introduced for the first time at this year’s IDEM Singapore. Between their packed schedule of lectures and open panel discussions, the brothers took time out to answer some questions on their experiences in Asia, the current state of digital dentistry, CAD/CAM, and 3-D printing, and the direction in which they see these technologies developing in the future.

John Battersby: Have you observed any difference between Asian and European technicians when it comes to their familiarity with and adoption of the latest digital dentistry technology?

Dr Andrea Mastrorosa Agnini: We have not really had the opportunity to work closely with any Asian technicians yet, so we do not know with which technologies they are familiar or which technologies have already been widely adopted in Asia. What we have seen is that there is mass and growing interest in all of them.

> Page 3D
aspects of digital dentistry, not only among technicians but also among all members of the modern dental team.

Dr Alejandro Agnini: Yes, this is why there are more events like the Dental Technician Forum at IDEM Singapore and other similar events around Asia, just like one sees in Europe and the US. We were here in Singapore last November for the CAD/CAM conference and we will be back again later this year for another.

Dr A. Agnini: Actually, we had quite a few questions from the floor and via the SMS system they used for the Dental Technician Forum. The audience can text any questions they have to the technician who is well trained for the Dental Technician Forum. The audience can text any questions they have to

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