Visit DTMEA / CAPP at IDS Cologne 2017

By Dental Tribune MEA / CAPPmea

COLOGNE, Germany: CAPP (License holder of Dental Tribune Middle East & Africa edition) will once again participate at IDS Cologne, the world’s largest dental trade show as part of the global Dental Tribune International (DTI) family exhibiting at the Cosy 100 square meter DTI Media Lounge (Hall 4, booth D60 F61). CAPP will play its part in delivering the latest news from and to the Middle East by providing a knowledge bridge through numerous channels supporting the activities of DTI.

In collaboration with its German licensee ORMUS MEWA, DTI will be publishing a new issue of its well-established Today newspaper on each of the five days, providing comprehensive coverage of the previous day’s events. For the first time, the two publishers will be setting up a lecture forum at their booth—known as the Media Lounge, a restaurant and meeting area at which leaders in dentistry conventionally gather during IDS. At the forum, which will seat up to 200 participants, DTI will be holding Dental Tribune Study Club lectures and press conferences through DTI Communication Services.

The DTI portfolio spearheaded by CEO Mr. Torsten Oemus reaches over 650,000 dental professionals worldwide in 25 different languages in over 90 countries. Live daily coverage will take place daily through multiple channels including DTI Press events, DTI Lecture Corner, daily today show publications, digital e-newsletters, e-blasts, social media and live video broadcasting. CAPP representing the Middle East publication of Dental Tribune will do its part to present the news to the large (?) following of dental professionals who are unable to travel to Cologne. One of the major themes this year will be the focus on 3D Printing in the dental field, a subject widely discussed within the dental profession. Dental Technicians Intentional Meeting (DTIM) will take place as a parallel session on 05 May targeted to gather 250 dental technicians from the MEA region for scientific lectures, hands-on presentations and table clinics. A total of 16 multidisciplinary hand-on courses are scheduled to take place between 01-08 May 2017, a falling under the umbrella of “Dubai Dental Week”, the largest scientific continuing dental educational programme in the region presented over 8 days. This year’s exhibition will feature the latest product launches from IDS Cologne presented by the industry players. Platinum Sponsor: Dentiply Siroca, Crystal Sponsor: Ivoclar Vivadent AG, Silver Sponsor: CSK, Gold Sponsor: Planmeca OY, MAC Digital Dental Systems LLC’s shape, VITA Zahnfabrik, Official Sponsors Colene Whaledent AG, Jordan (Castel General Trading), Adentate GmbH, Roeland Dental Solutions/Enarates Computers Co LLC, Horico Hopf, Ringland Dental Solutions/3dent, Hager & Meisiger, Abutment Solutions, Zirkonzahn GmbH, Srl Henry Schein, Melat Trading/Bluetron Hager & Mesinger.

05-06 MAY 2017 | CONFERENCE
05-06 MAY 2017 | EXHIBITION
05 MAY 2017 | DENTAL TECHNICIAN INT’L MEETING
01-08 MAY 2017 | HANDS-ON COURSES

InterContinental Hotel
Festival City Dubai
Dubai, UAE

ACCRREDITATIONS: ADA | ADA CE Credits

Contact Us
Mobile: +971502939171
Telephone: +97143616174
FAX: +97143686685
Email: events@cppmea.com
www.cppmea.com/cdadcam

Dental Tribune International (DTI) family exhibiting at the cosy 100 square meter DTI Media Lounge (Hall 4, booth D60 F61)
GmbH, Al Thanyah Pharmaceuticals LLC, Willman & Pen GmbH, Green Dental Lab, Sintex Metal 3D Printing LLC, Med Door/ IVE GmbH and others.

At its 12th edition, the exhibition will provide an excellent platform for dental professionals and industry experts to network, exchange ideas and do business. During the two-day exhibition, range of latest dental products and services will be introduced for the first time in the Middle East after IDS, Cologne.

MEA Region amongst dentistry's top high potential markets

With its rapid and dynamic markets, continuously educated workforce and support from local governments, the Middle East region is amongst dentistry's top high potential markets in the world. Conducting business in the MEA region however, is far from easy unless dealing with the right partners. Meet CAPP at IDS Cologne to find out how you can expand your business in the region. Explore “Innovative Dental Solutions” the marketing concept developed by CAPP, feel welcome to visit us at the DTI Media Lounge (Hall 4.1, booth D66/G67) at the upcoming IDS Cologne (22-25 March 2017).

About CAPP

Centre for Advanced Professional Practices (CAPP) was founded in 2002 by Dr. Dobrina Mollova in Dubai, UAE with the sole purpose of delivering excellence in Dental Continuing Medical Education in the Middle East and beyond. CAPP is an American Dental Association (ADA) C.E.R.P Recognized Provider, specializing in Continuing Medical Education (CME) and Continuing Professional Development (CPD) education programmes – conferences, short and long term hands on courses, workshops and self-instruction programmes.

CAPP is the organiser of the two leading dental scientific conferences in the region: CAD/CAM & Digital Dentistry International Conference (1st edition in 2005) and Dental Facial Cosmetics International Conference (EFCC) (1st edition in 2009). Both these conferences are annual events.

Growth

For the past 12 years CAPP has facilitated over 410 CME programmes educating over 62,000 international participants. Ever since 2005, CAPP has experienced year-on-year growth and in 2016 alone CAPP educated 13,836 international dental professionals (lower versus 2015 due to Asia Pacific CAD/CAM & Digital Dentistry Singapore being held 90-annually). CAPP has become the leader in Continuing Dental Education programmes in the region.

Provider of professional diploma’s in dentistry

In 2016, CAPP-Tipton Dental Academy and the British Academy of Restorative Dentistry (BARD) has launched the Restorative & Aesthetic Dentistry Certificate and Diploma courses in Dubai, UAE. Group 1 & Group 2 started in September 2016. Group 1 Diploma course for Year 1 (2 Modules, 15 days in total) and it offers the participants a chance to obtain a Certificate in Restorative Dentistry (PG Cert Rest Dent) from the British Academy of Restorative Dentistry (BARD). After a successful completion of the Year 1 course, the participants will have the chance to sign up for Year 2 Diploma (4 Modules, 30 days in total) which will lead to Post-Graduate Diploma in Restorative & Aesthetic Dentistry from the British Academy of Restorative Dentistry (BARD). The courses will comprise of lectures, practicals, and seminars. After completion of the Diploma, there is an option for delegates to take the path-way to MSc (Masters of Science) in Restorative and Aesthetic Dentistry with the University of Manchester and Healthcare Learning or Masters in Clinical Dentistry (McInDent). Provided that the participants have the chance to sign up for Year 2 Diploma (4 Modules, 30 days in total) which will lead to Post-Graduate Diploma in Restorative & Aesthetic Dentistry from the British Academy of Restorative Dentistry (BARD). The courses will comprise of lectures, practicals, and seminars. After completion of the Diploma, there is an option for delegates to take the pathway to MSc (Masters of Science) in Restorative and Aesthetic Dentistry with the University of Manchester and Healthcare Learning or Masters in Clinical Dentistry (McInDent).

Asia Pacific Market Opportunities

With the opening of CAPP Asia in 2012, the company’s reach has expanded to the Asia-Pacific region and beyond. CAPP Asia main focus in the region is the Asia-Pacific Edition of the CAD/CAM & Digital Dentistry International Conference held in Singapore on a biannual basis. This year will see the 4th Asia Pacific and 15th Global Edition of the famous CAM/ CAM & Digital Dentistry INT’ Meeting – the world’s only completely devoted event on latest technology in dentistry.

Dental Tribune MEA

CAPP is the proud owner of the Dental Tribune Middle East & Africa print and digital publication. CAPP is delivering six print editions annually to over 32,000 dental professionals (120,000 copies annually) in the Middle East and Africa region and delivers newsletters to over 41,000 active subscribers every two weeks (approx. 94,000 e-mail annually).

Through its international website, the latest industry news reaches the largest dental community worldwide – an audience of over 1,000,000 dental professionals.
Dentsply and Sirona have joined forces to become the world’s largest provider of professional dental solutions. Our trusted brands have empowered dental professionals to provide better, safer and faster care in all fields of dentistry for over 100 years. However, as advanced as dentistry is today, together we are committed to making it even better. Everything we do is about helping you deliver the best possible dental care, for the benefit of your patients and practice.

Find out more on dentsplysirona.com
Balancing Efficiency and Esthetics – Maximizing Today’s Modern Materials

By Dr. Cory Glenn, DDS, USA

As many dentists in busy practices may know, being efficient during each procedure is a key to success on a day-to-day basis. I continually strive to hone my skills to make procedures faster and better, and a large part of my ability to do this is my product mix. And although efficiency is extremely important to me, I want to choose a set of products even if they offer great efficiency, if the end result becomes compromised. A large part of my practice is performing direct posterior restorations, which can often become time consuming, for me the need for multiple steps and multiple composite layers. Over the years I’ve been incrementally placing composites with great results, but I wanted something easier for my posterior restorations. To make restorations simpler, I began researching new products marketing themselves as efficient and esthetic. I’m not the type to simply switch everything over to one new product without ample research and science backing up the product, so I began testing a select group of products I thought would work well.

I began experimenting with a new adhesive, a new composite material, a new cutting light, and a new finishing and polishing system. After the first few restorations I began achieving great results quickly and easily.

Characteristics of Adhesive

Universal adhesives have been available for several years and their goal is to be exactly what they say: universal. In most cases, there’s no need for multiple bottles for different indications and most can be used in self-, selective-, and total-etch mode. After some initial research and talking with colleagues I began trying Single Bond Universal Adhesive. In order to lessen the risk of using a new product, I began using it for a few procedures at first to gauge its performance and kept my old adhesive on standby.

Finding the Right Bulk Fill

I’ve been intrigued with the advent of bulk fill composite in the last few years and their ability to be placed in the mouth as a one-bottle product provides me with experiences with these materials had been less than impressive in the past. Even though they were extremely efficient, I wasn’t comfortable using them.

When I tested Filtek™ Bulk Fill Posterior Restorative, I saw many characteristics and results that I liked. A large concern I had with these composites was the amount of polymerization stress that acts on the tooth, but research shows that Filtek Bulk Fill Posterior offers stress relief compared to many incremental fillings, which is great for my peace of mind. The esthetics of this material has also been pleasantly surprising to me. With Filtek Bulk Fill Posterior I can improve productivity and save valuable chair time. It has excellent handling like the traditional Filtek materials I use and is easy to shape. I now have several minutes left after a restoration where I can quickly look over case notes or take a short mental break before the next patient. It’s great not rushing from one restoration to another, and it really seems to create space in my day.

The Importance of Proper Curing

Not all curing lights are created equal. New LED models can produce higher light output and can cure materials more efficiently than previous types of lights while also making curing operation easier. I’ve been experimenting with the Elipar™ DeepCure-5 LED Curing Light and have found great success with it. It increases my confidence of a full cure at the bottom of the proximal box and has an ergonomic shape which makes operation easier by me or my assistants. With old and inefficient curing lights, I would sometimes worry about achieving a reliable result and that’s not the case with this new curing light.

Simple Finishing and Polishing

Finishing and polishing a restoration can mean the difference between a lifetime shine and a dull looking restoration. Switching between the traditional points, cups and discs polishing can be tedious and time consuming for me. I’ve been utilizing the Sof-Lex™ Spiral Finishing and Polishing Wheels and have seen great esthetic results. With this two wheel system, I simply run each wheel over the restoration to polish and finish the restorations quickly. I find it to be extremely quick, which in the end saves me time.

Case Study

The below case was completed with the products that I discussed above. When these products are used together, they can create a truly efficient procedure for posterior restorations.

The patient, a female in her mid-50s, presented with two leaking amalgam restorations on teeth #30 and #31. The patient desired a more esthetically pleasing composite restoration and after examination, a bulk fill composite technique was deemed an appropriate treatment option.

Step 1

The existing amalgam restorations (Fig. 1) are removed and caries dye is applied. When no additional caries are detected, the cavity preparation (Fig. 2) is sandblasted with aluminum oxide to ensure the preparation is free of all contaminants.

Step 2

The preparations are selectively etched (Figs. 3) with Scotchbond™ Universal Etchant Gel and Single Bond Universal Adhesive is rubbed into the surface for 20 seconds (Fig. 4). The adhesive is then gently air dried for 5 seconds (until the adhesive doesn’t move) to evaporate the solvents, and it’s light cured for 10 seconds (Fig. 5).

Step 3

After adjustment using a finishing bur, the final polishing is completed with the Sof-Lex Spiral Finishing and Polishing Wipes. The beige finishing wheel (Fig. 9) is used first to remove surface scratches and the white polishing wheel (Fig. 10) is used to create a high shine. The composite restorations are complete (Fig. 11).

3M Oral Care Solutions at AEEDC, 2017

By 3M

On 7-9 February 2017 3M Oral Care took part in one of the largest regional trade shows for oral care professionals in the MENA Region. During the 3M booth at AEEDC, 3M Booth was attended by visitors from various countries across the Region and the Middle East with vast procedure solutions for greater clinical, professional and personal success. In the Perfect Restorative area dentists could learn more about Esthetic Procedure Solution with Filtek™ Z500 Universal restorative, Single Bond Universal adhesive, new Elipal™ DeepCure cutting light and Sof-Lex™ Diamond Polishing system allowing to create beautiful, natural- looking restorations having diamond paste-like gloss. Or to try Efficient Procedure Solution with Filtek™ Bulk Fill Posterior restorative designed to improve productivity by enabling fast and easy posterior restorations.

The Indirect Procedure area was dedicated to the sub-procedure solutions, such as impressing with InTeque and Express™ Prepsta™ U2000 composite cement and temporization with Postemp™ 4 material which together all enable less complicated process, fewer misteps, and therefore more productive and proficient procedure. In the Orthodontic Procedure area doctors had an opportunity to learn more about the Ortho Procedure with Clarity™ Advanced ceramic brackets and Efficient Procedure with Filtek™ Universal Etchant Gel and Single Bond Universal Adhesive is rubbed into the surface for 20 seconds (Fig. 4). The adhesive is then gently air dried for 5 seconds (until the adhesive doesn’t move) to evaporate the solvents, and it’s light cured for 10 seconds (Fig. 5).

Final Thoughts

The newfound efficiency I’ve discovered for my posterior restorations has provided me several benefits. For instance, my restorations are quicker, they require fewer products, and there are fewer steps needed. This all adds up to less stress for me during each procedure and in my day-to- day practice.

For more information on the Efficient Restoration Procedure visit 3M.com/EfficientRestorations

By Dr. Cory Glenn

Dr. Glenn graduated from University of Tennessee Health Science Center College of Dentistry, finishing graduation, he went on to complete the Lutheran Medical Center’s advanced education in general dentistry residency at the UT Memphis branch. He is a graduate of the Georgia Maxi Course in implant Dentistry, and is an Associate Fellow in the American Academy of Implant Dentistry. Dr. Glenn operates a private practice in Winchester, TN where he performs all disciplines of dentistry with a particular focus on utilizing technology and innovative techniques.

To learn more about 3M Oral Care products please visit: www.3m.com/oral-care
3M Oral Care

Takes less time, so you have more time.

There are things in life you don’t want to miss. And the more complicated a procedure is, the greater chance there is for something to go wrong and disrupt your day. That’s why 3M Oral Care has simplified posterior restorations... the most frequently performed direct restoration. By using Filtek™ Bulk Fill Posterior Restorative with three other innovative products, you’ll move through posterior restorations with speed and simplicity. See how our Posterior Restorative Procedure can help keep you on schedule... because we know your time outside of work matters.

www.3MGulf.com/espe
mCME articles in Dental Tribune have been approved by: HAAD as having educational content for 1 CME Credit Hours  DHA awarded this program for 1 CPD Credit Points

By Marc Montana

**Introduction**

Historically, when a patient’s dental condition reached a state of total tooth loss, treatment was limited to a complete denture with no hope of improving that status. The greatest challenge, particularly when working with a lower jaw was providing a denture with reasonable stability and retention. Success was greatly dependent upon the skill of the practitioner but also on the neuromuscular ability of the patient, their supporting structures and a philosophical attitude toward their condition. Treatment for patients suffering complete edentulism has been revolutionized by the ongoing success of dental implants such that standard of care for the mandible is an implant overdenture.

The spectrum of prosthetic modali- ties developed since the acceptance of endosseous implants to the dental market ranges from the very simple to the astoundingly complex. As this field of study once directed by specialists, has evolved into a mastery of the general practice, favor of expeditious and reproducible methods has gained dominance over complex therapies. Implant overdentures and fixed hybrid prostheses are choices typically offered by the dentist based upon a patient’s financial ability. While both are generally successful, the overdenture and the hybrid prosthesis are not without pitfalls.

The implant-retained overdenture

The implant-retained overdenture is described as a prosthesis that covers, is supported by, and is supported by, the natural tissues retained by the dental implant; that is, it is retained by supports rather than assisted rather than supported. Placement of two to five implants is commonly found for the edentulous mandible with emphasis on creating a large antrostomizer spread between the endosseous pillars. If more than two implants are clustered in a small AP range, the prosthesis may not move freely about a single axis of rotation and the denture may dis- locate during function. By creating the fulcrum on the most posterior overdenture abutments, the denture will pivot in function resulting in disengagement from the attachment mechanism and cause premature wear of the retentive components. Therefore, an increase in the number of implants beyond two does not necessarily provide a linear increase in retention and sta- bility. In fact, the opposite may be true. Because support is provided by the mandible itself, resorption of the supporting structure will result in increased tipping of the denture during function, resulting in dislodg- ment. Therefore, the dentist and pa- tient must be cognizant of the need for relining of the prosthesis peri- odically to assure optimal performance.

Recommendation is, therefore, placement of two implants in the posterior mandible to allow one axis of rotation. These implants should also be positioned such that future implants may be considered should the patient wish for an implant-sup- ported alternative.

The hybrid prosthesis

The screw-retained hybrid prosthesis is a fully implant-supported structure and, therefore, is not affected by incremental resorption of the residual ridges. It has gained in popularity as the technically difficult and costly gold frameworks have been replaced by CAD/CAM titanium structures and by proven success of angled implant placement to increase the AP spread. Because the restoration has a metal substructure, it is possible to cantilever posterior to the terminal abutment, increasing the length of the functional arch. However, the esthetic component of the restoration, namely the denture teeth and acrylic resin matrix, are inherently weak materials originally intended for use in complete and partial dentures where functional load is comparatively low. If insufficient inter-arch space is available, the risk of fracture or displacement of denture teeth or resin base is high as the materials will be too thinned to withstand forces generated during function and especially parafunc- tion.

Unfortunately, this is an increasingly common occurrence, especially in restoration of the maxilla with a fixed hybrid prosthesis. Inconver- gent screw-access holes may further weaken the prosthetic teeth. Repair of a fractured or lost tooth requires removal of the hybrid prosthesis and correction in the dental labora- tory. The design of the implant must be prepared to remove the structure and later re- seat it once the repair is complete. The patient must accept the fact that there will be without “teeth” for the length of time required for the technician to fix the problem. Attempts to prevent frac- turing by increasing the thickness of the resin is limited by the space available to do so. If inadequate inter- arch space is encountered, correction cannot be achieved by adding more material. Rather a change in design to a different and possibly more ex- pensive restoration may be needed. When hybrids are used in the max- illa, careful may arise in attempting to improve the esthetic and phonetic result by use of ridge lapging and the limitations such shapes impose on proper oral hygiene.

The benefits of the fixed hybrid pros- thesis are clearly improved function and minimal post-treatment com- plications as long as the patient is able to properly clean it and break- age is avoided. Because it is fixed, the patient cannot remove it to clean away entrapped debris and properly remove plaque. Repair or replace- ment of the resin teeth requires re- moval and re-seating by a dentist. No special latches or plunger attach- ments are necessary to retain it. The patient merely slides the bridge in vertically onto the abutments and removes it in the opposite way. Be- cause the abutments are a part of the ATLANTIS (DENTSPLY Implants, Waltham, MA) portfolio, it is avail- able for all major systems. In addition, because each abutment is custom made, correction of angled implant placement is possible up to 30 degrees. Two major require- ments are necessary for the dentist must make an accurate, implant- level impression and a scan must be made of either an approved denture set-up or of a completed denture to be retro-fitted. The ATLANTIS Conus Abutments are then designed to be positioned optimally within the denture contours. The fixed yet re- movable prosthesis offers the advant- ages of excellent chewing function, improved esthetics and fracture re- sistance (as no screw access holes are present) and optimally facial sup- porting contours, without compro- miseing cleaning by the patient.

Case Report

A 73-year-old woman with a history of 11 years of complete edentulism of the maxilla and mandible, and five endosseous implants in the ante- nor mandible, presented with a chief complaint of a non-retentive and un- stable lower denture. The implants were standard diameter, externally hexed, Branemark fixtures. She had a moderate resorption of both the maxillary and mandibular residual ridges (Figure 1). The patient had bone loss involving the implant bodies but comparing the radiographic evidence available, documenting her condition through the years, it appears the bone loss oc- curred soon after implant placement and no appreciable change was seen thereafter. During these 11 years, her treatment history included initial retentation of the implants with a complete denture retained by the Locator at- tachment system (Zest Anchors), and the maxilla was restored with a complete denture. She advised that the result was unsatisfactory as the lower denture displaced during function. Her history further reveals that the Locators were replaced with Prex-Olix attachments (Icera At- tachments) with no demonstrable improvement. The patient was later retreated by the author, with new maxillary and mandibular complete dentures and new Locator attach-
ments used to retain the lower pros-
thesis. The attachment male compo-
nents were secured intra-orally using auto-polymerizing resins to minimize the possibility of laboratory error. The patient continued to experi-
ence problems with the lower den-
tooth coming loose during function and was referred frequent replacements of the nylon male inserts, replace-
ment with Extended Range Inserts due to functional performance. The mol-
ar abutments demonstrated consider-
able wear as well (Fig. 7). Relining the lower denture was indicated to anay-
lyze the performance of the anchor system.

At the subsequent appointment, the patient was presented with the final prototype, which was an ap-
potential solution to her ongoing dilemma. Treatment options were
presented as well including a fixed hybrid prosthesis and a 2-in-1 bar over-
toaner. These were injected as inter-
 consonant was less than opti-
mal, requiring compromise to the strength of the design. The patient
also expressed a desire for a remov-
able design as she was concerned with having adequate facial support and wished to be able to remove the prosthesis for proper hygiene and maintenance.

After approval and the case was
new maxillary and mandibular com-
plete denture would be fabricated and
ATLANTIS Conus abutments would be made to secure the lower restoration.

Clinical and laboratory procedures

Because the existing dentures were
made within the last five years and were acceptable with regard to tooth position and vertical dimension, it was decided that clear, acrylic resin duplicates of each denture would be made to serve as custom trays. Double-sided impressions of each denture were made and delivered to the dental laboratory for fabrication of the duplicates. Once processed, the copy denture borders were short-
ened by 2 mm to allow border mold-
ing. The duplicate of the mandibular duplicate denture was milled to a 5
mm margin for complete seating and the "copy" denture was trimmed to the correct vertical dimension and the tooth location on the patient's table was abbreviated at the first molar. The length of functional arch and the patient's arch form were documented.

First, impressions were obtained and the cast metal frame to reinforce the final restoration off the non-working cast; where they have remained unobstructed and complete seating. The abutments were custom designed to fit specifically to the denture pickup seat or duplicate denture provided, there are no sizes, heights, angles or collars to select from a catalog and, therefore, no risk of choosing incorrectly. When received, the ATLANTIS Conus abutments were secured to the work-
ing cast with attachment retaining each four pre-fabricated SynCone caps (Figs. 8, 9). The caps were seated onto the abutments and sent to the dental laboratory to be impressed. The impression was poured twice. The first impression used an acrylic analog. The remaining space was filled with flowable composite resin (Figs. 10, 11). The patient was scheduled for com-
pletion of treatment (Fig. 19).

Once, the excess pick-
up material was removed and the bridge was properly polished where needed. The abutments were placed with Teflon tape to within 3 mm of the surface, and the remaining space was filled with flowable composite resin (Fig. 17). The patient was in-
struicted on placement and removal and repeated the exercise until we were satisfied she would experience no difficulties performing this. The clear, duplicate copy of the bridge was seated onto the abutments us-
ing a chair-side soft lining material (Fig. 18).

This copy serves as a temporary de-
vice for the patient to wear when cleaning the finished bridge or when sleeping to protect the tongue from scraping against the abutments. A panoramic radiograph was taken at completion of treatment (Fig. 19).

The patient returned after one week and again after six weeks, and report-
ed at both visits that the lower bridge did not move at all during function and stayed until she removed it. She commented on the ease of cleaning the dental abutments, and she reported no discomfort and no food embrasure. Overall, the pa-
tient was very pleased with the result (Fig. 20).

Dental Tribune Middle East & Africa Edition | 2/2017

Page 6
Intraoral welding and lingualized (lingual contact) occlusion: a case report

By Dr. Luca Dal Carlo, Dr. Franco Rosi, Dr. Mano E. Pasculli, Dr. Mike Shulman, Dr. Michelle Nardone, MD, Tomasz Grotowski, Dr. and Sheldon Winkler

Intraoral welding was developed by Pierluigi Mondani of Genoa, Italy, in the 1970s to permanently connect submerged implants and abutments to a titanium wire or bar by means of an electric current (Fig. 1). The current is used to permanently fuse the titanium to the abutments in milliseconds, so the heat generated does not cause any pathology or patient discomfort.

If possible the implants are placed without flaps. The titanium wire or bar is bent and aligned passively to the contour of the labial and lingual surfaces of the implants before applying the electric current to permanently connect titanium implants.

The technique follows a strict surgical and prosthodontic protocol, which includes using a number of implants close as possible to the number of teeth to be replaced, achieving primary stability by engaging both cortical plates (bicorticalism), immediate splinting of the implants utilizing intraoral welding and immediate insertion of a fixed provisional prosthesis with satisfactory occlusion. The technique provides for immediate loading and does not jeopardize the integration process. Although intraoral welding has been used successfully in Europe, especially Italy, for many years, it has yet to achieve everyday use in the United States.

Members of the Italian affiliate of the American Academy of Implant Prosthodontics, NuovoGISI, have long and successful experiences with immediate loading of maxillary implants connected together by intraoral welding.2

By inserting the prosthesis with adequate retention and stability the same day as the surgery, patient complaints and discomfort can be avoided or substantially reduced. The instantaneous stability that results from the splinting can reduce the risk of failure during the healing period. Intraoral welding can also eliminate errors and distortions caused by unsatisfactory impression making, as the procedure is performed directly in the mouth.

Intraoral welding can fulfill a great need for business and socially active people. The instantaneous stability that results from the splinting can reduce the risk of failure during the healing period. Intraoral welding can also eliminate errors and distortions caused by unsatisfactory impression making, as the procedure is performed directly in the mouth.

Intraoral welding can fulfill a great need for business and socially active people. The instantaneous stability that results from the splinting can reduce the risk of failure during the healing period. Intraoral welding can also eliminate errors and distortions caused by unsatisfactory impression making, as the procedure is performed directly in the mouth.

Intraoral welding can fulfill a great need for business and socially active people. The instantaneous stability that results from the splinting can reduce the risk of failure during the healing period. Intraoral welding can also eliminate errors and distortions caused by unsatisfactory impression making, as the procedure is performed directly in the mouth.

Intraoral welding can fulfill a great need for business and socially active people. The instantaneous stability that results from the splinting can reduce the risk of failure during the healing period. Intraoral welding can also eliminate errors and distortions caused by unsatisfactory impression making, as the procedure is performed directly in the mouth.

Intraoral welding can fulfill a great need for business and socially active people. The instantaneous stability that results from the splinting can reduce the risk of failure during the healing period. Intraoral welding can also eliminate errors and distortions caused by unsatisfactory impression making, as the procedure is performed directly in the mouth.

Intraoral welding can fulfill a great need for business and socially active people. The instantaneous stability that results from the splinting can reduce the risk of failure during the healing period. Intraoral welding can also eliminate errors and distortions caused by unsatisfactory impression making, as the procedure is performed directly in the mouth.

Intraoral welding can fulfill a great need for business and socially active people. The instantaneous stability that results from the splinting can reduce the risk of failure during the healing period. Intraoral welding can also eliminate errors and distortions caused by unsatisfactory impression making, as the procedure is performed directly in the mouth.

Intraoral welding can fulfill a great need for business and socially active people. The instantaneous stability that results from the splinting can reduce the risk of failure during the healing period. Intraoral welding can also eliminate errors and distortions caused by unsatisfactory impression making, as the procedure is performed directly in the mouth.

Intraoral welding can fulfill a great need for business and socially active people. The instantaneous stability that results from the splinting can reduce the risk of failure during the healing period. Intraoral welding can also eliminate errors and distortions caused by unsatisfactory impression making, as the procedure is performed directly in the mouth.

Intraoral welding can fulfill a great need for business and socially active people. The instantaneous stability that results from the splinting can reduce the risk of failure during the healing period. Intraoral welding can also eliminate errors and distortions caused by unsatisfactory impression making, as the procedure is performed directly in the mouth.

Intraoral welding can fulfill a great need for business and socially active people. The instantaneous stability that results from the splinting can reduce the risk of failure during the healing period. Intraoral welding can also eliminate errors and distortions caused by unsatisfactory impression making, as the procedure is performed directly in the mouth.

Intraoral welding can fulfill a great need for business and socially active people. The instantaneous stability that results from the splinting can reduce the risk of failure during the healing period. Intraoral welding can also eliminate errors and distortions caused by unsatisfactory impression making, as the procedure is performed directly in the mouth.

Intraoral welding can fulfill a great need for business and socially active people. The instantaneous stability that results from the splinting can reduce the risk of failure during the healing period. Intraoral welding can also eliminate errors and distortions caused by unsatisfactory impression making, as the procedure is performed directly in the mouth.

Intraoral welding can fulfill a great need for business and socially active people. The instantaneous stability that results from the splinting can reduce the risk of failure during the healing period. Intraoral welding can also eliminate errors and distortions caused by unsatisfactory impression making, as the procedure is performed directly in the mouth.

Intraoral welding can fulfill a great need for business and socially active people. The instantaneous stability that results from the splinting can reduce the risk of failure during the healing period. Intraoral welding can also eliminate errors and distortions caused by unsatisfactory impression making, as the procedure is performed directly in the mouth.
personas, as the surgical and prosthodonic procedures are accomplished on the same day. Patients can leave the dental office with a stable, esthetic and restorative prosthesis.

The flapless technique, first proposed by Tramonti, can be performed when the bony crest is wide and an adequate amount of attached gingiva is present. The technique allows for significant healing and reduction of post-surgical inflammation and only moderate inconvenience for the patient, who can eat efficiently the same day.

Provisional prosthesis and tooth arrangement

During the surgical session a temporary provisional prosthesis is inserted. Occlusal plane height must be correct. A lingualized (lingual contact) scheme of occlusion is recommended. The upper anterior teeth are best arranged without any vertical overlap. The amount of horizontal overlap is determined by the jaw relationship. A vertical overlap for appearance can be used, provided that an adequate horizontal overlap is included to avoid interference within the functional range.

Lingualized (lingual contact) occlusion

Lingualized (lingual contact) occlusion maintains the esthetic and food penetration advantages of anatomic teeth while maintaining the mechanical freedom of nonanatomic teeth. Among the advantages of a lingualized occlusion are occlusal forces centered over the ridge crest in centric occlusion, masticatory force is effectively transferred more "lingual" to the ridges during working side excursions, the "molar and posterior" type of occlusion minimizes the occlusal contact area providing for more efficient food bobbing and elimination and the precise incisectomy that can complicate the arrangement of anatomic occlusion. Lingualized occlusion also prevents cheek biting by holding the buccal mucosa off the food table by eliminating occlusal contacts on the maxillary buccal cusps, transmits occlusal mismatch corrections defined by errors in jaw relationships, denture processing changes and settling of the denture base, and simplifies setting of denture teeth, balancing the occlusion and any subsequent occlusal adjustments.

Clinical report

A healthy 50-year-old caucasian woman presented for treatment at the office of co-authors (LDC) with a mobile, painful, 12-tooth semiprecious alloy-ceramic fixed prosthesis (Fig. 2). The prosthesis was removed and all of the remaining abutment teeth were found to be reversible with extraction indicated (Fig. 3). After removal of the retained teeth eight single-piece implants were inserted in one session (Fig. 4).

Immediate stabilization of the eight implants and 2 additional implants that were previously inserted in the posterior regions was achieved by welding (Jeneric P Amen Inc, Calabasas, CA) each implant to a 1.5 mm supporting titanium bar (Acron, Casago, Italy), which previously had been bent to fit passively on the palatal mucosa (Fig. 5). A provisional resin prosthesis was inserted, which provided an acceptable vertical dimension and lingual contact occlusion. Oral hygiene procedures were demonstrated to the patient and reviewed at all future appointments.

After 90 days, a panoramic radiograph (Fig. 6) shows satisfactory preservation of bone surrounding all of the implants. An introradicular radiograph of the definitive prosthesis shows healthy gingival tissue (Fig. 7).

A 7-year follow-up radiograph (Fig. 8) shows satisfactory preservation of bone surrounding all of the implants. An introradicular radiograph of the definitive prosthesis shows healthy gingival tissue (Fig. 7).

Discussion

The number of implants placed for an edentulous patient should be based upon whether the design is to support an implant-supported overdenture or fixed prosthesis. If the goal is a minimalistic design utilizing the soft tissue for support, two implants using locator attachments are appropriate to retain a mandibular denture and will provide a predictable outcome. However, when more than two implants are used resilient overdenture retainers are employed, they are not a corresponding linear increase in retention of the denture and the result may suffer. Therefore, when at least four implants are planned, the restoration should be designed as implant-supported to maximize the value of the patient’s greatest investment.

This article discusses just such a situation where a patient had experienced repeatedly low value from her dentures due to bone loss. The ATLANTIS Conus concept provides predictable outcome while providing lip and cheek appearance can be used, provided that an adequate horizontal overlap is included to avoid interference within the functional range.

Figure 15. Completed bridge with SynCone caps processed in position. Because they have been processed intra-orally, there is no error in fit; these caps are extremely retentive allowing only vertical displacement of the prosthesis.

Figure 16. Completed restoration. Note the absence of screw access holes for a prosthesis that looks like a denture yet fits like a bridge.

Figure 17. ATLANTIS Conus abutments torqued to specified level, obturated with Teflon tape and composite resin.

Figure 18. Laboratory processed, clear duplicate prosthesis with silicone reline material to improve retention; to be used as a trial and to protect the tongue from the sharp edges of the abutments.

Figure 20. Completed bridge in place showing flange length suitable to avoid food.

Figure 21. Panoramic radiograph of the abutments seated on the four selected implants. Because the restoration is supported, gradual diminution of the residual ridge will not cause any consequence to the patient.

Figure 22. Completed bridge in place showing flange length suitable to avoid food.

Clinical report

A healthy 50-year-old caucasian woman presented for treatment at the office of co-authors (LDC) with a mobile, painful, 12-tooth semiprecious alloy-ceramic fixed prosthesis (Fig. 2). The prosthesis was removed and all of the remaining abutment teeth were found to be unremovable with extraction indicated (Fig. 3). After removal of the retained teeth eight single-piece implants were inserted in one session (Fig. 4).

Immediate stabilization of the eight implants and two additional implants that were previously inserted in the posterior regions was achieved by welding (Jeneric P Amen Inc, Calabasas, CA) each implant to a 1.5 mm supporting titanium bar (Acron, Casago, Italy), which previously had been bent to fit passively on the palatal mucosa (Fig. 5). A provisional resin prosthesis was inserted, which provided an acceptable vertical dimension and lingual contact occlusion. Oral hygiene procedures were demonstrated to the patient and reviewed at all future appointments.

After 90 days, a panoramic radiograph (Fig. 6) shows satisfactory preservation of bone surrounding all of the implants. An introradicular radiograph of the definitive prosthesis shows healthy gingival tissue (Fig. 7).

A 7-year follow-up radiograph (Fig. 8) shows satisfactory preservation of bone surrounding all of the implants. An introradicular radiograph of the definitive prosthesis shows healthy gingival tissue (Fig. 7).

Acknowledgements

The author would like to thank Fred Scronce, Tom Bergstresser, and Dr. Sean Ferguson (DENTSPLY Implants) for their assistance and willingness to work with us. The author would also like to thank Tom Wundl and the talented team at Wundental for their contribution to the laboratory procedures and products described in this article.

References


2. Fish EW. Using the muscles to stabilize the lower denture (JADA, Dec 1933: 2163-69.


4. Editeal note: The full list of references is available from the publisher.
Precise readability of impression details and a highly aesthetic composite from COLTENE

Erythritol – the PLUS in prophylaxis

By E.M.S.

Air polishing powders based on erythritol are smoother, more comfortable and safer. Thanks to its antibacterial effects, erythritol is ideal for air polishing. In addition, it is biocompatible, safe and comfortable – and still highly efficient! Dental maintenance has to be complete, optimal and predictable – and still highly efficient! Current product tests also confirm the easy handling of BRILLIANT EverGlow. Owing to its sophisticated composition of special fillers, the pliable submicron universal composite can be applied easily into all classes of cavities. It is suitable for anterior and posterior tooth restorations and can be modelled without haste until polymerisation. Among other things, users praise the good wettablility and modelling properties: this allows the dimensionally stable material to adhere perfectly to_honed tooth surfaces without sticking to the modelling instrument. Over 90% of test participants were convinced by the shade integration of the placed fillings and the excellent polishing properties.

By COLTENE

A-Silicone line PRESIDENT
The Original with optimised consistencies and new colours
PRESIDENT The Original is an upgrade of the famous PRESIDENT A-silicone line. It offers further optimised consistencies as well as fresh, highly contrasting colours that give even greater contrast between the wash and tray materials what results in better readability of the details. In addition to the familiar heavy body, sputty and putty soft tray materials, the high precision A-silicone line offers two additional viscosities: putty super soft and MonoBody. The wash materials include light and regular body and are now supplemented by the new Xtra light body. The dentist has the option of choosing between different presentation forms, such as the patented 35ml microsystem, 50 and 70ml cartridges as well as System 360 for Sympress. Corresponding tube materials round off the portfolio.

Universal composite
BRILLIANT EverGlow offers a spectrum of colour shades for all cases and is now available as flowable. The submicron universal composite BRILLIANT EverGlow is distinguished by easy polishability, excellent gloss retention and exceptional blending properties. Highly aesthetic outcomes can be achieved instantly.

In addition to the seven universal composite shades in the “Duo Shade” system, there are also two enamel shades: Translucent and Bleach Translucent. Now the range has been extended with another three additional masking opaque shades. BRILLIANT EverGlow Flow is available in 8 colours within the same shade system.

IDS 2017
Booth: V15
Hall: 10.2

PROMEDICA
Highest quality made in Germany

Light-curing micro-hybrid composite
• applicable for various indications and all cavity classes
• high translucency and a perfect colour adaption
• Polishable to a high gloss
• excellent physical properties for durable fillings
• high filler content
• packable consistency
(also available as Composan LCM flow)

Light-curing nano-ceram composite
• nano-reinforced ceramic particles
• special resin matrix
• significantly less free monomers
• highly esthetic
• universal for all cavity classes
• comfortable handling, easy modelling
• also available as a flowable version

Visit www.promedica.de to see all our products

Dental Material GmbH
24537 Neumünster / Germany
Tel. +49 43 21 / 5 19 08
Fax +49 43 21 / 5 19 08
eMail info@promedica.de
Internet www.promedica.de

*Source: COLTENE internal data/DentalBarometer test phase December 2015.
Dubai Produces First 3D Printed Teeth

By Bernd Debusmann Jr.

DUBAI, UAE: Following the announcement that His Highness Sheikh Mohammed ben Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai, would like to transform Dubai into a 3D printing hubbed over the next two decades, we have seen many innovative developments in this exciting new market.

This week saw another first, as Sinterex and the Middle East Dental Laboratory collaborated together to produce the first dental implant bridge to be 3D printed in the UAE.

Sinterex, which is also the first company to be licensed for industrial 3D printing in Dubai, 3D printed a 14-unit framework in Cobalt Chrome alloy at their facility in Jebel Ali Industrial Zone. The framework was printed using a powder bed fusion process, where a fine layer of metal powder is distributed evenly across a platform before being selectively melted using a laser. Middle East Dental Laboratory then did the ceramic on the metal framework. Resulting in a natural look with a perfect fit.

Julian Callanan, Managing Director of Sinterex, explained that the new metal 3D printing approach has three primary advantages relative to traditional processes: “The first is speed; we can produce up to 70 units in under 4 hours, this could take up to 3 days using traditional casting processes. The second is accuracy; because we use an entirely digital process, we eliminate human manual error which can lead to rework. The third is cost; the printing process is very efficient and we recycle up to 75% of our raw materials. This efficiency saving is passed on to our customers.”

Thomas Cieszen, Managing Director of Middle East Dental Laboratory, added that 3D printing has been an important part of the dental business for some years now, and in the future, he anticipates further moves towards digital solutions. “By using 3D Printing we can provide a faster and more accurate solution for our Doctors.”

3D Printing technology is developing rapidly and Dubai is positioning itself at the epicentre of innovation. The Dubai Health Authority recently noted that they will soon be using 3D technology to print dental molds, meaning that dentists can print 38 molds in 6 hours, as opposed to an hour-and-a-half to make one case using currently available methods.

The article was originally published in Khaleej Times and was written by Bernd Debusmann Jr.

INDUSTRY

ZILMASTER

The Perfect Answer to Polishing All-Ceramics

By SHOFU

Frustrated while polishing Zirconia restorations? ZILMASTER, a unique colour co-ordinated, three-step diamond impregnated polishing system from Shofu, is the solution to the smoothest surface with a high gloss polish on all modern metal-free ceramics. Zirconia as well as Lithium Disilicate.

ZILMASTER is available in a variety of shapes and shanks for both extra (HF) and intra-oral (CA) application. Designed with an excellent balance of diamond particle size, distribution and a resilient silicone binder, ZILMASTER polishes even the finest scratches while smoothing hard Zirconia surfaces to obtain a lustrous polish that lasts.

ZILMASTER is a perfect fit.

Preserve and Protect Patients’ Gums and Teeth with GUM® Activital®

By Sunstar

GUM® ActiVital®, a new range of toothpaste care products, has released GUM® ActiVital® mouthrinse, providing long-lasting preventive-begins-in-the-mouth prevention of early signs of gingivitis. The GUM® ActiVital® mouthrinse, provides bacteria from attaching to the tooth surface and re-establishing a biofilm, thanks to the formation of a physical barrier on the teeth. The microbial burden is decreased allowing gums to maintain a healthy state.

A highly safe profile and gentle formula for oral long-term care products available on the market, which contains tricosan, cetylpyridinium chloride or chlorhexidine, the GUM® ActiVital® range presents an optimal tailored for people without any particular oral care problems. The product’s gentle formulas include natural ingredients, respect the oral flora balance, do not stain teeth and do not affect the taste. GUM® ActiVital® can be used in a prolonged manner and are free of sulfates (SLS), alcohol and parabens. The efficacy of the innovative technology behind the GUM® ActiVital® products is supported by scientific evidence.

References

page-01.
Beverly Hills Formula Increases Market Share In The Middle East

By Beverly Hills Formula

After successfully showcasing their new Professional White range at this year’s International Dental Conference and Arab Dental Exhibition (AEDC) in Dubai. The new range proved to be a success with distributors and clinics wanting to introduce the latest Beverly Hills products, which are due to hit shelves in May 2017.

Again, Beverly Hills Formula have proved that they are not only thriving, but driving a growing market in the Middle East with their Perfect White range of teeth whitening toothpastes and their award-winning Perfect White Black mouthwash. Indeed, the largest retail market of the Perfect White range is currently in Lebanon, which introduced the products in the past six months, also Iran, Kuwait, Qatar, Bahrain, Saudi and Jordan, which organised a special product launch on February 22.

The hugely popular Irish company was one of the main attractions in the oral hygiene hall at AEDC, not only because of their dramatically eye-catching stand with samples of gold, black and blue toothpastes on display. But largely due to the draw to their well-known hero product – Perfect White Black - a black whitening toothpaste formulated with activated charcoal.

Following the launch of Perfect White Black in 2013 the trend for black toothpastes has caught on and what started out as something perceived as some kind of market-gimmick, has in fact become the must-have whitening toothpaste because of its effectiveness to remove stains. Many dentists and professionals who visited the Beverly Hills stand admitted using Beverly Hills Formula’s toothpaste and also recommend it to their patients, but there were many other people who were intrigued and bewildered by the black toothpaste and were very curious as to how a black toothpaste could possibly work better to help whiten teeth than the traditional white one. But the proof is visible for users and also clearly demonstrated in the independent scientific studies conducted on BHF products comparing other leading brands.

Currently manufactured in Ireland, the Beverly Hills Formula ranges have a longstanding reputation for doing what it says on the tin, providing a product, which is a safe everyday whitening toothpaste, which gets results. For over two decades, the company has evolved and expanded its range, providing a safe and effective whitening toothpaste to suit all oral hygiene needs. With CEO Chris Dodd at the helm, who has over 20 years experience and a well-earned reputation as an expert in his field, the company owes much of its considerable rise, especially in the past few years to his innovative new product development.

Launched in 2012, the Perfect White Range has been viewed as a revolutionary way of allowing patients to whiten their teeth without opting for products containing a high percentage of peroxide: The company spends time and resources on new formulas in response to consumers need for high-quality and effective teeth whitening products. New product development has been vital, not only to stay in the market for so long, but to help lead it. Beverly Hills Formula owns much of its success to the fact that they have brought some of the most innovative and effective products to the market. Launching Perfect White Black containing activated charcoal, took the market by storm but charcoal is a centuries old method of cleaning teeth as red Indians used to use the ash from fires and rub it on their teeth, thus being the first ever charcoal toothpaste. The fact that other beauty products introduced charcoal into their products helped strengthen the belief in the historical and natural powers of charcoal. Although a number of copy-cat products have emerged on the market, none have seen the same success as Beverly Hills Formula’s very own Perfect White Black, with qualified dentist and cosmetic doc- tor Dr Martin Knella saying: “I’ve tried the Beverly Hills Perfect White Black toothpaste and found it to be effective in removing stains and helping to achieve a whiter, brighter smile” Following on from this, the company introduced Perfect White Gold toothpaste, containing real gold particles was launched late that same year. Both of these products have since seen considerable success in the market.

Beverly Hills Formula are widely recognised for their winning formulations and the Perfect White Black mouthwash won Best New Personal Care product at the prestigious Grocer Awards in 2016. This is a great achievement when one takes into consideration the vast number of oral hygiene products available on the market today.

The success and endurance of Beverly Hills Formula comes down to a number of factors, these being they are the front runners in terms of new product development after being the first UK company to introduce a black whitening toothpaste. BHF range of whitening products are safe to use at home with proven stain removal and low abrasivity levels. The brand has managed to maintain a market presence for over 20 years, despite the hugely competitive increase in new oral hygiene brands. The simple fact that Beverly Hills Formula has managed to remain leaders in the market for so long has earned the brand the respect and success they have today!
Global Survey:
Patients want to be treated in a single visit

By Dentsply Sirona

Everything from a single source for safer, better and faster dentistry – CEREC makes this possible. This method offers the possibility of treating patients in a single visit with a ceramic, or even full zirconia, restoration. There is no need for uncomfortable impression material thanks to a digital scan, only one anesthetic injection is necessary and there are also no bothersome temporary prostheses – this type of treatment is exactly what the majority of patients want, according to a survey of more than 3,700 patients from 6 countries.

A recent and massive international survey of patients conducted on behalf of Dentsply Sirona showed that a large majority would prefer to be treated in a single visit as far as restorations are concerned. The patients surveyed in Germany, Brazil, France, Italy, Japan and China were very unanimous in this respect. To receive this service, many are willing to travel further to the dentist. A majority would not rule out the possibility of even changing their dentist for this – on the contrary, about two-thirds said that they would actually be willing to do this to benefit from single-visit dentistry.

Global wish:
Single-visit dentistry

A closer look at the details reveals that treatment in one visit actually meets patients’ modern expectations. In Germany, this applied to 80 percent of patients, while in Italy, France and China, this figure was almost 90 percent. Having to travel further presented no obstacle: 63 percent in Germany would be willing to accept a longer journey, in Italy a staggering 91 percent would do this, and in France three out of four patients could imagine doing this. The importance that patients attach to single-visit dentistry is reflected in the fact that 83 percent of Italians would be willing to change their dentist for it, two in three patients in Germany would also be willing to do this. In terms of costs, too, patients are also essentially in agreement: those surveyed, particularly in Brazil (85%) and China (84%), are prepared to spend more money. Around 70 percent of those surveyed in France would do this, while this applied to 50 percent in Germany and Japan.

CEREC meets patients’ demands

The results of the survey show that CEREC offers a convenience that patients want. There are several reasons for this: One of the most important is that the patient only needs one injection of anesthetic. There are also the comfortable digital impressions instead of the conventional method with an impression tray and material, which means that patients are spared the common gag reflex. Placing the immediate final restoration in one appointment removes the need for a temporary prosthesis. Restorative treatment in a single visit fulfills patients’ needs, thus becoming an important element in patient satisfaction.

Innovative processing of high-performance ceramics

“The research shows single visit dentistry is an emerging expectation among patients today, says Roddy MacLeod, Group Vice President CAD/CAM at Dentsply Sirona. ‘Patients expect to be treated with the latest technology and CEREC is leading that trend. And, now that we can also produce full contour zirconia restorations in a single visit, we are giving our customers the maximum flexibility to address nearly every clinical situation.”

Dentsply Sirona at IDS 2017:
Hall 10.2 & 11.2

Polly Rutt
Regional Marketing Leader
Regional Commercial Organisation – EOC – MEA
Mobile: +971 5699 66052 (UAE)
polly.rutt@dentsplysirona.com
www.dentsplysirona.com

By Dietmar Goldmann@coltene.com | P +41 71 757 54 40 | www.coltene.com
Importance of Support and Mentorship for Reliable Results

Calum Imray from Stafford Street Dental Care in Edinburgh, Scotland, details his first anterior alignment case using the IAS Inman Aligner appliance

By Calum Imray, Scotland

I have always felt the most impressive restorative and aesthetic dental treatments are those, which lead to “invisible” results, providing the most natural appearance possible whilst preserving as much of the existing tooth structure as possible. As part of this philosophy, I was keen to be able to offer my patients a simple orthodontic system that required no extractions and minimal tooth preparation. After researching several systems, I was introduced to the IAS Inman Aligner by colleagues who were already certified users and I decided to take the hands-on certification course.

Patient history, examination and treatment planning

My first case involved a young female patient who wanted to correct a mild alignment issue before her wedding. She had no medical complications, a minimally restored dentition and good oral hygiene. Her main complaint was the slightly protruding upper left central incisor. The mild crowding of the lower anterior teeth did not concern her. The occlusion was stable with a Class 1 molar relationship and canine guidance and there was no history of parafunction or cusp fractures. Following a normal examination, we assessed the space which would be required to align the patient’s upper anterior teeth by taking clinical photographs and then measuring the mesio-distal widths of the teeth and drawing a trace of our desired arch curve using Spacewize+™ arch evaluation software (available free to all IAS practitioners). This estimated that around 1.6mm of space would need to be created by interproximal reduction (IPR) using diamond strips. Considering the beauty of the unrestored anterior teeth and the minimal amount of tooth preparation required in this case, the patient and I agreed that orthodontic alignment and some tooth whitening would be preferable to more extensive restorative approaches such as direct or indirect veneers.

After posting the initial photographs on the online forum and receiving advice from two IAS Academy mentors, PVS impressions were sent to the lab along with instructions for the desired movements. A full treatment plan, 3D printed models of the potential end result and the IAS Inman Aligner itself were returned ready to start the case. The 3D modeling determined that in total, 2.2mm of space creation would be needed.

Treatment

At the fit appointment, a small amount of IPR was performed and the patient was instructed to wear the aligner for around 20 hours per day, removing it to eat and brush her teeth. After just 11 days she returned with a noticeable improvement and a subsequent set of photographs and IPR were posted on the forum after each review until the case was...
COLGATE TOTAL® PROVIDES PROTECTION* TO 100% OF THE MOUTH’S SURFACES¹

- Regular toothpastes¹ only protect the hard tissue, which is 20% of the mouth²
- The remaining 80% of the mouth is the tongue, cheeks, and gums, which can provide a bacteria reservoir for plaque biofilm recolonization

WHY SETTLE FOR 20% WHEN YOU CAN OFFER PATIENTS PROTECTION TO 100% OF THE MOUTH’S SURFACES?

*In addition to fluoride for cavity protection, Colgate Total® provides 12-hour antibacterial protection for teeth, tongue, cheeks, and gums.
²Defined as non-antibacterial fluoride toothpaste.

complete. Importantly, performing IPR incrementally at each review appointment ensured that no unnecessary tooth preparation occurred. In total, the patient wore the aligner for 13 weeks before a fixed retention wire was placed and she was delighted with her results! In reality, had she been able to attend every two weeks, the case would have been completed even quicker.

Case summary and self-appraisal

Looking back at the case, I realise the importance of consistent positioning for clinical photographs, particularly the occlusal mirror shots. I could have displayed the final results more effectively and achieved a more accurate Spacewize+™ estimate with a little more care when positioning the mirror. In an ideal world we would have also aligned the patient’s very slightly crowded lower incisors before they move any further and require more extensive IPR, but this was not her primary concern and can be addressed at another time.

In this first case and ever since, my experiences with the IAS Academy and the IAS Inman Aligner have been nothing but positive. The appliance provides an ideal introduction to GDP orthodontics by focusing the user on simple anterior alignment cases and there is great online support from the same clinicians who lead the training courses. These are two aspects I feel are crucial for any young GDP moving into a new discipline within dentistry – simplicity and readily available mentoring.

I am now looking forward to training with another IAS orthodontic system, the IAS Clear Aligner, which will open up more options for my patients.

Celtra® Duo
Zirconia-Reinforced Lithium Silicate (ZLS) Block

Developed to make a difference

Celtra Duo (ZLS) is the one and only material block that provides you with an unsurpassed level of freedom, control, and workflow flexibility; resulting in a final restoration in which to have complete confidence with respect to the clinical, functional, and aesthetic outcomes. Restorations made with Celtra Duo (ZLS) possess a chameleon effect, enabling them to blend in with surrounding teeth for a natural vitality and lifelike appearance.

For more information, visit celtra-dentsplysirona.com
Developing healthcare professionals of tomorrow

HAMDAN BIN MOHAMMED COLLEGE OF DENTAL MEDICINE
DUBAI • UAE

APPLICATIONS NOW OPEN

MSc in ORTHODONTICS
MSc in PROSTHODONTICS
MSc in ORAL SURGERY

MSc in PEDIATRIC DENTISTRY
MSc in PERIODONTICS
MSc in ENDODONTICS

For more details, please visit: www.mbruniversity.ac.ae
Irrigation protocols comparison, an in vitro study

By Dr. Salmerón P, Dr. Camacho F, & Dr. Martínez-Beneyto Y

Introduction

The removal of remaining pulp tissue, microorganisms and bacterial toxins from the root canal system is essential to the success of endodontic therapy. It is generally accepted that the best way to carry out removal is by cleaning and shaping the root canal complex; microorganisms that remain in the root canal after treatment (or for some reason return to colonize the root canal after filling) are the main causes of endodontic failure. (Hauspau et al, 2005). But in spite of the use of these agents, intracanal bacteria may remain after biomechanical instrumentation (Nair et al, 2005). All these factors can impede the main endodontic treatment objectives: the elimination of these etiologic agents from root canals and the disinfection of root canals and its three-dimensional network of dentinal tubules (Cheng et al, 2012). Failure to do so effectively may provoke endodontic failure.

Enterococcus faecalis (E. faecalis) is a gram-positive facultative anaerobic bacteria and the cause of secondary apical periodontitis. The resistance to treatment of E. faecalis is explained by its potential penetration into dentinal tubules (Molander et al., 1998; Sunde et al., 2002), its prolonged survival capacity in root-filled teeth (Sedgley et al., 2005), its adhesion ability to the collagen matrix existing in dentin (Love, 2001; Kayaoglu et al., 2009) and its inadequate response to antimicrobial irrigation solutions (Estrela et al., 2007). In this context, the prevalence of E. faecalis is higher in persistent infections than in primary infections (Stuart et al., 2006).

Different irrigating solutions have been considered to decrease endodontic infection and contribute to canal sanitation, including: halogenated compounds (sodium hypochlorite - NaOCl), chelating agents (ethylenediaminetetraacetic acid [EDTA], citric acid), MTAD (mixture of tetracycline citric acid and detergent), triantibiotic mixture (TAM), apple vinegar (Estrela et al., 2012), propolis (Flaviana et al., 2007) and hydrogen peroxide (Kobayashi et al., 2014).

CHX digluconate, which has been proposed as root canal irrigant, is a cationic biguanide made up of two chlorophenoxy rings and two biguanide groups connected by a central hexamethylene bridge with positive charges at each end of the bridge (Iaia & Iaia, 2011). Among its main properties relevant to endodontic application is its broad spectrum of antimicrobial activity, its specific bactericidal and bacteriostatic effects, and the long-term nature of its antimicrobial activity. At low concentrations, it has a bacteriostatic effect. At higher concentrations, it has a bactericidal effect due to the precipitation and coagulation of intracellular constituents (Wang et al., 2007; Xu et al., 2009), exercising its optimal effect on gram-positive bacteria at a concentration of 2%, the concentration recommended in the literature for root canal irrigation (Spangberg et al., 1973).

In root canal therapy, antibiotics can be used as adjunctive medicine. Hoshino and Takushige (Hoshino & Takushige, 1998) introduced the concept of “Lesion Sterilization and Tissue Repair” or LSTR therapy based on the use of a mixture of antibiotics for disinfecting pulpar and periapical lesions. A combination of 3 MIX-MP in paste form, also known as triantibiotic mixture (TAM), is made by combining a powder composed of ciprofloxacin, metronidazole and minocycline and a liquid composed of polyethylene glycol and propylene glycol. It penetrates the dentinal tubules, and has a potent disinfectant effect through ciprofloxacin’s wide-spectrum bactericidal action against gram-positive and gram negative bacteria, metronidazole’s
action against anaerobic infections, and micryocline's action against aerobic and aerobic infections (Sato et al., 2011). Propolis is a natural resinous prod-

uct produced by bees from the passages of plant exudate and is secreted by bees to collect from the plants around the hive, which they mix with wax and salivary secretions. It is a compound that has been identified in propolis, 35% of them being phenolic compounds. This endocrinological pharmacological action has been at-
tested in rats (Saini, 2011). This product has at-
tracted much interest for endodon-
tic therapies due to its antimicrobial action against many pathogenic mi-
croorganisms (Saini, 2009). It is a natural antiseptic that is compatible with periapical tissues. Its antibacterial activity can be enhanced by the com-
position of polyphenols, bioflavo-

noids such as vitamin P, terpenes, acetic, and esters (Kayaga et al., 2010).

At present, NaOCL is the most widely used irrigant agent due to its wide antiseptic range and its capacity to dissolve organic remains and purulent material from the different concentrations that range from 0.5-5%. At low concentrations (0.5%), NaOCL is mainly necrotic to tissue, while at higher concentra-
tions its dissolving capacity and its rate of endodontic failures can persist at depths of up to 1.000 µm reaching the cervical area (Berutti et al., 1997; Peten et al., 2000).

In this context, the penetration ca-
pacity of laser therapies can reduce the rate of endodontic failure. For this reason, different strategies such as photodynamic therapy (PDT) are under investigation in endodontics because of their bacte-
ricidal action in both primary and permanent dentition (Pohorecki et al., 2009). PDT is a new antimicrobial strategy that involves the combina-
tion of light and oxygen. The main advantage of PDT (P) is a light source and a photodynamic sensitizer which reacts with molecular oxygen to pro-
duce highly reactive oxygen species, with a high toxicity to both endodontic and microorganisms (Wainwright, 1998).

It has been established that the P, which has a resonance range, can rap-
cidly bind to and penetrate the bacte-
rical and cells and so shows a high degree of bacteriostatic for killing microorgan-
isms rather than host cells (Maia et al., 2009).

In the same way, ozone (tritoxicoma or ozonized water) can also offer a high penetration capacity into the dentinal tubules and bacterial cell membranes by ozonolysis and ozonization, which leads to loss of cell structure (Sawadogo et al., 1975). This action is selective and does not affect human body cells as the latter have good antioxidant ability (A et al., 2009). Endodontic therapy, therefore, three main forms of applica-
tion are used: oxidized water, sou-

danized water, and ozone (Kasai, 2011). There are now clini-
cal and experimental studies supporting the use of ozone by corona discharge uses an energy source, anode, cathode and a suit-

able dielectric spacer. Oxygen-rich air passes between the metal electrodes and the dielectric spacer, which causes ozone formation.

The aim of this study was to evalu-
ate the antibacterial effect of 2.5% NaOCL, FDT, 2% CHX, TAMP propolis, and 2.5% NaOCL, TAMP propolis on the in-

perimentally infected root canals of extracted human teeth in vivo.

Materials And Methods

Preparation of the teeth

For each group, the preparation of the one previously described by Haapasalo and Oertlitz (Haapasalo et al., 2009). The teeth were extracted and sixty extracted, intact, adult, human, single-rooted, mature teeth with a single apex were rinsed and stored in sterile 0.5% NaOCL for 24 hours. Calculus and stains were then removed using an ultrasonic scaler (Cavitron, Dent-
sply Endodontics, Norwalk, CT, USA). Experiments (Estrela et al., 2009). The external surface of each tooth was cleaned with sodium hypochlorite-sodium per-

otitron (Saini, 2011), then the teeth were decorated with a rotary diamond tip at 300 mmp and then stored in normal saline solution at the appropriate dilution and the concentration for the treatment of endodontic infections (Estrela et al., 2012) using MIP-4® histomorpho-

tic analysis

In the present study, inoculation by E. faecalis was performed at a con-
centration of 3 x 108 cell/mL, the concentrations used vary from 0.5-5% (Buirgamarter et al., 1992), which is the most widely used con-
centration for the treatment of endodontic infections (Estrela et al., 2012) using MIP-4® histomorpho-

tic analysis

Statistical analysis

Data were analyzed using the SPSS version 20.0 statistical package (SPSS Inc., Chicago, IL, USA). A descriptive study was made of each variable: ANOVA and Tukey’s test were applied, accepting variables in each case, in order to determine which the variances were homo-
genous and a significant level accepted for p<0.05.

Results

The E. faecalis count in root canals, calculated as CFU/mL, was the same for all the groups, and the positive control group showed the highest number of colony-forming units per ml thanks to the positive control group. The positive control group showed the highest number of colony-forming units per ml thanks to the positive control group. Results showed that the E. faecalis count in root canals, calculated as CFU/mL, was the same for all the groups, and the positive control group showed the highest number of colony-forming units per ml thanks to the positive control group. Results showed that the E. faecalis count in root canals, calculated as CFU/mL, was the same for all the groups, and the positive control group showed the highest number of colony-forming units per ml thanks to the positive control group. Results showed that the E. faecalis count in root canals, calculated as CFU/mL, was the same for all the groups, and the positive control group showed the highest number of colony-forming units per ml thanks to the positive control group. Results showed that the E. faecalis count in root canals, calculated as CFU/mL, was the same for all the groups, and the positive control group showed the highest number of colony-forming units per ml thanks to the positive control group.
Researchers find new evidence of diet in ancient teeth

By DTI

LEIOA, Spain: Using dental samples, Spanish researchers have applied standard geological techniques and methods at an architectural site in the region of Saragossa to establish the diet of a medieval Muslim community that lived in the region between the eighth and tenth centuries. The study has provided new insights into their diet and found that a few of them may have been poisoned by lead.

For their research, Guide and her colleagues applied geological techniques to learn more about gaps in knowledge that have arisen in other disciplines, such as archaeology and anthropology, regarding the findings at Tauste. Excavations carried out in this municipality disintegrated the skeletons of 44 Muslim individuals who lived between the eighth and tenth centuries. On the basis of this discovery, a research group from the university’s Department of Mineralogy and Petrology undertook to analyze dental samples of these human remains to establish the diet of this medieval Muslim community.

Sampling teeth with a laser technique, Guide used laser ablation-inductively coupled plasma-mass spectrometry to carry out targeted analy- ses of the teeth. An advantage of laser ablation is that the sample does not need much preparation, thus it is possible to analyze samples on the fossil remain. This method therefore allows such remains, which in archaeology are limited, to be preserved for future studies.

The chemical results uncovered the existence of considerable differences in the diet of adult men compared with that of women and younger people. The research suggested that adult males ate more protein of animal origin than did women and younger people, whose diets were richer in pulses and vegetables.

The findings of the research must be interpreted in the context of work by historians, anthropologists and archaeologists. "Numerical data on their own indicate nothing, but they are essential for supporting the hypotheses and discoveries of ar- chaeologists and historians," explained Dr. María Cruz Zúñiga, one of Guide’s PhD supervisors. For example, even if the analyses do not reveal the origin of the animal protein, "we can assume that it came above all from sheep and goats on the basis of written texts and anthropological knowledge about medieval Muslim society," she explained.

In this respect, studies of this type provide proof that we are what we eat, according to Samuel Epstein (1953), a geologist famous for developing methods for analysing stable isotopes. "What we eat goes on to form part of our bodies and provides us with very valuable information that ends up recorded in us—in this case in our teeth," Guide said.

The study focused on dentine, as it is more suitable than enamel for exam- ining diet, according to the re- searcher. "The chemical composition of the dentine is gradually remodel- led throughout our lives and that is why the elements that form part of our diet are recorded during the final years of people’s lives," she stated.

High lead concentrations in dentine

In addition to the new findings on diet, the research discovered high lead concentrations in the dentine of four individuals. "The concentration of lead is so high that it suggests that they were poisoned by this element," Guide said. The origin of the lead in this case is anthropogenic and, ac- cording to various studies, could be due to the work these people did, which involved handling lead-bearing minerals, possibly in the produc- tion of glass for ceramics.

The study, titled “Analyses of human dentine and tooth enamel by laser ablation-inductively coupled plasma-mass spectrometry (LA–ICP- MS) to study the diet of medieval Muslim individuals from Tauste,” was published in the journal of the Microchemical Journal.

By Dr. Pablo Salmerón

Graduating from Murcia University’s Faculty of Dentistry, Dr. Pablo Salmerón has been working as an Endodontist, as well as spending time teaching his field to keep dentistry students at the University of Manchester.

"I am greatly pleased with the work I am able to perform at Dr. Rose & Associates Dental Clinic — whilst doing to justify other passions in this field, such as lectur- ing and public speaking. Dubai also gives me a chance to play golf, run and travel to exciting locations around the globe!"
Introducing Prime&Bond universal™ universal adhesive with patented Active-Guard™ Technology. Get a reliable, gap-free bond with virtually no post-operative sensitivity on over-wet and over-dried dentin.¹

- All etching methods, all indications
- Active moisture control
- Active cavity spreading
- Active tubule penetration
- HEMA-, TGDMA- and bisphenol-free

1 Data on file.
Increase Dental Happiness
More patients & improved aesthetics

By Mr. Vanik Kaufmann-Jinoian, Switzerland & Mr. Tom Huigen, The Netherlands

It might sound familiar. You write an aesthetic treatment plan, take X-rays and possibly construct a wax-up or mock-up, after which you take out plenty of time to explain the treatment plan to the patient – only to end up with their feedback: “Thank you, I will consider it”. Why is he or she not immediately agreeing to the treatment plan? Does he or she lack trust? Is something unclear? Various reasons might ultimately lead to case denial. Contrary to what you might think, these do not include education, intellect or the price tag. Rather, the choice of undergoing dental treatment is purely an emotional one. In fact, the majority or purchase decisions are rooted in emotion.

Just go back to the last time you bought a car. The one you are probably still driving. Did you buy it based on emotion, or purely based on a build-up of facts and details appealing to your intellect? Most of you will probably say yes, the purchase was an emotional one. When walking into the car dealership, we looked around and envisioned ourselves driving a particular car. We liked the thought of driving it to work, each and every day, and pictured the looks on our colleagues’ faces. The color was what we preferred, or the crisp smell of fresh, high-quality leather.

For the same reason, women spend $2,000 on a gorgeous pair of high heels. Or men opt for slick-looking $10,000 watches. Let’s not kid ourselves, these decisions are not made by our rational mind, but rather, by our need in education, intellect or an actual need for those items. We simply buy these things because of ‘want’. We want them, as they make us feel good.

Therefore, when you are spending time and effort on explaining the benefits of dentistry to your patients, it does not necessarily work when appealing to their rational minds. Instead, try to access and fuel their emotions, invoking that ‘want’ feeling.

Amongst dentists, a case acceptance rate of more than 30% is already considered to be quite high. Roughly translated, this means that if you pitch your treatment plan to 10 patients, only 3 of them actually go through with it. staggering, right? What is even more staggering, is what will happen if you present patients when discussing the emotional part of a patient’s mind instead.

Case acceptance numbers soar to over 90%, leading to a much higher number of patients that are willing to go through with your proposed treatment plan! Not only will this be more satisfactory to you, as you do not have to throw out nearly as many carefully composed plans, it will also be a major financial boost to your practice. After all, you will more than double your revenue – with the same number of patients.

Obviously, we could opt for designing a traditional mock-up or a digital visual mock-up. Yet it is not hard to see why sticky and often incorrectly colored mock-ups or cold and emotionless animation are not exactly healthy ingredients of the dental dream. Both techniques stimulate the rational, thinking part of the brain, therefore having an opposite effect. In short, until now, a well-thought-out emotional visual concept has been sorely lacking.

Twinsmile is a proven concept in which several unique presentation tools are used. It starts off by carrying out a qualitative, yet simple digital Smile-analysis. Then, the CAD/CAM produced Tenneers® are created and fixed to the patient’s teeth, and finally, the patient will experience his or her most attractive smile during the before and after video presentation.

In order to give you a head start, you will be introduced to the newest generation of hybrid ceramics, such as Lithium ceramics and full contour Zirconia ceramics. These might be just what you need in order to increase your security in performing cosmetic and/or aesthetic treatment.

The possibilities and drawbacks of these materials are discussed from the dentist chair’s point of view. Finally, you will learn how to feel more secure in the use of internal and external staining methods, allowing for even better aesthetics. By increasing your own aesthetic skills, you will not only cut costs – you will make your patients happier!

So, let’s dive into this.

How do we get past our instincts to play to the ‘logical’ mind and access the ‘emotional’ mind instead? How can we deeply engage the feelings of our patients when presenting a treatment plan?

What we must do is, to take the patient on a dental journey. A dental dream – shared between your patient, your team and yourself, which you are about to turn into a reality. A first requisite for this is a well-thought-out emotional visual concept. Most of us will be familiar with the DIS (Decisional Information System), which is a really good concept.

However, it is mostly a treatment plan talking to us, the dental professionals. It is too much complicated to implement in a general practice, let alone that it will mean anything at all to the patient.

What we must do, is to take the patient on a dental journey. A dental dream – shared between your patient, your team and yourself, which you are about to turn into a reality. A first requisite for this is a well-thought-out emotional visual concept. Most of us will be familiar with the DIS (Decisional Information System), which is a really good concept.

However, it is mostly a treatment plan talking to us, the dental professionals. It is too much complicated to implement in a general practice, let alone that it will mean anything at all to the patient.

What we must do, is to take the patient on a dental journey. A dental dream – shared between your patient, your team and yourself, which you are about to turn into a reality. A first requisite for this is a well-thought-out emotional visual concept. Most of us will be familiar with the DIS (Decisional Information System), which is a really good concept.

However, it is mostly a treatment plan talking to us, the dental professionals. It is too much complicated to implement in a general practice, let alone that it will mean anything at all to the patient.

What we must do, is to take the patient on a dental journey. A dental dream – shared between your patient, your team and yourself, which you are about to turn into a reality. A first requisite for this is a well-thought-out emotional visual concept. Most of us will be familiar with the DIS (Decisional Information System), which is a really good concept.

However, it is mostly a treatment plan talking to us, the dental professionals. It is too much complicated to implement in a general practice, let alone that it will mean anything at all to the patient.

What we must do, is to take the patient on a dental journey. A dental dream – shared between your patient, your team and yourself, which you are about to turn into a reality. A first requisite for this is a well-thought-out emotional visual concept. Most of us will be familiar with the DIS (Decisional Information System), which is a really good concept.

However, it is mostly a treatment plan talking to us, the dental professionals. It is too much complicated to implement in a general practice, let alone that it will mean anything at all to the patient.

What we must do, is to take the patient on a dental journey. A dental dream – shared between your patient, your team and yourself, which you are about to turn into a reality. A first requisite for this is a well-thought-out emotional visual concept. Most of us will be familiar with the DIS (Decisional Information System), which is a really good concept.

However, it is mostly a treatment plan talking to us, the dental professionals. It is too much complicated to implement in a general practice, let alone that it will mean anything at all to the patient.

What we must do, is to take the patient on a dental journey. A dental dream – shared between your patient, your team and yourself, which you are about to turn into a reality. A first requisite for this is a well-thought-out emotional visual concept. Most of us will be familiar with the DIS (Decisional Information System), which is a really good concept.

However, it is mostly a treatment plan talking to us, the dental professionals. It is too much complicated to implement in a general practice, let alone that it will mean anything at all to the patient.

What we must do, is to take the patient on a dental journey. A dental dream – shared between your patient, your team and yourself, which you are about to turn into a reality. A first requisite for this is a well-thought-out emotional visual concept. Most of us will be familiar with the DIS (Decisional Information System), which is a really good concept.

However, it is mostly a treatment plan talking to us, the dental professionals. It is too much complicated to implement in a general practice, let alone that it will mean anything at all to the patient.

What we must do, is to take the patient on a dental journey. A dental dream – shared between your patient, your team and yourself, which you are about to turn into a reality. A first requisite for this is a well-thought-out emotional visual concept. Most of us will be familiar with the DIS (Decisional Information System), which is a really good concept.

However, it is mostly a treatment plan talking to us, the dental professionals. It is too much complicated to implement in a general practice, let alone that it will mean anything at all to the patient.

What we must do, is to take the patient on a dental journey. A dental dream – shared between your patient, your team and yourself, which you are about to turn into a reality. A first requisite for this is a well-thought-out emotional visual concept. Most of us will be familiar with the DIS (Decisional Information System), which is a really good concept.

However, it is mostly a treatment plan talking to us, the dental professionals. It is too much complicated to implement in a general practice, let alone that it will mean anything at all to the patient.
Preserve and protect gums and teeth for the long-term without compromising your patients’ oral health

Based on silica (and) propyl stearidimonium chloride (toothpaste) and Ethyl Lauroyl Arginate (mouthrinse).

Free of sulfate, alcohol, parabens, chlorhexidine, cetypyridinium chloride and triclosan, limiting the risk of uncomfortable sensations. Does not stain teeth. Preserves the oral flora for the long-term.

With fluoride (toothpaste: 1450ppm, mouthrinse 248ppm).

Coenzyme Q10 and pomegranate contribute to the long-term protection of the gingival and dental tissues.

INNOVATIVE ANTIPLAQUE SYSTEM
DISRUPTS THE BACTERIAL BIOFILM AND PREVENTS THE MICROORGANISMS TO READHERE TO ENAMEL

Advanced Restorative Techniques
And The Full Mouth Reconstruction
- The Periodontal Prosthesis. Part 8

By Prof. Paul Tipton, UK

**Introduction**
The periodontal prosthesis or as it is also commonly known the Lindhe / Nyman bridge is a technique developed by the two leading periodontists of the 1970’s, Jan Lindhe and Stu Nyman in Gothenburg. Their technique allows multiple pontic replacement in fixed bridgework often on severely mobile, compromised and reduced number of abutment teeth. The science is overwhelmingly in favour of this type of bridge in certain situations where conventional dentures and implants are not possible for whatever reasons.

The technique relies on good oral hygiene, a reduced but healthy periodontal condition, multiple cantilevers often with three pontics cantilevered off the last remaining abutment, supra gingival margins, acrylic or composite veneering material on a metal framework and with a balanced form of occlusion (with non-working side interferences deliberately placed).

In effect the bridgework acts as a “living denture” and the balanced occlusion stabilizes the mobile bridgework. This type of bridge has increased but not increasing mobility and excellent long term success rates. Bridge design can vary from end abutment bridges to cantilevered bridges and often with a 12 unit bridge supported only by two mobile canine abutments.

**Clinical Studies**
The clinical studies date back to articles published in the Journal of Periodontology in April 1979. The material consisted of 299 individuals (aged 23-72 years, mean age 48.7 years) who during the period 1969 to 1973 were referred to the Department of Periodontology, University of Gothenburg, for periodontal treatment. The limiting criterion for acceptance of patients for this study was that their dentition had lost 50% or more of the periodontal tissue support. In addition, they had to be (i) willing to accept periodontal treatment including tooth extractions, periodontal surgery and, if indicated, prosthetic treatment, (ii) capable of maintaining optimal plaque control and, (iii) willing to appear for regular appointments for additional maintenance care. Forty-eight of these patients (22 males and 26 females), namely those who still 8 years following initial treatment participated in the controlled oral hygiene program and appeared at the 8-year follow-up reexamination constituted the “non-bridge treatment group” (Group I).

The remaining 251 patients displayed at the initial examination a similar degree of periodontal disease as the patients of Group I but, in addition, the breakdown of the periodontal tissues around certain teeth had reached a level where tooth extractions and subsequent prosthetic replacement were required. Out of these 251 individuals, every fifth (in consecutive order according to date of commencement of treatment), i.e. in all 50 patients, were selected to form the “bridge treatment group” (Group II). In these 50 patients, 74 fixed bridges were placed. According to the design of the bridgework “the
Another CAD / CAM Restorative Option

SHOFU BLOCK
SHOFU DISK

AESTHETIC • RESILIENT • FLEXIBLE • SHOCK RESISTANT
PRECISE MILLING • EASY INTRA-ORAL ADJUSTMENT & POLISH

Life-like Hybrid Ceramic
Ideal for Crowns, Inlays, Onlays, Veneers and especially Implant superstructures

For more information, simply contact your nearest Shofu Dealer Today!
Group Ia: 21 bridges of cross-arch extension with abutment teeth present at the distal termination of the bridges. In this bridgework, the number of pontics between two neighboring abutments ranged from one to eight.

Group Ib: 39 bridges of cross-arch extension with distal cantilever segments in one or both sides of the jaw. In this bridgework, the mean number of free-end pontics per cantilever segment was 2.3 (range 1-7).

Group Ic: 14 bridges of unilateral extension.

Success Rates
The overall success rates for this very extreme style of bridgework was over 92% success after the eight years of the study.

The analysis of the total material (332 bridges in 251 patients) regarding frequency of and reasons for technical failures which were encountered in the various bridgework after placement, gave the following result:

1. Loss of retention of retainer crowns from abutment teeth (11 bridges, 3.3%). This failure occurred in six bridges of cross-arch extension with distal abutment teeth present, and in five bridges of cross-arch extension with distal cantilever segments.

2. Fracture of bridgework (seven bridges, 2.1%). Such fractures were noted in one bridge of unilateral extension, in three bridges of cross-arch extension with distal abutment teeth, and in three bridges of cross-arch extension involving cantilever units.

3. Fracture of abutment teeth (one tooth in each of eight bridges, 2.4%) occurred in three bridges of cross-arch extension with distal abutment teeth present, and in five bridges of cross-arch extension with cantilever segments. Four of these fractures occurred in the abutment tooth adjoining free-end units. Of a total of eight fractured teeth, six were nonvital but root-filled, and two were vital.

Conclusions
The results showed that following a combined prosthetic/periodontal treatment, periodontal health can be maintained in patients enrolled in a controlled oral hygiene program. The type of maintenance care exercised in the present study was equally effective in patients for whom fixed bridgework was part of the initial treatment. Severe reduction of periodontal support around the abutment teeth and differences in design of the bridgework did not influence the periodontal status or longevity of the bridgework during the observation period. However, failures of technical nature occurred.
in 26 out of the 325 bridges. These failures appeared as (i) loss of retention of retainer crowns from abutment teeth in 11 bridges, (ii) fracture of bridgework in seven bridges, and (iii) fracture of abutment teeth in 8 bridges. All of these potential failures could be reduced by further adaptation of the bridge design and construction techniques.

Case Study
This lady was referred to me by her GDP from Birmingham with severe mobility of her remaining teeth, an inability to wear a partial denture, aversion to dental implants and a request to fix her teeth (Figs. 1-4). On examination it was noted that there was grade 1-2+ on all of the teeth with a reduced periodontal support. After an initial phase of periodontal treatment including visits with both hygienist and periodontist she was declared sound and healthy but with increased mobility of her teeth. Her response to periodontal therapy indicated a likely success for a periodontal prosthesis type of bridge-work. Initial diagnostic work included full mouth diagnostic waxing and prototypes (Figs. 5-8). This was followed by initial tooth preparations and fitting of the prototypes to try out the new aesthetics and function. At a second stage further tooth preparations were completed and impressions taken using a polyvinyl siloxane material in a stock plastic tray (Figs. 9,10).

As was indicated in the last article it is exceedingly difficult to take accurate impressions of mobile teeth. Hence the impressions were silver plated and silver dies prepared of the preparations in both the upper and lower jaws, and duralay bonnets fabricated (Figs. 11-14). At a second visit further impressions were completed by first placing the duralay bonnets on the teeth and then splinting them together with further duralay and coat-hanger wire using the “bead on technique” and then taking an overall impregum location impression in a custom made tray (Figs. 15-18). Following this the silver dies were placed back into the impressions and further stone models poured to produce the highly accurate master models (Figs. 19,20).

Occlusal records were taken by using a facebow, measuring the inter-condylar distance and a cadiax record (Figs. 21-23) so as to programme the fully adjustable articulator (Figs. 24, 25). Metal substrictures were then cast and tried in the mouth and the fit and accuracy verified (Fig. 26). Composite restoration material was veneered onto the metal subframes to produce the final definitive restorations (Figs. 27, 28). Using the fully adjustable articulator a balanced form of occlusion was achieved by placing non working side interferences. In Right Lateral excusion this was achieved by guiding contacts on UL4, LL4 on the balancing side (Fig. 29), and with contacts on UL543 and LL543 on the working side (Fig. 30). Whilst moving into a left lateral excusion the balancing side guiding contacts were achieved on UL4 and LR4 (Fig. 31) and on the working side between UL23 and LL23 (Fig. 32). The restoration in the upper jaw was a 12 unit bridge on 6 mobile abutments with the three cantilever units on the upper left hand side, and one cantilever on the upper right hand side (Fig. 33). In the lower jaw the bridge consisted of a 12 unit bridge on 7 mobile lower teeth with one cantilever each side (Fig. 34). The final result can be seen in Figs. 35 and 36.

Acknowledgements
I would like to thank the following for help with this series of articles:
• Dr Ibrahim Hussain, BDS, M.Med. ScImplantology - Implant Surgeon
• Dr Andrew Watson, BDS, MSc, Specialist in Endodontics
• Dr Amit Patel, BDS, MSc, MClin Dent, MFDS, RCSEd, MRD, RCSIng Specialist in Periodontics
• Mr John Wilbberley: Dental Technician: Waterside Dental Laboratory: Lancaster

Certificate & Diploma in Clinical Endodontics
From British Academy of Restorative Dentistry

Certificate | 3 Modules | 12 Days
Module 1 | 20-23 April 2017 (7 days) | Fundamental of Endodontics Programme outline: Introduction to contemporary endodontics. Understanding of instrument design and its effect on prevention of iatrogenic errors.
Hands-on: Hand filing and lingual compaction techniques.
Module 2 | 27-30 July 2017 (4 days) | Anatomy and Diagnosis of Endodontic Disease Programme outline: Microbiology of endodontic disease and its relationship with the host immune response.
Hands-on: Rotary NiTi and thermoplastic obturation techniques.
Hands-on: Rotary NiTi and advanced thermoplastic obturation techniques.

Diploma | 3 Modules | 12 Days
Module 4 | January 2018 (4 days) | Dental Resorption and Pattern of Tooth Fracture Programme outline: Understanding advanced endodontic problems.
Hands-on: Reciprocating NiTi and Carrier based thermoplastic obturation techniques.
Module 5 | April 2018 (4 days) | Restoration of Endodontically Treated Teeth Programme outline: Occlusion and whole patient care. The restorative endodontic interface. Plastic restoration, posts, intra and extra-coronal restorations, cuspal coverage amalgam vs composite.
Hands-on: Placement of core restorations and post retained restorations.
Module 6 | July 2018 (4 days) | Management of Endodontic Failure Programme outline: Endodontic retreatment, surgical endodontics.

Professor Paul Tipton BDS, MSc, DCDS RCS (UK)
DENTAL SURGEON
Visiting Professor of Restorative and Cosmetic Dentistry, City of London Dental School | www.coldk.co.uk
SPECIALIST IN PROSTHODONTICS | www保罗蒂普顿.co.uk
T Clinic @ Manchester, London | www.coldk.co.uk
TIPTON TRAINING LTD | www.tiptontraining.co.uk
www.bard.uk.com
President of the British Academy of Restorative Dentistry (BARD)

Professor Paul Tipton BDS, MSc, DCDS RCS (UK)
DENTAL SURGEON
Visiting Professor of Restorative and Cosmetic Dentistry, City of London Dental School | www.coldk.co.uk
SPECIALIST IN PROSTHODONTICS | www保罗蒂普顿.co.uk
T Clinic @ Manchester, London | www.coldk.co.uk
TIPTON TRAINING LTD | www.tiptontraining.co.uk
www.bard.uk.com
President of the British Academy of Restorative Dentistry (BARD)
Customized Lithium Disilicate Abutments for Implants in the Esthetic Zone

By Dr. Ali Tunkiwala, India & Danesh Vazifder, India

Technological advances in recent past have provided the much needed impetus to the clinicians to provide an immediate implant solution to the patients immediately after extractions, thereby truncating the overall treatment time while providing a biologically safe and esthetically impeccable result.

Based on the time at which the implant is placed after extraction of the offending tooth, implant placement protocols are classified as Immediate placement (T1), Early placement (T2-6 weeks), Late placement (T4-12 weeks) and Partial bone healing (T7-8 weeks).

T1 protocol involves immediate placement of implant in extraction socket and has been a matter of discussion in literature for several years. The shortened treatment time and the immediate gratification that this protocol can offer to the patients is its greatest advantage. Although literature has shown, beyond doubt that the bundle bone is lost on average by 1mm irrespective of whether implant is placed in extraction socket or extraction socket is left as it is, there are several other advantages of immediate placement; this greatest being, the ability to support the soft tissues with an immediate provisional abutment in the final result. Additionally, it is more predictable, it is mandatory for the soft tissues with an immediate provisional abutment to provide a road map to the final abutment in the final result. Also, there are several other advantages such as it is long the chances of success with immediate implant placement after extraction in this region should be chosen such that at least 2mm bone is left on both sides between implant and the adjacent tooth. Apically, the implant platform must be 2mm deeper than the CEJ of the adjacent tooth. When done with the implant placement, the screw access hole should be ideally accessible from the lingual of the gingival margin.

Immediate placement may be considered, else it’s better to defer it by 6-8 weeks. The flap and the periosteum is strictly avoided to prevent mucosal recession from surgical trauma.

The implant site preparation is begun on the palatal wall with the pilot drill, such that at the end of drilling protocol we do not touch the bucal wall with any drills. The diameter and mesiodistal position of the implant in this region should be chosen such that at least 2mm bone is left on both sides between implant and the adjacent tooth. Apically, the implant platform must be 2mm deeper than the CEJ of the adjacent tooth. When done with the implant placement, the screw access hole should be ideally accessible from the lingual of the gingival margin.

The Case Profile

The patient (Fig.1) reported with discolouration of gingival aspect of #12 region. The existing coronal restoration on #12 had a leaky margin and was not in sync with the overall esthetic appearance of the adjacent tooth. Radiographic examination revealed that the failing tooth was endodontically treated with a metallic post (Fig.2). On removal of faulty crown on #12, it was found that the coronal structure of tooth was totally destroyed and saving the tooth was not possible (Fig.3). After the preparatory analysis we finalised the use of immediate extraction and implant placement protocol as the patient presented with clinical factors in this favour, especially, the interproximal height of bone, that was within normal limits. In cases of immediate implant placement after extraction in this region we need to have a plan for immediate provisionalisation. A provisional abutment on the implant was planned that would be used in fabrication of a putty retained provisional using a putty matrix generated from the preoperative casts. This can be done only when implant is placed with good primary stability.

The Provisional

Our choice of provisionalisation in this case was to use a permanent metallic abutment to fabricate the immediate provisional crown. A putty matrix of the provisional cast will aid in making the provisional with Syton cib II, which is then finished extraorally to give perfect contours (Fig.4). The screw retained provisional is kept out of centric as well as eccentric contacts to prevent any loading and micro motion of the implant in its healing period (Fig.6).

The Surgical Technique

The extraction is carried out without undue damage to the adjacent tissues. The socket is cleaned well and the integrity of the buccal cortex is assessed. Only if its intact, immediate placement may be considered, else it’s better to defer it by 6-8 weeks. Raising the flap and the periosteum is strictly avoided to prevent mucosal recession from surgical trauma.

Fig 1: Pre-Operative View of offending tooth #12
Fig 2: Pre-Operative X-ray tooth #12
Fig 3: Pre-Operative View of #12 after removal of faulty restoration
Fig 4: Implant placed in correct 3 dimensional position
Fig 5: Provisional Restoration contoured to mimic natural tooth form
Fig 6: Provisional Restoration delivered on the stable implant
Fig 7: Gingival architecture formed by provisional at 4 months
Fig 8: Customised impression coping for implant insert impression
Fig 9: Soft tissue mask to reproduce gingival contour on stone model
Fig 10: Full contour wax-up for customized E-max abutment
Fig 11: Cut-back of full contour abutment for receiving E-max veneer
Fig 12: Finalised E-max abutment wax-up on stone model
Tetric® N-Ceram Bulk Fill
The nano-optimized 4-mm composite

Discover the new time-saving composite

4 mm to success

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

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

At the prosthetic stage after 16 weeks, the provisional crown was removed to find the gingival architechture sculpted by its shape (Fig 7). During this impressions a customised impression coping (Fig 8) is used to capture the already perfected soft tissue emergence profile and a stone cast is fabricated with ideal soft tissue contours (Fig 9).

A Ti-base abutment is used from the implant manufacturer on which a customized IPS e.max framework is fabricated. This IPS e.max framework is designed to receive an IPS e.max veneer on the labial aspect. In this case the screw access hole of the implant emerged favourably from the gingival margin of 12. Although it was possible to fire veneering ceramics directly to the core abutment, we prefered to make multiple thin veneers of differing values on the underlying core and hence chose this method of fabrication where the veneer of IPS e.max is bonded to the underlining customized IPS e.max core extra orally before delivering the restoration. After trial the veneer was bonded on etched IPS e.max framework and then the restoration was delivered with a final torque of 30 Ncm.

The Technical Protocol for Customized IPS e.max Abutment: Pressed ceramics (IPS e.max, Lithium Disilicate) have proved to be an extremely successful and reliable mode of fabricating esthetic and accurate restorations for implants. Creating a durable bond with Titanium base abutments using luting composites opens new opportunities such as customized IPS e.max abutment concept, whereas the ability to lute extraorally and deliver a screw retained restoration introrally proves to be a distinct advantage.

Once the customized coping impression is processed with a soft tissue cast fabrication, a Ti base abutment is selected and a wax up to final contour is done based on the gingival architecture created by the provisional cast (Fig 10). A putty index of this situation is made.

The wax up is then cut back from the facial surface using the putty index as a guide for reduction (Fig 11). The cutback is made in a manner to mimic a veneer preparation as the final design for the IPS e.max abutment, with the implant access hole favourably placed on the palatal side (Fig 12, 13). This way we have maximum strength for the abutment design as well as a good stump shape which can be customized with IPS e.max stains and sufficient space for an IPS e.max veneer. Two veneers of slightly differing value are fabricated for the two veneers, one veneer to identify the value that matches best introrally.

The abutment is then invested and pressed using a MOINT (Fig 14). After carefully investing, the abutment is then checked for fit to the Ti base. The abutment is checked for sufficient space for IPS e.max veneer. Palatal contacts are fine tuned to provide a good occlusal contact with the lowers teeth.

The customized IPS e.max abutment is then stained and characterized as required. This allows the colours to be built up from within, as found in natural teeth. The surface of the abutment that is in contact with the soft tissue is finished to a high gloss. Using the putty index as a guide the veneer is then waxed up and pressed to final contour. Once the veneer fits, it is cut back facially on the incisal 1/3 to create space for layering of ceramics and create internal characteristics using the wide range of IPS e.max Ceram incisal effects, and essence powders. In this case we fabricated two veneers, one veneer with standard IPS e.max Ceram Incisal effects and the other veneer was done with the new IPS e.max power incisal to increase the brightness level (Fig 15, 16).

A try in is done at chairside to check for fit and form of the restoration to provide a good emergence profile. Thereafter the veneer is stained and characterization is done.

The IPS e.max abutment is then cemented to the Ti-base. The Ti base is screwed onto a sport implant replica. The surface of the Ti base in contact with the soft tissue and the screw access hole of the Ti base is protected with wax. The area of the Ti base that is to receive the IPS e.max abutment is gently sandblasted to achieve a surface that is matt grey and its surface conditioned to receive the IPS e.max abutment.

The wax is then steam cleaned from the abutment. Monobond Plus is applied to the cleaned Ti base surface for 60 sec and the surplus is dried with air that is water and oil free. The internal surface of the IPS e.max abutment is then treated with an etching gel for 30 sec only. The etch-ant is then removed and cleaned. Monobond Plus is applied to the internal surface of the IPS e.max abutment for 60 sec and the surplus is dried with air that is water and oil free. Multilink Implant is used to bond the IPS e.max abutment to the Ti base. A glycerine gel is used at the cervical joint between the IPS e.max abutment and Ti base to prevent the formation of an insertion layer and this is then cured in a light curing unit.

The abutment is then finished with silicone polishers to achieve a smooth surface and remove any cement residue. The IPS e.max abutment is now ready to receive the pressed veneer for bonding.

The facial surface of the IPS e.max abutment is etched and so is the internal surface of the IPS e.max veneer for 20 sec each. The fact that there can be such predictable bonding on IPS e.max abutments is a distinct advantage over Zirconia frameworks.

Monobond plus is applied to both the bonding areas on the IPS e.max abutment as well as the IPS e.max veneer. Vaflon 2 is used to lute the IPS e.max veneer to the IPS e.max abutment. Excess luting material is removed and the veneer margins are covered with a glycerine gel and then light cured for final polymerization. Thereafter, the IPS e.max abutment and veneer margin junction is finished with silicone polishers.

The restoration is then delivered by torquing the abutment screw to 30 Ncm intraorally. The palatal cingulum access hole is finished with a light cured composite material, and finished to a high polish using silicone introracial polishers.

The final result showed excellent healing of the soft tissues around the implant (Fig 17). The post-operative radiograph revealed a well-integrated restoration and implant (Fig 18).

Discussion

The greatest advantage of Ti protocol is that one surgical procedure is needed and the overall treatment time is reduced. There is no doubt that in certain cases this protocol renders excellent short term results especially if all the six clinical assessment factors mentioned above are favourable. However caution has to be exercised by clinicians as there are several pitfalls of Ti protocol such as challenges with irregular Socket Morphology and increased risk of mucosal recession especially in thinner biotypes. Adjunct soft tissue surgery such as a connective tissue graft may be necessary for a successful esthetic outcome.

Using an IPS e.max Customized abutment provides several advantages; such as ability to etch and bond the final restoration thereby providing a stable long term result, and with IPS e.max’s translucency, the customized IPS e.max abutment will provide a better substrate for the final esthetic restoration and a scarificd for excellent gingival healing due to its outstanding biocompatibility.

Conclusion

Optimization of tissue support with customized lithium disilicate abutments is a viable treatment option for single unit implant restorations in the anterior zone. With the sufficient strength and better translucency that it offers over zirconia abutments, it makes a strong case to be chosen as the first line of restorative options in cases with high demand from implant restorations in the esthetic zone.
Dental Bleaching

By Dr. Roberto Turrini, Italy

Managing aesthetic restorations in presence of discoloured teeth is a challenge for both the clinical team and clinician, whose aim is to use methods which are as minimally invasive as possible, and materials which allow the preservation of dental tissue. Should one wish to act on the discolouration of one or more teeth, it becomes essential to take action on dental tissues through bleaching and dental restoration using materials which allow various clinical situations to be managed such as those with different tonalities between the teeth: restorative materials which thus should offer adequate uniformity in their results in those areas where it is necessary to mask the discoloration. The use of technology such as bleaching, and ceramic materials simultaneously can achieve excellent cosmetic results. This article intends to explain how to integrate bleaching compared to prosthetic treatment, in terms of time, in the various cases of discolouration, and what factors to consider when choosing the timing.

I) Pre-operative bleaching:

Can be done on teeth which need to be restored or on those which do not have to undergo any therapeutic treatment, and may differentiate three possible situations:

- If the treatment plan includes the improvement in both arches and the restorative rehabilitation involves only a few teeth, then whitening should be done on all the teeth, whether they need restoring or not. In this case restorative rehabilitation will be performed by matching the colour obtained by whitening. We can use an in-office technique (Pic.1) or an at-home bleaching one (Pic.2).

- If the tooth color of those elements which did not need to be restored is not corrected, then the whitening process only on those teeth needing to be restored being as less invasive as possible and using more transparent materials.

- If the discoloured tooth is treated a treated root canal lacking pin reconstruction, perform the bleaching internally and externally.

After rehydration of the tooth has occurred, a reevaluation of the color should be made. If the result is already satisfactory a more invasive restorative treatment can be avoided (Pic.3).

The advantage compared to preoperative bleaching is that peroxides can be placed it when the tooth has previous composite restorations and so not allow the bleach to reach the dental tissues.

II) Intra-operative bleaching:

It is only used on teeth needing restoration after performing the pre-elimination preparation of the abutment. It should be used to enhance the color of the abutment, and can be either external or internal if the tooth is non-vital. It can be done after the provisional bleaching or re-place it when the tooth has previous composite restorations that do not allow the bleach to reach the dental tissues.

Even for this procedure is appropri-ate to wait 20 days before preceed- ing to abutment color recognition and the adhesive cementation.

III) Post-operative bleaching:

It only acts on non-restored teeth. It serves to even out natural tooth color but to obtained by restoration if we realize there is a color difference after the final cementation.

Materials and methods available on the market can be used to standard-ize the color of one or more teeth. This is a determining factor when testing the ability of teeth to be whiten-ed and then resorting to restora-tion will be done by adapting to the color obtained.

This procedure requires a waiting period of 20 days prior to revealing the color of the end product and its adhesive cementation. In fact, it is important that the result is stable before matching the color because after whitening, tooth rehydration occurs with a slight decrease in value. Adhesive cementation however, should be postponed in order to avoid that the porcelains inhibit the polymerization, therefore a 20 day waiting period must elapse.

Bibliography

The rise of digital dental restorations

By Brendan Day & Marc Chalupsky, DPs

Composite-based CAD/CAM materials have been marketed as composite ceramics or hybrid ceramics to underscore their longevity. The latest generation of reinforced composite blocks demonstrates excellent material properties, which are in part even superior to those of ceramics. In order to investigate this, Dr Ralf Böhnlein, a leading expert on composite-based CAD/CAM materials, recently compared the material properties and luting strategies of certain reinforced composite blocks to those of ceramics.

Digital production is becoming increasingly popular in the fabrication of dental restorations. In this process, the restorations are ground to their final shape using digital data sets. These digitally produced restorations have often used ceramic-based materials. Although these ceramic materials have good aesthetics and resist abrasion, they also have drawbacks, including a relatively high modulus of elasticity, a tendency to chip and abrasion of the antagonist. Furthermore, modifying or repairing ceramics intra- or extra-orally is quite an elaborate procedure. Therefore, there is a need for composite materials for use with the CAD/CAM method. In addition to light-curing composites, permanent restorations are crucial for the success of treatment.

Material properties

Compared with ceramics and poly-methylmethacrylate double bonds. After the restoration has been fabricated, the surface to be bonded is sand-blasted to enlarge the surface and to create mechanical retention. This surface then contains particles of dental glass and the polymerised resin matrix. As sandblasting is a very abrasive process, care should be exercised so not too much substance is removed. The effect of the sandblasting procedure is comparable to a pretreatment with sandblasting with corundum for zirconia or etching with hydrofluoric acid for silicate ceramics. In all cases, the result is an enlargement of the surface and the establishment of mechanical retention.

Adhesion to tooth substance

In the case of light-curing bonds, similar to the case with conventional filling therapy, the light curing should follow the instructions for use after application to the tooth substance. Furthermore, the luting material used should not be too opaque. Otherwise, not enough light may penetrate the restoration to reach the uncured inhibition layer of the bond during final light curing. In such cases, dual-curing or chemically curing bonds are indicated.

Conclusion

Composite-based CAD/CAM materials are very similar to light-curing filling materials in terms of their design; thus, they are just as easy to modify and polish after the grinding process. Shade adaptations or modifications—for example, to create a contact point—are easy to realise with the appropriate adhesive technique and composite. Compared with light-curing composites, CAD/CAM composite materials are fabricated extra-orally under perfect industrial conditions; therefore, they demonstrate improved mechanical properties.
**IDS 2017: Organisers to stage Career Day again**

By DTI

COLOGNE, Germany: After its successful launch in 2015, Career Day will be hosted again this year at the International Dental Show (IDS), the organisers have announced. Young people seeking a career in the dental industry, as well as experienced dental professionals looking for job opportunities or further training, will have the opportunity to meet with representatives of prominent dental companies from all over the world. More than 2,400 companies from about 60 countries are expected to attend the world’s most important industry get-together for the international dental market in Cologne from 21 to 25 March 2017.

For IDS exhibitors, Career Day offers a platform for presentations on professional training, further education and career advancement. In the Recruitment Lounge, linked to the presentation area, facilities will be available for individual meetings in discreetly partitioned areas.

On Career Day, held on 25 March, university graduates, trainers in the fields of dentistry and dental technology, and pupils and school-leavers who would like to find out about training and career opportunities in the dental industry can obtain a first impression of the various spheres of activity of the participating companies. In addition, the initiative offers fully trained persons or career changers information about further training options and career opportunities in the dental industry.

Meetings with candidates on Career Day can easily be arranged using the online scheduling facility on the IDS homepage. However, spontaneous speed meetings are also possible. All exhibitors involved in the initiative will be announced on the IDS homepage and be mentioned in a dedicated printed flyer.

Career Day was successfully introduced at IDS 2015 by the Association of German Dental Manufacturers and the German Dental Trade Association. This year, the event will be hosted in the arena between Halls 4 and 5.

**Know-How Tours: Top dental practices open doors to IDS visitors**

By DTI

COLOGNE, Germany: After the succes-
sful Know-How Tour in 2017, the organisers of the International Dental Show (IDS) have announced their return this year. Interested visitors will once again have the opportunity to view two of the most prestigious dental practices in Cologne and learn how the respective practices apply the latest treatment concepts using their state-of-the-art equipment. The tours, offering simultaneous interpretation into English, are aimed at dental professionals seeking job opportunities or further training, will have the opportunity to meet with representatives of prominent dental manufacturers worldwide since the successful launch in 2015, Career Day will be hosted again this year at the International Dental Show (IDS), the organisers have announced. Young people seeking a career in the dental industry, as well as experienced dental professionals looking for job opportunities or further training, will have the opportunity to meet with representatives of prominent dental companies from all over the world. More than 2,400 companies from about 60 countries are expected to attend the world’s most important industry get-together for the international dental market in Cologne from 21 to 25 March 2017.

For IDS exhibitors, Career Day offers a platform for presentations on professional training, further education and career advancement. In the Recruitment Lounge, linked to the presentation area, facilities will be available for individual meetings in discreetly partitioned areas.

On Career Day, held on 25 March, university graduates, trainers in the fields of dentistry and dental technology, and pupils and school-leavers who would like to find out about training and career opportunities in the dental industry can obtain a first impression of the various spheres of activity of the participating companies. In addition, the initiative offers fully trained persons or career changers information about further training options and career opportunities in the dental industry.

Meetings with candidates on Career Day can easily be arranged using the online scheduling facility on the IDS homepage. However, spontaneous speed meetings are also possible. All exhibitors involved in the initiative will be announced on the IDS homepage and be mentioned in a dedicated printed flyer.

Career Day was successfully introduced at IDS 2015 by the Association of German Dental Manufacturers and the German Dental Trade Association. This year, the event will be hosted in the arena between Halls 4 and 5.

**Know-How Tours: Top dental practices open doors to IDS visitors**

By DTI

COLOGNE, Germany: After the suc-
sccessful launch in 2015, Career Day will be hosted again this year at the International Dental Show (IDS), the organisers have announced. Young people seeking a career in the dental industry, as well as experienced dental professionals looking for job opportunities or further training, will have the opportunity to meet with representatives of prominent dental manufacturers worldwide since the successful launch in 2015, Career Day will be hosted again this year at the International Dental Show (IDS), the organisers have announced. Young people seeking a career in the dental industry, as well as experienced dental professionals looking for job opportunities or further training, will have the opportunity to meet with representatives of prominent dental manufacturers worldwide since the successful launch in 2015, Career Day will be hosted again this year at the International Dental Show (IDS), the organisers have announced. Young people seeking a career in the dental industry, as well as experienced dental professionals looking for job opportunities or further training, will have the opportunity to meet with representatives of prominent dental manufacturers worldwide since the successful launch in 2015, Career Day will be hosted again this year at the International Dental Show (IDS), the organisers have announced. Young people seeking a career in the dental industry, as well as experienced dental professionals looking for job opportunities or further training, will have the opportunity to meet with representatives of prominent dental manufacturers worldwide since the successful launch in 2015, Career Day will be hosted again this year at the International Dental Show (IDS), the organisers have announced. Young people seeking a career in the dental industry, as well as experienced dental professionals looking for job opportunities or further training, will have the opportunity to meet with representatives of prominent dental manufacturers worldwide since the successful launch in 2015, Career Day will be hosted again this year at the International Dental Show (IDS), the organisers have announced. Young people seeking a career in the dental industry, as well as experienced dental professionals looking for job opportunities or further training, will have the opportunity to meet with representatives of prominent dental manufacturers worldwide since the successful launch in 2015, Career Day will be hosted again this year at the International Dental Show (IDS), the organisers have announced. Young people seeking a career in the dental industry, as well as experienced dental professionals looking for job opportunities or further training, will have the opportunity to meet with representatives of prominent dental manufacturers worldwide since the successful launch in 2015, Career Day will be hosted again this year at the International Dental Show (IDS), the organisers have announced. Young people seeking a career in the dental industry, as well as experienced dental professionals looking for job opportunities or further training, will have the opportunity to meet with representatives of prominent dental manufacturers worldwide since the successful launch in 2015, Career Day will be hosted again this year at the International Dental Show (IDS), the organisers have announced. Young people seeking a career in the dental industry, as well as experienced dental professionals looking for job opportunities or further training, will have the opportunity to meet with representatives of prominent dental manufacturers worldwide since the successful launch in 2015, Career Day will be hosted again this year at the International Dental Show (IDS), the organisers have announced. Young people seeking a career in the dental industry, as well as experienced dental professionals looking for job opportunities or further training, will have the opportunity to meet with representatives of prominent dental manufacturers worldwide since the successful launch in 2015, Career Day will be hosted again this year at the International Dental Show (IDS), the organisers have announced. Young people seeking a career in the dental industry, as well as experienced dental professionals looking for job opportunities or further training, will have the opportunity to meet with representatives of prominent dental manufacturers worldwide since the successful launch in 2015, Career Day will be hosted again this year at the International Dental Show (IDS), the organisers have announced. Young people seeking a career in the dental industry, as well as experienced dental professionals looking for job opportunities or further training, will have the opportunity to meet with representatives of prominent dental manufacturers worldwide since the successful launch in 2015, Career Day will be hosted again this year at the International Dental Show (IDS), the organisers have announced. Young people seeking a career in the dental industry, as well as experienced dental professionals looking for job opportunities or further training, will have the opportunity to meet with representatives of prominent dental manufacturers worldwide since the successful launch in 2015, Career Day will be hosted again this year at the International Dental Show (IDS), the organisers have announced. Young people seeking a career in the dental industry, as well as experienced dental professionals looking for job opportunities or further training, will have the opportunity to meet with representatives of prominent dental manufacturers worldwide since the successful launch in 2015, Career Day will be hosted again this year at the International Dental Show (IDS), the organising
Breath test could help detect stomach and oesophageal cancer

By DTI

LONDON, UK/AMSTERDAM, Netherlands: A test that measures the levels of five chemicals in the breath has shown promising results for the detection of cancers of the oesophagus and stomach in a large patient trial. The new research, involving more than 300 patients, found that the test could diagnose cancer with an overall accuracy of 85 per cent.

Together, stomach and oesophageal cancer account for around 1.4 million new cancer diagnoses each year worldwide, according to the Cancer Today magazine. Both tend to be diagnosed late, because the symptoms are ambiguous; consequently, the five-year survival rate for these two types of cancer is only 15 per cent.

At present, the only way to diagnose oesophageal cancer or stomach cancer is with endoscopy. This method is expensive, invasive and has some risk of complications. “A breath test could be used as a non-invasive, first-line test to reduce the number of unnecessary endoscopies. In the longer term this could also mean earlier diagnosis and treatment, and better survival,” said Dr Sheraz Markar, a National Institute for Health Research Clinical Trials Fellow from Imperial College London, at the 2017 European Cancer Congress, recently held in Amsterdam.

The trial was based on the results of previous research that suggested differences in the levels of specific chemicals—butyric, pentanoic and hexanoic acids, butanal and decanoic—in the breath of patients with stomach or oesophageal cancer and patients with upper gastrointestinal symptoms without cancer. The new research aimed to test whether this chemical signature that seemed to typify cancer could be the basis of a diagnostic test.

In the study, the research team collected breath samples from 395 people at St Mary's Hospital, Imperial College Healthcare NHS Trust; University College Hospital; and the Royal Marsden Hospital, all in London. Of these, 163 had been diagnosed with stomach or oesophageal cancer and 172 showed no evidence of cancer during examination via endoscopy.

All the samples were analysed with a technique called selected ion flow tube mass spectrometry, which is able to accurately measure small amounts of different chemicals in mixtures of gases such as breath. The researchers measured the levels of the five chemicals in each sample to see which ones typified cancer and 172 showed no evidence of cancer during examination via endoscopy.

The results showed that the test was 83 per cent accurate overall, with a sensitivity of 80 percent and a specificity of 81 per cent. This means that the breath test was good both at picking up those who had cancer (specificity) and at correctly identifying who did not have cancer (specificity).

Markar said: “Because cancer cells are different to healthy ones, they produce a different mixture of chemicals. This study suggests that we may be able to detect these differences and use a breath test to indicate which patients are likely to have cancer of the oesophagus and stomach, and which do not. However, these findings must be validated in a larger sample of patients before the test could be used in the clinic.”

Over the next three years, the researchers will continue with a larger trial, using the test on patients who have undergone an endoscopy for gastrointestinal symptoms, but have not yet been diagnosed with cancer. This will assess the ability of the test to identify cases within a group that is likely to contain only a small percentage of cancers.

The team is also working on breath tests for other types of cancer, such as colorectal and pancreatic cancer, which could be used as first-line tests in general practice surgeries.

The study, conducted in collaboration with Karolinska Institutet in Sweden and University College London in the UK, was presented at the 2017 European Cancer Congress.
Researchers develop treatment for nerve pain affecting teeth and face

By DTI

Researchers develop treatment for nerve pains. The bouts are triggered by the trigeminal nerve, or teeth and is agonising for sufferers. Known as trigeminal neuralgia, the sharp pain shoots into the face area. The standard treatment for this neuralgia is characterised by sharp, electric shocks and therefore requires drug injections and therefore requires drug treatments. Our new exhibitors come from various fields of dentistry and their ranges will expand the already large and diverse offering at the show. Furthermore, IDS is becoming increasingly international with companies from North America, Asia and Europe exhibiting their latest products and solutions at the event for the first time.

The novel substance, BIIB074, which was tested in the study, inhibits Nav1.7 state-dependently. This means that the more active this sodium channel is, the stronger the pain. In trigeminal neuralgia, the nerve damage is presumed to be at the base of the skull. However, this region is difficult to reach by local anaesthetic, inhibits the pain. In trigeminal neuralgia, the nerve damage is presumed to be at the base of the skull. However, this region is difficult to reach by local anaesthetic, inhibits the nerve and promotes an anaesthetic, inhibits the nerve and promotes an anaesthetic, inhibits the nerve and promotes an anaesthetic, inhibits the nerve and promotes an anaesthetic, inhibits the nerve and promotes an anaesthetic, inhibits the nerve and promotes an anaesthetic, inhibits the nerve and promotes an anaesthetic, inhibits the nerve and promotes an anaesthetic, inhibits the nerve and promotes an anaesthetic, inhibits the nerve and promotes an anaesthetic, inhibits the nerve and promotes an anaesthetic, inhibits the nerve and promotes an anaesthetic, inhibits the nerve and promotes an anaesthetic, inhibits the nerve and promotes an anaesthetic, inhibits the nerve and promotes an anaesthetic, inhibit

Our new exhibitors come from various fields of dentistry and their ranges will expand the already large and diverse offering at the show. Furthermore, IDS is becoming increasingly international with companies from North America, Asia and Europe exhibiting their latest products and solutions at the event for the first time.

In addition to digital dentistry, what other areas will be in focus at the show?

Some of the areas that will be in the spotlight are periodontology, implantology and endodontics. Prophylaxis will also continue to be a topic of importance at IDS, in addition to many other areas of dentistry.

A number of new auxiliary show concepts, like Career Day and the Know-How Tours, were introduced in 2015. How were they received and will they be continued?

Both formats were very well received by our visitors and will be continued in 2017. While IDS focuses primarily on the business and product presentation at booths, we strongly believe that an interesting auxiliary programme can generate leads for information gathering and new business negotiations.

What are the long-term prospects for IDS, and what concepts are being developed to extend the trade show offering?

Owing to the development and particular success of IDS in recent years, we can look positively towards the future. In this dynamic industry, one has to keep pace with changes, therefore, we will sit down with our co-organiser, the Association of the German Dental Industry, after the show to discuss the outcome of the event and explore how we can continue its success in the long term.

Thank you very much for the interview.
Eleven tips for success in your dental clinic

Part III: CASCO and PEC

By Dr Anna Maria Yiannikos, Germany & Cyprus

As dental practitioners, we work with patients that have special needs and difficulties, therefore sometimes we find ourselves in trouble due to inevitable delays. My question here is: How can we deal with them? However, most essential is, how can we control them? Be aware of the acronym CASCO, which stands for control, apologise, solution, change, and offer.

1. Control
You can control your delays by assigning to your assistant to remind you every five minutes for the next appointment that awaits you. She can become your personal alarm clock that will wake you up and remind you of your next appointment. You should also inform your “alarm clock” (aka assistant) how long exactly your next patient will have to wait in case of delays, so she can also inform him/her promptly and avoid possible irritability.

2. Apologise
Do not be afraid to say sorry to your patients, this will show your humane side and they will really appreciate it. You can do it in so many ways, verbally (immediately when you face them) or you can send them an email expressing your apologies. But please avoid adding annoying excuses, like ‘Sorry for being late, but I had a difficult surgery’ or ‘I am so sorry, but it is not my fault as the previous appointment came 30 minutes late’. Do you think that your patients should care about our uncontrolled schedule? Or worse, the previous patient? Absolutely not! Please remember to avoid any excuses that will make them more angry or frustrated.

3. Solution
Give them a solution for their next appointment. For example, you can say, “I suggest that next time we can book you especially the first morning appointment to ensure no delays.”

4. Change
Do not be afraid to make the change—and change the habit of having delays at your clinic and create a clinic with no or limited delays. Trust me, this will add value to your clinic’s image—be aware that the best dentist is the one that respects his patients by being punctual.

5. Offer
Be ready to give them a complimentary treatment to show your apologies once more, they will really love that. Avoid phrases like “I will give you a free treatment”, instead explain to them that “this treatment is a gift from us”. You can combine two treatments without charging the second one. In this way, you will raise the value of the treatment for your patients. At the same time, explain the separate cost of each treatment and the benefits you just gave to your patients without mentioning the word free. For example, “I will now do a dental cleaning and in addition we will do a polishing session with the new air flow machine that would cost 50 Euros. You will like the results much more than the ones from the simple dental cleaning, your teeth will shine more and the stains between your teeth will disappear completely.”

Now let’s go to the sixth tip, which is as essential as the previous one and concerns how we can deal with conflicts. Unfortunately, there are times that we have to face problematic patients or unpleasant situations with our employees or our associates. How can we face these conditions? Apply PEC to successfully deal with them. PEC stands for

1. Perception
Name it! Behave as an adult and get rid of fear and just say the problem. Think what the worst scenario is. By making this risk management process, you immediately acknowledge the fact that you could face it as well. Be ready to listen to the other party, ask them about their opinion, may be their perception is completely different from yours.

2. Emotions
Deal with them and then start the conversation. You should not start a discussion in case you still feel angry about the person or the issue. Be well prepared and avoid to take anything personally. Be ready to express your feelings, you might be surprised with the other party’s unawareness of the problem. Remember to show your empathy with phrases like “I understand you”, instead of “You are right”. It is a pity to miss the wood for the trees!
FDA issues warning against homeopathic teething tablets

By DTI

SILVER SPRING, Md., USA: After laboratory testing of homeopathic teething tablets, the Food and Drug Administration (FDA) has urged consumers not to use these products, as certain brands contain inconsistent amounts of Atropa belladonna, a toxic plant, which poses an unnecessary risk to infants and children.

In particular, the FDA analysis found that belladonna alkaloids (atropine and scopolamine) content and caffeine content were not uniform among the tablets marketed by CVS and Hyland’s. In addition, the levels of atropine and scopolamine in some of the CVS tablets and the levels of caffeine in some of the Hyland’s tablets far exceeded the amount stated on the products’ labels, according to the federal agency.

In light of these findings, the FDA contacted Standard Homeopathic Company, the manufacturer of Hyland’s homeopathic teething products, regarding a recall of its homeopathic teething tablet products labeled as containing belladonna, in order to protect consumers.

“The body’s response to belladonna in children under two years of age is unpredictable and puts them at unnecessary risk,” said Dr. Janet Woodcock, director of the FDA’s Center for Drug Evaluation and Research. “We recommend that parents and caregivers not give these homeopathic teething tablets to children and seek advice from their health care professional for safe alternatives.

Health care professionals and consumers are encouraged to report adverse events regarding teething products via the FDA website. Homeopathic teething products have not been evaluated or approved by the FDA for safety or effectiveness. The agency highlighted that it is unaware of any proven health benefit of the products, which are labeled as relieving teething symptoms in children.

The American Academy of Pediatrics recommends that instead of using over-the-counter pain relievers, caregivers should give their baby a chilled teething ring or gently rub or massage the child’s gums to provide pain relief.

The 2nd Dentist’s Lifestyle Conference & Exhibition (career plan life plan) - 20-21 April 2017

By DLS Bahrain

Innovated by IIDA dental events management and Tarteeb events production, under the patronage of his excellency Lieutenant General Doctor “Shaikh Mohammed bin Abdullah Al Khalifa” president of the supreme council health kingdom of Bahrain.

DLS Conference & Exhibition aimed to focus on everything related to the dentist’s work, entrepreneurship and lifestyle.

This year the two-day International Conference is featuring 21 world renowned speakers and lectures to present and speak on topics related to Dentistry, Marketing, Media, Voluntarism, Fitness, Fashion, Life coaching and Business Entrepreneurship. DLS Bahrain 2017 is accredited with 15 CME from national health regulation Authority Bahrain.
BYE-BYE BIOFILM

AIR-FLOW® POWDER PLUS
THE PLUS FOR SUB- AND SUPRA-GINGIVAL PROPHYLAXIS

→ FOR PERIODONTITIS- AND PERI-IMPLANTITIS-THERAPY

→ SUB- AND SUPRA-GINGIVAL IN ONE STEP

→ GENTLE, SAFE AND EFFICIENT

→ MINIMAL GRAIN SIZE OF 14µm

→ PLEASANT NATURAL TASTE

BASED ON ERYTHRITOL!

BYEBYEBIOMFILM.COM

Powerful Formulation to help stop bleeding gums

Helps prevent bleeding gums

Bleeding gums are one of the first signs of gum disease, a major cause of tooth loss.

For full information about the product, please refer to the product pack.

We value your feedback

Saudi Arabia - 400 8447012
Gulf & Near East countries - +973 16500404
contactus-me@gsk.com
www.gsk.com

Item Code: CHSAU/CHSEN0/0079/16c – Jan 2017. Preparation Date: January 2016
The benefits of NovaMin® technology and sodium fluoride in a single formulation

With twice-daily brushing, it can:

• Create an even harder hydroxyapatite-like layer over exposed dentine and within exposed dentine tubules*1-7
• Continually protect your patients from dentine hypersensitivity,** with significant benefits in as little as 2 weeks8,9

With twice-daily brushing, it can:


Recommend Sensodyne Repair & Protect to help your patients live life more free from the impacts of dentine hypersensitivity**

*vs. Previously marketed formulation. **With twice daily brushing.
EVENTS 2017
INNOVATIVE DENTAL SOLUTIONS

CLINICAL ENDODONTICS
Certificate, Diploma and Fellowship Programme

Dubai, UAE
www.cappmea.com/endo

DUBAI DENTAL WEEK
Full week of CME dental hands-on events
May | November

Dubai, UAE
www.cappmea.com

12TH CAD/CAM & DIGITAL DENTISTRY CONFERENCE & EXHIBITION
Conference / Exhibition: May 05-06, 2017
Hands-on courses: May 01-08, 2017
Dubai, UAE
www.cappmea.com/cadcad

DENTAL TECHNICIAN INTERNATIONAL MEETING
Part of 12th CAD/CAM & Digital Dentistry Conference/Exhibition
Conference / Exhibition: May 05, 2017
Hands-on courses: May 01-08, 2017
Dubai, UAE
www.cappmea.com/cadcad

4TH ASIA - PACIFIC EDITION
CAD/CAM & DIGITAL DENTISTRY INTERNATIONAL CONFERENCE
Joint Meeting with Dental Technician Parallel Session
Conference / Exhibition: August 19-30, 2017
Hands-on courses: August 18-21, 2017
Singapore
www.capp-asia.com

9TH DENTAL - FACIAL COSMETIC CONFERENCE & EXHIBITION
Joint Meeting with 6th AAD Global Conference
Dental Hygienist Seminar
Conference / Exhibition: November 03-04, 2017
Hands-on courses: November 01-07, 2017
Dubai, UAE
www.cappmea.com/aesthetic

RESTORATIVE & AESTHETIC DENTISTRY
Certificate, Diploma and Fellowship Programme

Dubai, UAE
www.cappmea.com/endo

DENTAL TRIBUNE MIDDLE EAST & AFRICA
In 2012 CAPP joined a global family of 95 publishers by becoming the proud owner of the Dental Tribune Middle East & Africa edition, and since then we have been delivering 6 print publications to over 20,000 Dental Professionals and in the MEA region, 24 e-newsletters are delivered to more than 41,000 active subscribers, and through an international website the latest industry news reaches the largest dental community worldwide an audience of over 650,000 Dental Tribune readers.

www.dental-tribune.me
03-04 Nov 2017 | CONFERENCE
03-04 Nov 2017 | EXHIBITION
04 Nov 2017 | DHS
01-07 Nov 2017 | HANDS-ON COURSES

9TH DENTAL FACIAL COSMETIC CONFERENCE & EXHIBITION

Joint Meeting with

6TH AAID GLOBAL CONFERENCE DENTAL HYGIENIST SEMINAR (DHS)

Contact Us
Mobile: +971502793711
Telephone: +97143616174
FAX: +97143686883
E-mail: events@cappmea.com
www.cappmea.com/aesthetic

ACCREDITATION
HAAD | DHA | CE Credits

ADA CERP® Continuing Education Recognition Program
CAPP designates this activity for 14CE Credits

INTERCONTINENTAL DUBAI FESTIVAL CITY
Exploring the fracture resistance of retentive pin-retained e.max press onlays in molars

By Dr. Les Kalman & Yasmin Joseph, Canada

Retentive titanium dentinal pins have been combined with indirect restorations. Application of pins has been used with lithium disilicate, an indirect pressed ceramic restorative material, termed e.max. The objective of this study was to investigate the fracture resistance of pin-retained versus non-pin-retained indirect e.max press restorations. Ten human extracted teeth were used for the control and ten for the test group. Titanium dentinal pins were placed and e.max press restorations were fabricated, by a commercial laboratory, and then cemented. Fracture resistance was assessed. Data was collected and results were obtained. Fracture resistance of both groups indicated no significant difference in values. An observation from testing illuminated that pin-returned e.max benefited from a controlled fracture, which minimized tooth damage. The data suggests that pin-returned indirect e.max restorations offer no appreciable difference in fracture resistance. Further testing would be required to expand upon the sample size, explore other strength vectors and consider a clinical investigation.

Introduction

The loss of tooth structure, from disease or biomechanical stress, requires the replacement of tooth structure through dental restorative techniques. This may occur either directly or indirectly. Extensive tooth restorations typically require indirect restorations; the type ofFill in the blanks: 1. The type of retentive pins used also determines the success rate of the restoration. Among the two pin types, titanium retentive pins have been found to be highly biocompatible with minimal corrosive activity.[10] Due to the sensitivity of indirect restoration bonding and resultant retention, an investigation on whether the use of titanium retentive pins would offer an increase in fracture resistance seemed fitting. If there was a significant increase in fracture resistance between the restorative material and the tooth, pin reinforced e.max press restorations could justify further investigations. In addition, with advances in 3D intra-oral imaging and CAD/CAM, a digital workflow would provide a simple and predictable clinical alternative.

Materials and methods

Human extracted molar teeth were used for this investigation. They were sorted and randomized. A total of 20 extracted molar teeth were used. The control group contained ten molar teeth. Each tooth was prepared for a four surface onlay restoration which did not incorporate pins. The test group included ten molar teeth. Each tooth was prepared for a four surface onlay restoration which did not incorporate pins. Each four surface e.max onlay restoration preparation had either the buccal or lingual wall remaining intact (Fig. 4) following standard pin-retained amalgam guidelines. [9] Titanium pins with a diameter of 0.6 mm were used (Stabiol, Fairfax Dental Inc.). Two pins were placed in each tooth at the appropriate line angles, pin 1 was placed on the mesial side whereas pin 2 was placed on the distal side of each molar tooth (Fig. 2). Pins were inserted to a 2 mm depth. The top mm was sheared off and smoothed.[8] Pin length was slightly variable among the teeth. Radiographs were taken in a buccolingual and mesiodistal fashion to verify pin placement (Fig. 3). All tooth specimens were packaged and sealed in a moisture controlled container and shipped to a dental laboratory (Deertail) for restoration fabrication with e.max press (Ivoclar Vivadent) Specimens were returned in the same manner along with the e.max onlay restorations (Figs. 4 & 5). Tooth specimens and restorations were prepared and bonded (Fig. 6) using Multilink adhesive cementation systems (Multilink Autolink; Ivoclar Vivadent) following manufacturer recommendations.[11]

Table 2: Fracture resistance values for samples (Newtons)

<table>
<thead>
<tr>
<th>Control Group (N)</th>
<th>Test Group (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3046</td>
<td>2679</td>
</tr>
<tr>
<td>2277</td>
<td>2436</td>
</tr>
<tr>
<td>2121</td>
<td>1605</td>
</tr>
<tr>
<td>3079</td>
<td>2606</td>
</tr>
<tr>
<td>2510</td>
<td>1716</td>
</tr>
<tr>
<td>2258</td>
<td>2927</td>
</tr>
<tr>
<td>3120</td>
<td>3060</td>
</tr>
<tr>
<td>2396</td>
<td>1575</td>
</tr>
<tr>
<td>2859</td>
<td>3118</td>
</tr>
<tr>
<td>2222</td>
<td>2385</td>
</tr>
</tbody>
</table>

Results

The force (Newtons) required to fracture of either the restorative or teeth, or a combination of the two, was extremely variable (Table 3). The test group suggested greater variability among the values and the highest fracture resistance value. There was no significant difference

Cement flash was removed and the restorations were polished following standard Schulich Dentistry protocols. The prepared tooth was fixed with ortho resin (Fig. 7) (acrylic resin, DENTIFY Caulk) in the stabilization ring (Fig. 8). A universal loading machine (Instron laboratory testing unit) ITW was utilized to apply an axial load to the tooth until the tooth fractured (Fig. 9). The machine applied pressure at a maximum crosshead speed of 0.5 mm/min. Tooth fracture was assessed visually and measured in Newtons for all the teeth in the control and test groups (Fig. 10).

Table 3: Fracture resistance values for samples (Newtons)
in the fracture resistance between the non pin-retained e.max press restorations and the pin-retained e.max press restorations (Fig. 11). An unpaired t-test result using \( P < .05 \) was \( P = .4443 \) in this assessment. Data were obtained by using an analysis of variance (ANOVA). Significant differences were set at a .05 level (Fig. 11).

**Discussion**

There was no statistical difference between the control group (non pin-retained restorations) and the test group (pin-retained restorations) in fracture resistance. The results indicated that the test group exhibited greater variability. This could be due to pin location, pin length, differences in pin angulations or variations in the width of the orifice preparation margin. The highest fracture resistance value was a pin-retained e.max onlay, which could be related to the increased surface area and subsequent bond strength.[15] Pin-retained e.max onlays had a tendency to fracture in a very controlled manner, with much of the tooth-restoration complex remaining intact.

Conversely, non pin-retained e.max onlays typically fractured in such a violent manner that the tooth restoration complex was destroyed.

Due to the degree of variability, further laboratory testing would be warranted with a larger sample size. A clinical investigation, highlighting the procedural aspects, would also be an ideal extension of the research. Further studies should isolate variables and establish a greater sample size. With advances in technology, the digital workflow of records, design and output could be easily implemented for pin-retained restorations. It has been previously shown that digital impressions have the ability to capture all aspects of a pin- or post-retained substructures (Fig. 12).[15] It has also been demonstrated that CAD/CAM technology has the precision and accuracy to mill (Fig. 13) the subsequent pin-bored restoration from an e.max CAD block.[15] A digital approach seems to represent a simple and predictable chairside alternative for the clinician.

**Conclusions**

This study explored combining retentive titanium pins with indirect e.max press onlay restorations in extracted human molar teeth. Teeth were then subjected to axial loading in a universal loading machine. There was no statistical difference in fracture resistance between the two groups. However, the highest fracture resistance was displayed from a pin-retained e.max onlay. This may be related to the increased surface area and subsequent bond strength.

Observationally, pin-retained e.max onlays fractured in a manner that seemed more controlled than non pin-retained e.max onlays.

Digital dentistry could simplify this potential alternative by providing the clinician with the tools required to acquire the digital impression, design and fabricate the final restoration. Although pin-retained was termed for the investigative restorations, perhaps pin-reinforced would seem more logical. Further investigations are required to substantiate the research and identify whether this approach may be considered as a clinical alternative.

**Conflict of interest**

Research was supported by the Schuchardt Dentistry Summer Research Project and by Research Driven Inc. Les Kalman is the co-owner and President of Research Driven Inc.

**Acknowledgements**

The authors thank Victoria Yu, a dental student, who assisted with aspects of the methodology, and Dr. Amir Rizkalla, BSc, MEng, PhD, Associate Professor & Chair of the Division of Bionanomaterials Science, who facilitated the testing.

---

**A2**

**XP-endo® Shaper - 3D-Shaping - Clinical Cases**

By FKG

Technological advances and manufacturing processes are allowing the practitioner the ability to get closer to ideal root canal therapy. The “perfect” file should touch all the walls of the canal without changing its shape while still allowing room for disinfecting irrigation solutions. The aim is to achieve optimal disinfection in a minimally invasive fashion. Thus both aims of root canal therapy can be achieved; a healthy surrounding periodontium and a strong root with minimal resistance to fracture. FKG aims to develop advanced endodontic instruments that provide dentists with the best shaping ability, even in curved or oval canals.

The XP-endo® Shaper is the latest instrument of the FKG’s range of 3D instruments. It is the epitome of what incremental innovation can create for modern dentistry, it features the combination of a dual technology and a unique expertise.

Firstly, the exclusive MaxWire® alloy provides the instrument with an exceptional flexibility and an extreme resistance to cyclic fatigue. It allows the XP-endo® Shaper to shape and to progress inside the root canal with agility, whilst expanding and contracting its shape, adapting itself to the specific morphology of each canal.

In addition, the Booster Tip, thanks to its six cutting edges, guides the instrument easily toward the apical terminus and enables to start the shaping at an ISO diameter of 3.5, then gradually to increase its working scope to reach an ISO diameter 30.

**CLINICAL CASE n°1**

Pulpectomy on a first upper right molar A 60 years-old caucasian female patient presented a symptomatic pulpitis on tooth 16.

After a glide path of 15/02 with a hand file, the canals were shaped using a Gutta Percha 01/04. Finally, the canals were obturated with TotalFill® BC, Talfill® and TotalFill® BC Sealer.

**Page A3**
CLINICAL CASE n°2
Treatment (ex-vivo) of a first upper right premolar. Endodontic treatment of a first upper right premolar (Tooth 14), extracted for orthodontic reasons. The aim of this procedure was to assess the ability of XP-endo® Shaper to instrument irregularities of the canal system and prepare it for the filling.

After preparing a glide path to 20/.02, the canals were shaped thanks to the XP-endo® Shaper to the desired final size 30/.04. The XP-endo® Shaper could get to canal irregularities, and maintained the original shape of the canal.

Finally, the canals were obturated with TotalFill® BC Points™ and TotalFill® BC Sealer™.

CLINICAL CASE n°3
A 42 years-old caucasian male presented a symptomatic pulpitis. After preparing a glide path to 20/.02, the mesial canals were shaped thanks to the XP-endo® Shaper to the final size 30/.04. The distal canals initially larger than the mesial canals were also shaped with the XP-endo® Shaper creating a space to adapt a size 40/.04 TotalFill® BC points™.

After shaping, disinfection was completed with the XP-endo® Finisher for all canals. The obturation was carried out with TotalFill® BC points™ and TotalFill® BC sealer™.

These technical advantages combined with high-speed continuous rotation and minimum torque, minimise the stresses exerted onto the canal walls and prevent debris compaction in the dentinal tubules, they also promote the creation of micro-debris which can be easily eliminated thanks to the turbulence generated by the instrument. It provides the patient with a non-aggressive, conservative treatment.

This instrument is an amazing new single file system from FKG. It allows faster treatment in the majority of the root canals. With its enhanced flexibility compared to instruments of the same size and its high cyclic fatigue resistance, shaping becomes a simple, safe and quick process.

This high-tech instrument helps the dentists to perform their procedures with reproducible success.

Hands-On Training in Dubai
Post-endodontic-treatment: Should we place posts, do crowns or just composites and onlays?

Tutor: Dr. Eduardo Mahn, Chile
Date: 05 May 2017
Time: 09:00 - 18:00
Venue: InterContinental Hotel Festival City, Dubai, UAE
Target Audience: Dentists
7 CE Credits

Course objectives
1. Understand the importance of proper planning and diagnostics when treating with endodontically treated teeth.
2. Understand the last improvements in material science and the treatment possibilities with glass fiber posts.
3. Understand the biomechanics involved when teeth are prepared.
4. Decide when to make a hybrid stump or place a post.
5. Understand the importance of the ferrule effect.
6. Indicate an endocrown and learn how to prepare it.

Pre-op
Microscopic view (12x) of 3 mesial canals after instrumentation and cleaning thanks to XP-endo instruments

Post-op
Microscopic view (12x) of 3 mesial canals after obturation with TotalFill® BC Points™ 30/.04 and TotalFill® BC Sealer™.

Dental Tribune International
ESSENTIAL DENTAL MEDIA

Dr. Gilberto Debelian
He has completed his specialization in Endodontics from the University of Pennsylvania, School of Dental Medicine, USA in 1991. He obtained his PhD at the University of Oslo, Norway in 1997. He is an Adjunct Visiting Professor at the post-graduate program in Endodontics, University of North Carolina and University of Pennsylvania, USA. Dr. Debelian has authored 3 chapter books, one book in Endodontics and written more than 60 scientific and clinical papers.
Now, everyone in your dental team can **SHOOT**!

**Ultra-Light**

**SIMPLE**

**Compact**

**Accurate**

**Intuitive**

**SHOFU Smart Digital EyeSpecial C-II**

- The only one true dental camera
- 8 automated pre-set dental modes
- Intuitive one-touch operation with built-in anti-shake
- Large LCD touchscreen with on-screen guide
- Fast auto-focusing capability and excellent depth of field
- Water and chemical resistance
- Registration and imprinting of patient ID
- Uncomplicated photo management system

For more information, simply contact us or your nearest **SHOFU** dealer.

**SHOFU DENTAL ASIA-PACIFIC PTE. LTD.**
10 Science Park Road, #03-12 The Alpha Science Park II, Singapore 117684
Tel (65) 6377 2722  Fax (65) 6377 1121  eMail mailbox@shofu.com.sg  website www.shofu.com.sg
Many edentulous patients wish to have their oral functions re-established with a fixed esthetic restoration. We can meet this request by combining implantology with dental CAD/CAM technology.

Full-arch implant-supported superstructures can be achieved by various methods. Depending on the bone quality and number of implants, the patient may either receive a fixed or removable implant restoration. If a fixed prosthesis is indicated, the superstructure may either be cemented or alternatively, screwed directly to the implant fixture, depending on the clinical situation. In the case described here, we opted for a cemented zirconium oxide bridge. Monolithic crowns were used in the posterior region. For the anterior region, the crowns were cut back and veneered. Translucent zirconium oxide (Zenostar® T, Wieland Dental) was utilized for the framework and IPS® e.max Ceram for the veneering of the anterior teeth. These materials allowed the desired strength and esthetics to be achieved.

Preoperative situation
When the patient came to our dental lab, she wore a classic full-arch denture in her upper jaw. She was unhappy about the esthetic appearance, functional qualities and the loose fit of the denture. Her oral condition was assessed with digital volume tomography (DVT) to confirm that adequate bone quantity was available to facilitate the anchorage of the implants. Although the placement of four implants would have provided adequate stability for a removable denture, the patient desired a fixed all-ceramic reconstruction. Having discussed the treatment options with her, we abandoned the idea of providing an implant-supported denture based on the "All-on-4" concept and instead chose to manufacture a fixed, implant-retained bridge.

Implant treatment and healing phase
On the basis of the DVT examination, seven implants (Replace CC, Nobel Biocare) were placed. An adequate primary stability of 30 to 35 Ncm was achieved. During the healing phase, the patient wore the existing denture that had been relined with soft silicone. After a six-month healing period, a satisfactory level of osseointegration was achieved, without any signs of bone resorption or inflammation. The implants were uncovered and gingiva formers inserted. Two weeks later, an impression was taken to transfer the position of the implants to the dental lab.

Framework fabrication
As the patient was satisfied with the shape and function of the temporary bridge, the model was scanned using a Zenotec® D800 lab scanner (Wieland Dental) and the temporary bridge designed with the shape dental design software. Milling was carried out in a Zenotec select milling unit (Wieland Dental) using a PMMA material (Telio® CAD).

Fig. 1: The seven implants in the edentulous jaw were to be connected to a fixed bridge made of zirconium oxide.

Fig. 2a and b: Digitized model with temporary restorations (above) and abutments (below).
The fully contoured shapes of the posterior teeth and the palatal surfaces of the anterior teeth were left unaltered to ensure a maximum level of strength in the final restoration. There was a risk that the abutments might shudder through as grey areas. For this reason, we decided to use translucent zirconium oxide. The layer thickness appeared to be adequate to mask the abutments.

**Milling**

The completed CAD design divides a basic crown framework into 10,000 to 20,000 coordinates and generates a harmonious surface texture and perfect marginal seal.

The completed design was transferred to the CAM unit. We use the V5 CAM version, which gives us the option to create output formats. The Zenocam® 3.2 format is our preferred output option because, in contrast to the open STL format, it delivers information on the specified cement gap, implant axes and restoration margins. The CAM software uses this information to calculate milling parameters that distinguish between the different areas of the restoration. For instance, when milling the restoration margins, the unit reduces the speed, instead of feed rate to prevent thin crown margins from breaking or fracturing. As a result, even wafer-thin cervical margins having a thickness of as little as 0.1 mm can be reliably milled and require only very little reworking after the sintering process.

In less sensitive areas, the unit uses a higher milling speed. After the output format has been entered, the milling strategy is chosen. In this case, a milling strategy using 2.5 mm, 1.0 mm and 0.7 mm bars was selected for the manufacture of the bridge. The option of using a 0.3 mm bar was not taken as it was not needed for the restoration in question.

Next, the job was placed in a virtual Zenostar® blank (Fig. 4). We decided to use a translucent, pre-shaded Zenostar® Zirconium oxide-disc in the shade T sun, because the posterior teeth from 14 to 16 and 24 to 26 were planned to be restored with monolithic zirconium oxide. The warm, reddish shade of the disc closely matches the selected tooth shade and allows the A–D shades to be recreated efficiently and in reproduction. Next, a sinter support structure was designed to allow the restoration to be sintered in an upper or lower position in the Programat® S sintering furnace. The sinter frame maintains distortion during sintering and is instrumental in achieving a high accuracy of fit in long-span objects. Finally, the program calculated the milling data in a process that took less than three minutes to finish.

Then, the milling operation was started. This process was achieved in a Zenotec select 52 milling unit that features 3 axes operation and an 8-disc material changer (Wieland Dental). The absolute precision with which this unit works is evident in the excellent milling results obtained on the occlusal and palatal surfaces and at the incisal edge (Fig. 5).

**Customizing the framework**

Once the milling was completed, the framework and the sinter support structure were separated using a 2.5 mm grit diamond disc. At the next step, the unsintered bridge was customized with special liquids using the infiltration technique. The range of Zenostar Color Zr liquids is perfectly suited for this purpose. These liquids are supplied in the standard shades of the A–D shade guide. Additionally, Effect shades are available for further customizations. We used Ze- nostar Color Zr in shades A2 and A3 as well as the grey violet Effect shade. To render the infiltration of the individual liquids visible, the virtually colorless liquids were rendered with a visualizer (Zenostar Visualiz®). First, the interior surfaces of the crowns and the tooth surfaces were infiltrated, followed by approx. 1 mm of the cervical margins, the fissures and the central areas of the palatal surfaces. Infiltration of all these aspects was achieved with Zenostar Color Zr A2 mixed with yellow Zenostar Visualiz® (Fig. 6). After that, the dentin area up to the incisal third was infiltrated with shade A2 mixed with red Visualiz® liquid. The incisal area of the anterior teeth and the cusps of the posteriors were customized with a diluted version of green Effect shade and Zenotec Coke Optimizer mixed with blue Visualiz® liquid (Fig. 7). It is essential to use a separate brush for each shade. After having been allowed to dry for two hours, the framework was sintered in a Programat® S sintering furnace.

After the sintering process, the restoration exhibited an excellent accuracy of fit, minimizing any adjustments by grinding, e.g. on the insides of the crowns. The advantages of the translucent zirconium oxide used were obvious at this stage. Due to the colouring liquids, the cervical and dentin areas were beautifully accentuated. The incisal areas exhibited a slight greyish translu- cent sheen, which should facilitate the subsequent layering procedure. Figure 8 shows the smooth transition of the shades. The simulation in figure 9 demonstrates how difficult it would have been for us to achieve the desired tooth shade if we had used opaque white zirconium oxide for the framework. Despite the high translucency of the zirconium oxide, the titanium abutments do not show through the framework.

**Individual framework refine- ment**

An optimum esthetic outcome is only achieved if the restoration exhibits ideal optical properties. A controlled brightness value, adequate saturation and translucency and minimized light reflection are essential to achieve a pleasing esthetic outcome.

If these parameters are met, the result will never be satisfactory; even if the restoration is veneered with ceramics. The result would simply be a restoration that looks good on the model but appears too bright in the mouth.

**Anterior area**

Staining the zirconium oxide prior to sintering is the first measure to control the light reflection effects. Application of the primer is the second measure. The bridge was veneered with IPS e.max Ceram. As the framework already exhibited a pleasing basic shade, we applied a mixture of the two types of ZirZer Clear and InciCal (70:30). ZirZer In- cial reduces the light reflection of zirconium oxide by approx. 10% in the anterior area. Due to the surface finish of the crowns, the light reflection of the Zirconium oxide 4 may be reduced. To mask the lines, IPS e.max ZirZer Liquid was added. The result was a mixture with a pleasing consistency, ensuring an even coating. After the firing process, the restoration exhibited a homoge- neous surface and an adequate level of translucency.
Custom-made titanium abutments produced in your own laboratory – with inLab MC X5 from Dentsply Sirona

By Dentsply Sirona

Dentsply Sirona’s CAD/CAM is extending the range of applications of its 5-axis milling unit inLab MC X5, with the production of custom-made one-piece titanium abutments with pre-fabricated connection geometries in authorized countries. With the latest version of the inLab Software 16.0, inLab users can now create implant supported prostheses that are even more closely matched to the individual needs of the patient.

Practitioners who are not prepared to accept any compromises in prosthetic quality turn to custom made abutments. These enable the creation of a tailor-made implant abutment for the individual patient, thereby making special allowances for the specific implant situation. In addition, they offer dental technicians an even better basis for standard abutments for the creation of a functional and esthetically pleasing dental prosthesis.

With the latest inLab software update 16.0 from Dentsply Sirona, inLab users can now design and mill custom-made one-piece titanium abutments in their own labs. With the 5-axis milling unit inLab MC X5, for the first time it is now possible, not only to manufacture restorations from inLab design data but also take design data from another CAD software via the open inLab CAM interface. The one-piece abutments are machined from PreFac®-abutment blanks from Medentika with prefabricated connection geometries.

Advantages for the dental lab

One major advantage for the dental laboratory is in the characteristics of the one-piece solution: although partially ceramic hybrid abutments on TiBases create optimum aesthetic results, only one-piece solutions are possible in certain clinical cases due to a lack of space, for example. The custom-made one-piece titanium abutment is the perfect solution in such cases, without requiring an additional jointing step. Moreover, inLab users can seamlessly proceed to the workflow and, in parallel to the milling process, virtually implant the designed abutment with the inLab CAD software so that further prosthetic treatment can be planned. This means that production control and the added value remain in the lab.

PreForm starter kit for inLab MC X5

The prerequisite for the milling of titanium preforms is the new inLab MC X5 starter kit for Medentika PreFac® abutments from Dentsply Sirona CAD/CAM. This comprehensive kit can be ordered from dealers in all authorized countries. It contains, for example, a preform holder that has been specially developed for inLab MC X5, new inLab MC X5 titanium milling tools, a special cooling lubricant additive (DentaLab), separate container tank and other accessories.

PreFac® titanium abutment blanks can be exclusively ordered from Medentika. For more information about these and other production options with inLab MC X5, visit www.sirona.com/inlab.

Dentsply Sirona at the IDS 2017

Visitors to the IDS can discover the whole world of dentistry at Dentsply Sirona. Dental technicians flock to the combined stand of Dentsply Sirona CAD/CAM, Dentsply Sirona Prosthetics and Dentsply Sirona Implants in Hall 11.2.

Dentsply Sirona
Sirona Straße 1
5071 Wals bei Salzburg, Austria
F +43 (0) 662 2450-540
T +43 (0) 662 2450-0
www.dentsplysirona.com

I would like to thank my assistants for their help.
Renfert: Making the dental technician’s work easy

By DTI

NEW YORK, N.Y., USA: Renfert is one of a record 42 German dental companies exhibiting their products at the Greater New York Dental Meeting (GNYDM). With the 100th anniversary of the Association of the German Dental Industry (VDDI) taking place simultaneously, the meeting is sure to have a celebratory tone.

Dental Tribune International spoke to Greg Luengen, head of Marketing and Product Management, about the appeal of the American market for Renfert.

What is the reputation of the German dental industry in the U.S. market?
Greg Luengen: Positive, I would say. Firstly, the claim “Made in Germany” has a lot of clout, and many German companies have been around for quite a while: Renfert, for example, just celebrated its 90th anniversary, which demonstrates a certain understanding of our customer base. To be fair, most German dental products are not on the low end of the price scale and cannot really be compared to some domestic manufacturers that prioritize price. However, customers are definitely willing to pay that little bit extra because of the benefits and advantages our products offer. Value for money is an argument that resonates throughout the world, not just in the U.S. That is probably the foremost reason that Renfert introduced its new slogan—“Making work easy”—this year. Through intelligent solutions, the performance, quality and durability of our products, and reliable service, we can help our customers’ work better and more efficiently.

How has the relationship between the German and American dental industries developed?
I conducted some research in this regard a few years ago and came to the conclusion that, through the drastic increase in the use of digital and social media, the ability and the desire to share information, views and opinions have grown immensely. Today, we can find out what dental technicians and dentists are doing in any part of the world. Such information allows companies like Renfert to respond more quickly to the needs of the different markets, and this ultimately results in a win-win situation for both the user and the industry.

How does Renfert regard the U.S. market?
The U.S. is very important to Renfert, one of our top five markets. It is so important that we have developed new products just for the American market, like the Basic eco sandblaster. This unit incorporates the same sandblasting technology as our other, larger units, is perfect for the smaller dental laboratory or practice, and comes at an extremely competitive price.

What is Renfert looking forward to exhibiting at GNYDM?
We are extremely excited to be showcasing our class-leading equipment, instruments and materials to an appreciative audience of dental professionals at GNYDM. We are particularly proud to be presenting our new SILENT compact and SILENT compactCAM dust collectors. Attendees will also be able to view the new Basic eco compact microsandblaster with powerful blasting technology, being offered at an attractive price-performance ratio.

At the Renfert booth, we will be giving live demonstrations of the EasyClean ultrasonic and SYMPRO detergent cleaning units.

Renfert: Making the dental technician’s work easy

NEW YORK, N.Y., USA: Renfert is one of a record 42 German dental companies exhibiting their products at the Greater New York Dental Meeting (GNYDM). With the 100th anniversary of the Association of the German Dental Industry (VDDI) taking place simultaneously, the meeting is sure to have a celebratory tone. Dental Tribune International spoke to Greg Luengen, head of Marketing and Product Management, about the appeal of the American market for Renfert.

What is the reputation of the German dental industry in the U.S. market?
Greg Luengen: Positive, I would say. Firstly, the claim “Made in Germany” has a lot of clout, and many German companies have been around for quite a while: Renfert, for example, just celebrated its 90th anniversary, which demonstrates a certain understanding of our customer base. To be fair, most German dental products are not on the low end of the price scale and cannot really be compared to some domestic manufacturers that prioritize price. However, customers are definitely willing to pay that little bit extra because of the benefits and advantages our products offer. Value for money is an argument that resonates throughout the world, not just in the U.S. That is probably the foremost reason that Renfert introduced its new slogan—“Making work easy”—this year. Through intelligent solutions, the performance, quality and durability of our products, and reliable service, we can help our customers’ work better and more efficiently.

How has the relationship between the German and American dental industries developed?
I conducted some research in this regard a few years ago and came to the conclusion that, through the drastic increase in the use of digital and social media, the ability and the desire to share information, views and opinions have grown immensely. Today, we can find out what dental technicians and dentists are doing in any part of the world. Such information allows companies like Renfert to respond more quickly to the needs of the different markets, and this ultimately results in a win-win situation for both the user and the industry.

How does Renfert regard the U.S. market?
The U.S. is very important to Renfert, one of our top five markets. It is so important that we have developed new products just for the American market, like the Basic eco sandblaster. This unit incorporates the same sandblasting technology as our other, larger units, is perfect for the smaller dental laboratory or practice, and comes at an extremely competitive price.

What is Renfert looking forward to exhibiting at GNYDM?
We are extremely excited to be showcasing our class-leading equipment, instruments and materials to an appreciative audience of dental professionals at GNYDM. We are particularly proud to be presenting our new SILENT compact and SILENT compactCAM dust collectors. Attendees will also be able to view the new Basic eco compact microsandblaster with powerful blasting technology, being offered at an attractive price-performance ratio.

At the Renfert booth, we will be giving live demonstrations of the EasyClean ultrasonic and SYMPRO detergent cleaning units.

Renfert: Making the dental technician’s work easy

NEW YORK, N.Y., USA: Renfert is one of a record 42 German dental companies exhibiting their products at the Greater New York Dental Meeting (GNYDM). With the 100th anniversary of the Association of the German Dental Industry (VDDI) taking place simultaneously, the meeting is sure to have a celebratory tone. Dental Tribune International spoke to Greg Luengen, head of Marketing and Product Management, about the appeal of the American market for Renfert.

What is the reputation of the German dental industry in the U.S. market?
Greg Luengen: Positive, I would say. Firstly, the claim “Made in Germany” has a lot of clout, and many German companies have been around for quite a while: Renfert, for example, just celebrated its 90th anniversary, which demonstrates a certain understanding of our customer base. To be fair, most German dental products are not on the low end of the price scale and cannot really be compared to some domestic manufacturers that prioritize price. However, customers are definitely willing to pay that little bit extra because of the benefits and advantages our products offer. Value for money is an argument that resonates throughout the world, not just in the U.S. That is probably the foremost reason that Renfert introduced its new slogan—“Making work easy”—this year. Through intelligent solutions, the performance, quality and durability of our products, and reliable service, we can help our customers’ work better and more efficiently.

How has the relationship between the German and American dental industries developed?
I conducted some research in this regard a few years ago and came to the conclusion that, through the drastic increase in the use of digital and social media, the ability and the desire to share information, views and opinions have grown immensely. Today, we can find out what dental technicians and dentists are doing in any part of the world. Such information allows companies like Renfert to respond more quickly to the needs of the different markets, and this ultimately results in a win-win situation for both the user and the industry.

How does Renfert regard the U.S. market?
The U.S. is very important to Renfert, one of our top five markets. It is so important that we have developed new products just for the American market, like the Basic eco sandblaster. This unit incorporates the same sandblasting technology as our other, larger units, is perfect for the smaller dental laboratory or practice, and comes at an extremely competitive price.

What is Renfert looking forward to exhibiting at GNYDM?
We are extremely excited to be showcasing our class-leading equipment, instruments and materials to an appreciative audience of dental professionals at GNYDM. We are particularly proud to be presenting our new SILENT compact and SILENT compactCAM dust collectors. Attendees will also be able to view the new Basic eco compact microsandblaster with powerful blasting technology, being offered at an attractive price-performance ratio.

At the Renfert booth, we will be giving live demonstrations of the EasyClean ultrasonic and SYMPRO detergent cleaning units.
Interview: “Around 50 per cent of children have cavities by 6 years of age”

By Brendan Day, DTI

With recent studies showing that more than four out of ten Australian children aged 5–10 have cavities affecting their primary dentition, it is clear that good oral health habits need to be practised from a very early age. Given that oral disease can cause potentially permanent damage, a preventative approach is essential. Dental Tribune Online spoke with Prof. David Manton, Chairman of the Australian Dental Association’s Oral Health Committee, about the importance of dental check-ups for children and why recent legislative changes in Australia may negatively affect this.

Dental Tribune Online: Prof. Manton, how many times should children be visiting the dentist each year?

Prof. David Manton: The regularity of visiting the dentist for children depends on their oral health. To start with, a child should visit a dentist within six months of the eruption of the first tooth, so around 12 months of age. This is to allow the dentist to examine the child’s mouth and discuss with the parents how to maintain their child’s oral health. This would include issues such as diet and oral hygiene. After that, the time between visits usually varies between six and 12 months, although some children may visit more frequently, such as a child at high risk of dental caries.

What are some of the main contributors to the poor oral health of Australian children?

The main factor affecting oral health in children is dental caries. Around 50 per cent of children have cavities by 6 years of age. The main causative factor is diet—primarily the regular consumption of sugars in the diet. These sugars can be obvious, like sugary sweets and lollies, but can also be hidden in food and drinks, such as soft drinks, dried and processed fruits, soy drinks and flavoured milk. The sugars encourage the overgrowth of decay-causing bacteria in the plaque on the teeth, and these produce acids that weaken the teeth and lead to caries.

Brushing teeth with fluoridated toothpaste decreases the amount of decay that occurs and improves gingival health, so a lack of brushing can lead to the opposite. Around one sixth of children will have teeth affected by developmental defects that may lead to an increased risk of decay, so early detection of these defects can help prevent caries developing.
The Child Dental Benefits Schedule (CDBS), which enables eligible recipients to access dental care for their children, has recently been lowered from a subsidy of A$1,000 per child over two years to A$700. Who will the changes to the CDBS primarily affect?

These changes to the CDBS mean that one in five children will not be able to have all their treatment needs met. For children with high dental care needs, this will mean that their parents will be out of pocket in many cases and may lead to children not receiving the care they deserve. While the Australian Dental Association was supportive of an adjustment to the cap based on the findings in the Report on the Third Review of the Dental Benefits Act 2008, there seems to be no evidence supporting a 30 per cent drop. It is unclear what will happen to children who need treatment costing more than A$700 over two years. Process needs to be put in place to ensure these children do not end up being part of long dental waiting lists in the public dental system.

How important is prevention in seeking a lifetime of good oral health?

The maintenance of oral health is a vital part of overall health. Oral diseases such as dental caries and periodontal disease often have in common the causality, an intervention study found. There is clear evidence that long-term exposure to an optimal level of fluoride results in diminishing levels of dental caries in both child and adult populations. The level of fluoride in drinking water supplies is also just 1.5 parts per million (ppm).

Which groups do non-fluoridated water affect most?

Simply put, communities without fluoridated water have a higher incidence of dental caries than those without. Furthermore, the percentage of dental caries patients was significantly higher in the collagen-binding activity group, the study found.

According to the researchers, the findings suggest a molecular mechanism for the interaction between chronic oral infections and geriatric disorders, such as stroke and cognitive impairment. In order to clarify the causality, an intervention study focused on oral care and the microbiota in CMB subjects would be of interest, they emphasised. As the current data supports the important influence of the oral microbiota on dental caries, they further called for improved collaboration between dental and medical researchers.

Researchers find link between oral bacteria, cerebral microbleeds and stroke

KYOTO, Japan: Cerebral microbleeds (CMBs) have attracted attention as mechanical significance of CMBs and the mechanisms of their production, an intervention study found. The study, titled “Oral cnm-positive Streptococcus mutans expressing collagen binding activity is a novel factor of cognitive impairment associated with CMBs and therefore may be linked to disorders such as stroke and dementia.”

In the study group, 94 per cent test- ed positive for S. mutans and 31 per cent for cnm-positive S. mutans, and 25 per cent showed collagen-binding activity associated with S. mutans. Magnetic resonance imaging of the brain detected CMBs in 73 participants (26 per cent). As for the dental examination, 31 per cent of the participants had dental caries and 28 per cent scored a Code 3 or higher on the Community Periodontal Index of Treatment Needs. The mean number of remaining teeth was 22.7 ± 7.5.

The analyses showed that cnm-posi- tive S. mutans was detected more often among participants with CMBs than those without. Furthermore, the percentage of dental caries patients was significantly higher in the collagen-binding activity group, the study found.

According to the researchers, the findings suggest a molecular mecha- nism for the interaction between chronic oral infections and geriatric disorders, such as stroke and cognitive impairment. In order to clarify the causality, an intervention study focused on oral care and the micro- flora in CMB subjects would be of interest, they emphasised. As the current data supports the important influence of the oral microbiota on dementia.

Evidence has repeatedly shown that long-term exposure to optimally fluoridated water results in decreased levels of dental caries in both children and adults. (Photograph: kruszyzna0/pixabay)

Interview: “Communities without fluoridated water have a higher incidence of dental caries”

By DTI

CAIRNS, Australia: Once a manda- tory measure, the fluoridation of lo- cal water supply in Queensland is no longer compulsory due to legislative measures put in place between 2012 and 2014. Due to pressure from anti- fluoridation campaigners, many lo- cal councils have chosen to abandon the addition of fluoride to water, despite its proven health benefits. Professor John Abbott is the Director of Clinical Dentistry at Cairns James Cook University and he recently spoke with Dental Tribune Interna- tional about this on-going issue.

DTI: What prompted the Queensland Government to make the fluoridation of wa- ter supply non-compulsory?

Professor Abbott: On 5 December 2007, the Labor government’s Premier, Anna Bligh, made it manda- tory that all water supply in Queens- land be fluoridated. However, in November 2012 the Liberal Party government reversed this decision. The reversal seemed to stem from consideration of the greater area that is called regional Queensland. There are many communities in Queens- land, including far north Queens- land, that never had fluoride in their water supply and there was quite a bit of unrest that water fluoridation had been forced onto these communi- ties.

What benefits does water fluoridation present?

Fluoride in the water supply is con- sidered by tertiary dental schools to be a very good public health initia- tive. There is clear evidence that long- term exposure to an optimal level of fluoride results in diminishing levels of dental caries in both child and adult populations. The level of fluo- ride in drinking water supplies is also just 1.5 parts per million (ppm).

Which groups does non-fluoridated water affect most?

Simply put, communities without fluoridated water have a higher inci- dence of dental caries.

There has been some discus- sion centring on ‘alternative solutions’ to compulsory wa- ter fluoridation. What type of solutions would these be?
HYPERSENSITIVITY DUE TO TOOTH EROSION CAN BE GONE WITHIN SECONDS* WITH COLGATE® SENSITIVE PRO-RELIEF™ TOOTHPASTE

The risks that carbonated soft drinks, alcoholic mixers and wine pose to your patients’ teeth are well-known – increased consumption of acidic food and drinks can lead to tooth erosion and hypersensitivity.

However, even your patients following a healthy lifestyle may be at risk due to the acidic nature of fruit juices and sports drinks.¹ Hypersensitivity results when the tiny dentine channels directly linking to nerves in the tooth become exposed and is associated with pain and discomfort triggered by heat, cold or touch.

Addressing hypersensitivity is crucial for providing relief to your patients.

COLGATE® SENSITIVE PRO-RELIEF™ TOOTHPASTE TARGETS HYPERSENSITIVITY FOR FAST PAIN RELIEF*²

The Pro-Argin™ Technology of Colgate® Sensitive Pro-Relief™ toothpaste physically seals dentine tubules with a plug that contains arginine, calcium carbonate and phosphate. The plug effectively reduces dentine fluid flow reducing sensitivity and relieving pain in seconds.*²,³

COLGATE® SENSITIVE PRO-RELIEF™ IS CLINICALLY PROVEN TO RELIEVE PAIN IN SECONDS*²

In a double-blind, parallel group study, 120 patients directly applied either Colgate® Sensitive Pro-Relief™ toothpaste, a regular desensitising toothpaste¹ or a regular toothpaste¹ to sensitive teeth. Change in hypersensitivity was assessed using air blast sensitivity scores, where a lower score indicates better pain relief.

Not only did Colgate® Sensitive Pro-Relief™ provide instant relief of dentine hypersensitivity, both immediately after direct application and after 3 days of use, but it also provided superior pain relief when compared with the other toothpastes.

### INSTANT AIR BLAST SENSITIVITY RELIEF IN VIVO

![Graph showing air blast sensitivity scores](Ayad et al. 2009b, Mississauga, Canada)

<table>
<thead>
<tr>
<th>Sensitivity relief</th>
<th>Baseline</th>
<th>Immediately</th>
<th>3 days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control with KNO₃ and NaF</td>
<td>![Graph](Ayad et al. 2009b, Mississauga, Canada)</td>
<td>![Graph](Ayad et al. 2009b, Mississauga, Canada)</td>
<td>![Graph](Ayad et al. 2009b, Mississauga, Canada)</td>
</tr>
<tr>
<td>Control 2 with MFP</td>
<td>![Graph](Ayad et al. 2009b, Mississauga, Canada)</td>
<td>![Graph](Ayad et al. 2009b, Mississauga, Canada)</td>
<td>![Graph](Ayad et al. 2009b, Mississauga, Canada)</td>
</tr>
<tr>
<td>Colgate® Sensitive Pro-Relief™ toothpaste</td>
<td>![Graph](Ayad et al. 2009b, Mississauga, Canada)</td>
<td>![Graph](Ayad et al. 2009b, Mississauga, Canada)</td>
<td>![Graph](Ayad et al. 2009b, Mississauga, Canada)</td>
</tr>
</tbody>
</table>

* p < 0.05 compared to baseline
• p < 0.05 compared to control

Recommend Colgate® Sensitive Pro-Relief™ to your patients suffering from hypersensitivity due to acidic tooth erosion – clinically proven to treat hypersensitivity and relieve pain fast.*²

References:

* When toothpaste is directly applied to each sensitive tooth for 60 seconds.
† Containing 5% potassium nitrate and 1450 ppm fluoride as sodium fluoride.
‡ Containing 1450 ppm fluoride as MFP.
I love it! A personal story by Dubai dental hygienist Raheleh Mahtabpour

I have always been very passionate about dental hygiene education and spreading oral health and hygiene awareness in schools in Dubai. Not only do I love the interaction with my patients, but I also continue to learn from them and with them every day. One topic has been of particular importance to me: individually trained oral prophylaxis. A healthier and happier life can be achieved through proper oral hygiene—if one knows how to do it.

I have been a dental hygienist for over 15 years. Originally from Iran, I started working in a clinic specializing in implantology and periodontics. After a while, I moved to Dubai to work at the Department of Health and Prevention in the UAE. I was with them for almost five years, gained excellent experience and worked with students. I twisted a change, so I moved to the largest dental clinic in Dubai.

After six years of working in a private clinic, I decided to take a short break, so moved to Canada for a while and experienced motherhood. I came back to Dubai with a new addition to the family.

I finished my degree in Iran 16 years ago. Iranians are hungry for new things related to dental hygiene and dentistry. Programmes there range from two to three years. After that, dental hygienists need to spend at least two years in the hospital to become a qualified professional. In the UAE, the schools in Iran ensure that we gain a great deal of exposure to patients. This might sound a bit biased, but when I came to Dubai, I saw myself as being a little bit more prepared than the other hygienists I met. Patient interaction and experience have always been very important.

Dental hygiene treatment in Iran is not different than in the rest of the world. We do the scaling, polishing, whitening and charting. In fact, we care about charting a great deal. We usually work with periodontists and our profession is truly appreciated. Oral hygiene does not only affect one’s teeth; it also influences a person’s overall physical and emotional health. By imparting good oral hygiene habits, we help patients live healthier and happier lives.

Today, I work at Dr. Michael’s Dental Clinic in the heart of Dubai. I think that the clinic is one of the most beautiful private practices in the Middle East. We have three clinics, one for orthodontics, one for general dentistry and one for paediatrics. Our clinic is surrounded by gardens; we have a beautiful atmosphere in the clinic. All of our patients feel welcome immediately.

My daily morning fun

Daily work starts at 8 a.m. in the morning. I take my daughter to kindergarten and then go to the clinic. I start preparing my brushes and my room. When the first patient comes in, I immediately begin discussing oral hygiene.

The session starts with a photograph. I then do the overall check-up and cancer screening, checking for anything abnormal and informing the dentist if necessary. After that, I perform a 15–20 minutes of ultrasound scaling and follow with hand scaling and polishing. Appointments usually last 1 hour. In fact, I might do the probing and charting in a separate appointment. The hygienist and dentist work closely together, discussing cases and referring patients to each other.

I love it!

I love the daily interaction with my patients. I have learnt so much from my patients and made many new friends. At the same time, I do
TODAY EXHIBITION GUIDE APP
Make exhibitor search a walkover

www.messeguide.today
Effect School Dental Health Program, step

towards making “Little Oral Health Champions”

#YearOfGiving

By Dr. Aparna Sharma, UAE

Introduction

Global dental health habits in our children can give them a lifetime of better health. Schools can play a key role in preventing or identifying children’s oral problems before they become serious and help families obtain timely health services that are accessible and affordable.

Little Smile Officers are in real need...

Children with severe untreated dental decay often are in pain, can't sleep at night, can't concentrate and get poor grades. Young children and children with special needs often are unable to communicate about their oral problems or pain. Teachers may notice a child having difficulty while completing tasks by showing the effects of pain – anxiety, fatigue, irritability, depression and withdrawal from normal activities. Children who have a toothache when they take tests are unlikely to score as well as children who are not distracted by pain. When children’s acute oral health problems are treated and they are not experiencing pain, their health problems are treated and they can concentrate on schoolwork. Children with severe untreated dental cavities, often leading to pain and discomfort.

Oral-trauma Crossing the world, 16-48% of children in the age range 6- to 12-years old are affected by dental trauma due to unsafe playgrounds, unsafe roads, Noma Noma is a gangrenous lesion that affects young children living in extreme poverty primarily in Africa and Asia. Lesions are severe gingival disease followed by necrosis (pre- mature death of cells in living tissue) of lips and cheeks. Many children affected by noma suffer from other infections such as measles and HIV.

Noma A gangrenous lesion that affects young children living in extreme poverty primarily in Africa and Asia. Lesions are severe gingival disease followed by necrosis (premature death of cells in living tissue) of lips and cheeks. Many children affected by noma suffer from other infections such as measles and HIV. Without any treatment, about 90% of these children die.

Cleft lip and palate Birth defects such as cleft lip and palate occur in about one per 500–700 of all births. This rate varies substantially across different ethnic groups and geographical areas.

Impact of poor oral health on physical, social and emotional health

Tooth decay is an infection caused by bacteria that are transmitted via saliva. Without proper care, the infection progresses to become a cavity.

Impact of poor oral health on physical, social and emotional health

Tooth decay is an infection caused by bacteria that are transmitted via saliva. Without proper care, the infection progresses to become a cavity. The provided services include screening, prophylaxis (cleaning), fluoride treatment, and sealants. This type of program will generally serve students in all grades.

Basic preventive and restorative dental care. Finally, once the program has finished providing services at school, there should be established protocol for how parents, guardians or concerned will be addressed.

How often and for how long will the program be at school site— for instance, once a year, or every two years, or some other arrangement?

For better impact the program should be conducted at least once every year. The program’s length at the school can vary based upon the number of students needed to be seen. To ensure that all children who sign up for the program receive treatment, we must present paper work to the school looking for words such as “entry allows” or “as time permits.” These words often indicate that the program is scheduled to be at the school for a set number of days even if not all the children who are signed up for care can be seen.

Children are the future pillars of our nation. As a healthcare provider we should always contribute for a betterment of society. With this positive step we can improve we can improve our children and give them a happy and healthy smile.

Participants wanted for trial testing to explore painless caries treatment

By DTI

BIRMINGHAM, Ala., USA: The University of Alabama at Birmingham School of Dentistry has announced that it will be offering patients with interventional caries a new, less painful treatment option as part of a new clinical trial. The new treatment, which entails infiltrating a preparation gel and then a liquid resin through a perforated plastic sheet between the teeth, allows dentists to treat cavities without administering local anesthesia or drilling, which is conventionally unavoidable to ac-

cess the cavity.

The resin infiltration system is a commercially available product made in Germany and approved by the Food and Drug Administration, but is mostly being used only in clinical trials in the U.S. The university’s clinical research center is conducting the largest U.S. clinical trial of this system, enrolling 150 patients in the study.

“When we develop cavities between teeth, sometimes we have to go through the tooth, and we end up damaging the tooth,” said Dr. Augusto Robles, assistant professor and director of the operative dentistry clinic at the University. “This new system allows us to skip the drilling and helps us preserve structural integrity.”

With the new procedure, the cavity is first cleaned by pushing a gel that prepares the surface to accept the resin infiltrant through the perforated sheet. The tooth is then filled by pushing a liquid resin through the perforated sheet. Finally, a dental curing light is then applied to the tooth to cure the resin.

Despite the apparent simplicity of the procedure, the treatment works only in between teeth or on smooth surfaces with small cavities. Some large lesions or those on the occlusal surfaces are not suited for this kind of system because the liquid resin cannot be used to build up shapes. Therefore, its application has to be very specific, Robles highlighted.

Dentists with patients interested in participating can advise their patients to make an appointment for a free 20-minute radiographic and screening assessment by email. Participation is free of charge.
practice management
Short-term gains…
long-term problems?
trends & applications
Vibration therapy in orthodontics:
Realising the benefits
industry report
From straightforward
to complex cases

ISSN 1868-3207
Vol. 1 • Issue 1/2016
ortho international magazine of orthodontics

EUROPEAN MAGAZINES
ortho international magazine of Orthodontics

1

ortho international magazine of Orthodontics

Shipping Address

Name

Address

Zip Code, City

Country

E-mail

Date, Signature

PayPal

Credit Card

Credit Card Number
Expiry Date
Security Code

SUBSCRIBE NOW!

F +49 341 48474 173
subscriptions@dental-tribune.com

www.dental-tribune.com
WHY JUST MASK SENSITIVITY?
SEE THE DIFFERENCE COLGATE® MAKES FOR PATIENTS

Repairs sensitive areas of the teeth and is 2X more effective.*¹

MASKING LIMITS RELIEF
Potassium-based toothpastes mask pain by desensitising the nerve, but leave dentin exposed

REPAIRING IS SUPERIOR WITH COLGATE® SENSITIVE PRO-RELIEF™
• Unique Pro-Argin™ technology works upon contact with saliva to build a calcium-rich layer
• Instant relief and 2X more effective*¹

Most patients who use Colgate® Sensitive Pro-Relief™ are able to enjoy life sensitivity-free†
For more information, visit colgateprofessional.com/cspr

*vs potassium-based toothpaste. †Patient Experience Study, EU 2015, IPSOS.
Implant-Supported Fixed Restorations for the Partially Edentulous Arch

By Prof. Gregor-Georg Zafiropoulos & Assoc. Prof. Moosa Abuzyada, UAE

When restoring a partially edentulous arch with an implant-retained fixed restoration (fixed partial denture, FPDs), several procedural steps may influence the fit and function of the framework. These include: 1) the correct transfer of the implant position, 2) the correct transfer of vertical height and maintenance of the maxillo-mandibular relationship, 3) the determination of an optimal occlusion, and 4) the selection of implant abutments with the correct shaping and angulation. The described method allows the accurate transfer of the implant position and the recording of the interocclusal relationship using transfer key and electroformed gold copings.

**Case**

A 62-year-old man with a partial edentulism of the left posterior mandible presented for implant placement and prosthetic restoration. Teeth #34–36 had been extracted due to root caries 5 years previously. Two screw cylinder implants (straight line, 3.75 mm diameter, 11.5-mm length, Dentegris, Duisburg, Germany) were placed manually at a torque of 35 Ncm in the areas of teeth #19 and #21, following a two-step surgical protocol.

The implants were uncovered 8 weeks after placement, system-specific healing abutments were placed, and a closed-tray impression was taken using a transfer system consisting of a titanium impression post (TImp) and a plastic impression coping (pickup, Dentegris, Fig. 1). For impression, a polyether material (Impregum; 3M ESPE, St. Paul, MN, USA) was used. To ensure that the titanium impression posts remained in the exact same position, they were left on the implants until the interocclusal relationship was recorded (1 day later).

In the dental laboratory, a final master cast was fabricated using system-specific implant analogs and a new set of TImps (Fig. 2A). The cast was used to fabricate for fabrication of a transfer key, resin copings were made on top of the TImps (pattern resin, GC America, Inc., Alsip, IL, USA) and connected to each other using a light-curing resin (Ivy pink transparent, Omnipant, Rodgau, Germany; Fig. 2B). The transfer key was placed on TImps in patient’s mouth and a bite registration was made in centric occlusion using pattern resin (Fig. 3). The TImps were then removed from the implants and the healing abutments were replaced. The cast was placed into the articulator using this transfer key and bite record. In the case presented here, customizable abutments (ITPB, platinum-iridium, Dentegris) were used casted with CoCr-alloy (Fig. 4A). Over the implant abutments, were fabricated 1) a resin transfer key (pattern resin, GC America, Inc., Alsip, IL) and 2) electroformed gold copings (AGCs, AGC Galvanogold, 0.25-mm thickness; Wieland, Pforzheim, Germany; Fig. 5A, B).

The master cast with the mounted implant abutments and AGCs in place was scanned, and a mock-up from clear poly(methyl methacrylate) (PMMA, Zenotec, Wieland, Pforzheim, Germany) as well as a temporary FPD from colored PMMA were milled (Fig. 4).

At the next clinical session, the implant abutments were mounted on the implants using the transfer key and torqued to 35 Nm, the AGCs were placed on the abutments (Fig. 5) and the fit of the abutments was assessed with x-rays. After the impression had been taken, the abutments were left in the patient’s mouth and the temporary FPD from colored PMMA was placed on them using temporary cement (Tempbond; Kerr, Orange, CA, USA, Fig. 5B).

In the dental laboratory, a final master cast was made using the mock-up and electroformed copings to transfer the position of the gold implant abutments (Fig. 6A). The metal framework was milled from a CoCr-alloy (Zenotec NP, Wieland, Pforzheim, Germany) and veneered with porcelain (Vintage MP; Shofu, Rastigen, Germany; Fig. 7A). After between, the gold copings were fixed into the framework (AGC Ceram, Wieland, Pforzheim, Germany). The final FPD was fixed over the implant abutments using a temporary cement.
the field of ceramic implantology. Current trends in dental implants include the use of ceramic implants due to their greater aesthetic appeal. The International Academy of Ceramic Implantology (IAOCI) is an association that supports research and dissemination of knowledge about ceramic implants.

### Discussion

Several clinical steps significantly influence the success of the restoration, including the accurate recording of the interocclusal relationship, the transfer of the correct implant position, occlusal forces and the passive fit of the framework. In the case described in this report, custom silicone impression copings were used to capture the abutment anatomy. This method was chosen over other traditional techniques, such as use of impression pastes. Although, the accuracy of the impression copings was not tested, the use of AGCs as a set-up procedure was shown to be an efficient and reliable method for the fabrication of ceramic FPDs.

### References


### Interview: “The future of ceramic implants is really bright for many reasons”

By DTI

**Dr. Sammy Noumbissi:** Ceramic implants have been born out of a desire for a material that would appear similar to natural teeth and be just as functional. They were a response to early concerns about the long-term stability and health effects of metal alloys being embedded in bone and exposed to the oral environment. Early ceramic implants were mostly made of one ceramic compound, such as alumina or zirconia. They were all monocristalline in composition and were intrinsically found to be vulnerable to functional stress or premature structural breakdown. Alumina was prone to fracture and zirconia displayed low temperature degradation and poor suitability to the high humidity in the oral environment. Starting in the mid-1980s, advances in manufacturing and technology led to the development of ceramic composites. These composites were made by combining specific and different bioceramics that were known to have unique physical and chemical properties. These advances created new and more structurally stable polycrystalline bioceramics with greatly improved functional properties. This is how we developed dental implants that are made of ceramic composites, such as alumina-toughened zirconia and hot isostatically-pressed yttria-stabilized zirconia. In terms of design, the early implants, for the most part, were one-piece designs. This was because during the initial testing of the implants, structural failures migrated to the connection area between the implants and the abutments. Around 2014, ceramic implant manufacturers started releasing two-piece cemented zirconia implants. This signaled a new era in ceramic implantology because the flexibility that was once only available with titanium implants had finally come to ceramic implants. More recently, two-piece, screw-retained ceramic implants with metal and metal-free screws have been developed, no longer limiting them to cementable restorative options.

What are some of the issues associated with ceramic implants, and are these negated with ceramic implants? Metal implants are well researched, documented and have been very successful. There is a multitude of implants on the market and with that has come along different manufacturing protocols. As a result, we have observed a steady increase in alloy elements added to titanium in order to improve its physical properties. The problems begin when the metal implant, highly alloyed or not, is subjected to functional stresses, galvanic corrosion, body fluids and the harsh...
oral environment. Galvanism is the most important, but often ignored problem. All dentists are taught in dental school not to mix dissimilar metals in the oral cavity—nevertheless, this rule is consistently violated with implants. We have implants connected to all kinds of alloyed abutments, screws, crowns and copings even when they come from the same manufacturer. Galvanic corrosion occurs and studies have shown that in the process, metal ions get released into the surrounding soft tissue, bone, lymph nodes and even distant organs. Corrosion also come from mechanical functional stresses that induce cracks and pitting of the metal and breaches in the oxide layer. Zirconia ceramic implants, alternately, do not conduct electricity or heat, are non-corrosive and retain very little biofilm and plaque in comparison to metals. Furthermore, studies have also shown better vascularization, soft-tissue health and apposition with zirconia in comparison to titanium.

What is the success rate of ceramic implants?

Ceramic implants today, in my experience and for many fellow ceramic implantologists, have the same success rate as titanium implants. They are now as versatile as metal implants thanks to the evolution in design, surface enhancement protocols and implant improvements. Various treatment modalities are applicable with ceramic implants. Immediate implant placement, immediate stabilization, full arch and full-mouth rehabilitation can be performed with excellent and predictable outcomes. However, believe that adopting ceramic implants should be accompanied by a minimum amount of training or shadowing from an experienced clinician, even if one has experience with titanium implants.

Given that ceramic implants are a viable alternative to titanium, why do many dental professionals still regard them with skepticism?

The early studies of ceramic implants were so difficult and controversial so much so that a stigma regarding their viability and functionality still persists. I would rather ask this question: “Why aren’t there more dentists placing ceramic implants despite evidence of their viability?” This is the case for a few reasons. Metal implants have a very strong background and the cost of manufacturing zirconia is still pretty high. All of the major implant manufacturers (with the exception of itanium) do not have a ceramic implant on the market, let alone in development. Furthermore, the cost of production and pricing of titanium implants have decreased, making them more accessible to dentists and patients. I would also add that dental materials are evolving very fast and dental schools and graduate programs are lagging in educating their students on the capabilities and applications of these new materials. I often have conversations with dental academicians, professors and new graduates and unfortunately, for the most part, there is a distorted view and misunderstanding of zirconia. To many, accepting zirconia as a restorative material is an easier exercise than recognizing it as an implant and implantable material, but I have seen this changing rapidly over the last couple of years.

Where do you see the field of ceramic implantology heading?

The future of ceramic implants is really bright for many reasons. Patients increasingly ask for safer, less invasive solutions, as well as metal-free alternatives for teeth repair or replacement. Dental attitudes and understanding of zirconia and bioceramics are slowly, but steadily evolving, with a definite shift toward biological and inert materials. There has also been a shift in the healthcare industry towards wellness, wellbeing and providing therapies that have little to no side effects. As I previously mentioned, some of the largest players in the implant industry are incorporating or have already adopted ceramic implants as their product line, either by development or by corporate acquisitions. A quiet, but major shift is happening in implant dentistry.

What prompted you to establish the IAOCI?

The IAOCI was created to provide a platform where ceramic implant adopters and believers can exchange ideas, experiences and engage in clinical and scholarly conversation. The other primary objective was to reach out and help our colleagues better understand bioceramics and realize that metal-free implants are a viable and proven alternative. With the help of our supporters and through our other educational activities, we plan to establish a research fund in 2017 to support graduate dental students and residents who elect to conduct projects involving ceramic implants.

The IAOCI will be hosting its Sixth Annual World Congress in Miami, Florida. What can dental professionals expect from the event?

We are fortunate, honored and privileged to host Prof. Sami Sandhaus, a pioneer and forefather of ceramic implantology, as our keynote speaker. The theme of our congress in February 2017 is “Evidence-Based Ceramic Implantology—Where Are We Today?” For three days, the congress will host a gathering of the world’s foremost authorities in ceramic implantology and dental bioceramics. Our speakers will share data gathered over 10, 15 and even 20 years regarding ceramic implants. They will also cover zirconia as an implant material, its behavior under function, its biocompatibility and superhydrophilic properties, and the lack of galvanic activity, corrosion and ion release in ceramic implants. We will also be offering surgical and prosthetic workshops on implant systems from the top three industry players. This is a great opportunity for current users, non-users and even skeptics to come and listen to 15 world-renowned and published experts present and share their experiences and expertise around ceramic implants.

Thank you for the interview.

Interview: “Implant failure is a failure for both the dentist and the patient”

By Marc Chalupsky, D1

Dr. and Estoiny obtained his master’s degree in endodontics in 1991 from Tishreen University in Syria. Originally from Syria, Dr. Iyad Estoiny has been practicing endodontics in the heart of Dubai for over 10 years. He is the founder of GMCClinic in Dubai, which is well known for combining the latest technology and techniques with an unrivaled level of patient care. With a focus on endodontics and root canal therapy, Dr. Estoiny and his team ensure that every patient receives the best care possible.

Dr. Iyad Estoiny: I received my BDS in 1991 from Tishreen University in Syria. There are four dental schools in Syria, along with many practitioners. A number of Syrian dentists have moved to the UAE because of their good dental knowledge and patient care. Unfortunately, dental education is still excellent in Syria.

Dr. Iyad Estoiny, GMMClinic (on the left)

The Dental Tribune Middle East & Africa Edition  |  2/2017

As an implant specialist, what do you think about prevention?

There does not seem to be a strong connection between implantology and prevention at first. But just look at the problem of peri-implants. One needs to determine the correct sizes and give proper instructions.

As a bacterial problem and thus one must give clear instructions for cleaning, which involves interdental brushes and mouthwashes. Prevention is always the golden rule for any implant. If I do not see good oral hy-
New implant releases antimicrobial drugs to fight infections

By OTI

LEUVEN, Belgium: Bacterial and fungal pathogens can form a biofilm on dental implants that is resistant to antimicrobial drugs like antibiotics. As a result, these implants pose a significant risk for infection. A multidisciplinary team of researchers at KU Leuven in Belgium has developed a dental implant that gradually releases such drugs from an integrated reservoir. The antimicrobial liquid could help prevent and fight infections.

“Our implant has a built-in reservoir underneath the crown of the tooth,” explained lead author Dr Kaut De Cremer. “A cover screw makes it easy to fill this reservoir with antimicrobial drugs. The implant is made of a porous composite material, so that the drugs gradually diffuse from the reservoir to the outside of the implant, which is in direct contact with the bone cells. As a result, the bacteria can no longer form a biofilm.”

In the laboratory, the implant was subjected to various tests for use with chlorhexidine, a universal mouthwash with a powerful antimicrobial effect. The study shows that the streptococcus mutans bacterium, a major contributor to tooth decay, is prevented from forming a biofilm on the surface of the implant when the reservoir is filled with the mouthwash. Furthermore, biofilms that were grown beforehand on the implant could be eliminated in the same way. This indicates that the implant would be effective in terms of both preventing and curing infections. This study titled “Controlled release of chlorhexidine from a mesoporous silica containing multi-corrosive titanium dental implant prevents microbial biofilm formation”, was published online in January in Volume 33 of the European Cells and Materials journal.

THE TENTH ANNUAL AMERICAN ACADEMY OF IMPLANT DENTISTRY

MaxiCourse®- UAE 2017 – 2018 Starts May 2017

In Fulfillment of the Educational Requirement for the Examination

For Associate Fellow Membership and Fellowship for the American Academy of Implant Dentistry

The Faculty are as follows:

Dr. Shankar Iyer, USA
Diplomate, AAD, Maxi-Course RIAK, Diplomate AAI
Director, AAID Maxi Course® Philadelphia, PA

Dr. William Locante, USA
Diplomate American Board of Prosthodontics, Fellow, American Academy of Implant Dentistry

Dr. Jaime Locaste, USA
Director of the Graduate Program in Implantology, Fellow, American Academy of Implant Dentistry

Dr. William Locante, USA
Diplomate of AAD
Fellow, American Academy of Oral Implantology

Dr. Robert Monsoncito, USA
Diplomate of AAD
Fellow, American Academy of Oral Implantology

Dr. Frank Laflar, Jr, USA
Diplomate, American Board of Oral Implantology
Fellow, American Academy of Implant Dentistry

Dr. John Moshofsky, USA
Diplomate, American Board of Oral Implantology Fellow, American Academy of Implant Dentistry

Dr. Kim Gowey, USA
Diplomate, ABOI
Fellow, American Academy of Implant Dentistry

Dr. Burnee Dunmon, USA
Fellow, American Academy of Implant Dentistry

Dr. Jason Kim, USA
Director, AAID

Dr. Omer Bandy, USA
Fellow, AAID

Dr. Stuart Orton-Jones, UK
Diplomate, American Board of Oral Implantology
Fellow, American Academy of Implant Dentistry

Dr. Philippe Bardes, France
Fellow, American Academy of Implant Dentistry

Dr. Natalie Wong, Canada
Diplomate, American Board of Oral Implantology
Fellow, American Academy of Implant Dentistry

Dr. Jonathan Kandhawal, India
Fellow, Asian Academy of Implant Dentistry

Dr. Hyad Abdulbash, Lebanon
Diplomate American Board of Oral Implantology
Fellow, AAD

Fellow, Academy of Osseointegration, Boston University Dental School

MaxiCourse® - Advantage:

• 108 hours of comprehensive lectures, live surgeries, demonstration and hands-on sessions.

• In-depth review of surgical and prosthetic protocols.

• Sessions stretch across 5 modules of 6 days. Each session is always inclusive of a weekend.

• Curriculum taught by over 18 faculty & speakers from the International Community who are amongst the most distinguished names in implantology.

• Certificate of completion awarded by the American Academy of Implant Dentistry.

• Non-commercial, non-sponsored course covering a wide spectrum of implant types and systems.

• Hands-on patient treatment under direct AAD faculty supervision.

• Membership for AAD awarded for 2017 - 2018

Dates:
Module 1 May 1st – 6th 2017
Module 2 July 26th – 31th 2017
Module 3 August 28th – September 2nd 2017
Module 4 November 1st – 6th 2017
Module 5 January 25th – 30th 2018

Registration:
Pre-Registration is Mandatory as it is a limited Participation Program.
For further information and registration details visit website: www.cappmea.com

e-mail: events@cappmea.com or call: +97143616174

VERSAILLES DENTAL CLINIC

New implant releases antimicrobial drugs to fight infections

By OTI

LEUVEN, Belgium: Bacterial and fungal pathogens can form a biofilm on dental implants that is resistant to antimicrobial drugs like antibiotics. As a result, these implants pose a significant risk for infection. A multidisciplinary team of researchers at KU Leuven in Belgium has developed a dental implant that gradually releases such drugs from an integrated reservoir. The antimicrobial liquid could help prevent and fight infections.

“Our implant has a built-in reservoir underneath the crown of the tooth,” explained lead author Dr Kaut De Cremer. “A cover screw makes it easy to fill this reservoir with antimicrobial drugs. The implant is made of a porous composite material, so that the drugs gradually diffuse from the reservoir to the outside of the implant, which is in direct contact with the bone cells. As a result, the bacteria can no longer form a biofilm.”

In the laboratory, the implant was subjected to various tests for use with chlorhexidine, a universal mouthwash with a powerful antimicrobial effect. The study shows that the streptococcus mutans bacterium, a major contributor to tooth decay, is prevented from forming a biofilm on the surface of the implant when the reservoir is filled with the mouthwash. Furthermore, biofilms that were grown beforehand on the implant could be eliminated in the same way. This indicates that the implant would be effective in terms of both preventing and curing infections. This study titled “Controlled release of chlorhexidine from a mesoporous silica containing multi-corrosive titanium dental implant prevents microbial biofilm formation”, was published online in January in Volume 33 of the European Cells and Materials journal.
By Dr. Stacy Rigghelli, USA & L. Douglas Knight, USA

Functional and Cosmetic Excellence (FACE TM) is an approach to orthodontics that establishes measurable treatment goals for six elements that form the basis of comprehensive, interdisciplinary, high-quality orthodontic care: • Functional occlusion • TMJ health • Facial balance • Optimal dento-gingival esthetics (smile design) • Periodontal health • Stability

For each of these goals, the originators of the FACE TM discipline have defined specific elements that create a framework for the systematic evaluation of the esthetic and functional needs of each patient and a method to assess treatment results. These treatment goals are supported by reputable studies published in well-respected, peer-reviewed journals. Sharing these goals and the means to achieve them with an interdisciplinary team—the orthodontist, the dentist and/or other specialist(s)—provides you, the orthodontist, an opportunity to work with esteemed colleagues to create outstanding results for beauty, health and function.

Building successful practices is an important side benefit of this approach. Developing the skills required to manage and function within FACE Tx interdisciplinary treatment teams increases the complexity of cases one can treat. The collaborative interaction with experts in their respective fields (orthodontists, periodontists, cosmetic and general dentists and surgeons), who ascribe to the same principles of tooth positioning and jaw function, creates a knowledge base to treat to predictable, on-time, optimal results while meeting and/or exceeding patients’ expectations. As a result, one’s referral network expands with resultant practice growth.

Worldwide Program of Instruction
FACE Tx offers one of the world’s only postgraduate interdisciplinary continuing education programs. Offered in numerous countries to university-trained orthodontists, it provides didactic instruction and hands-on experience. Through a series of 5 to 7 one-week sessions, a team of certified educators and practitioners convey this unique curriculum. The associated FACE Tx franchise incorporates a lifetime learning forum for thousands of doctors who have adopted FACE Tx principles to their practices.

The FACE Tx teaching staff builds on each participating clinician’s knowledge base. The full-time faculty—Dr. Jorge Ayala (Santiago, Chile), Jeffrey McChord (New York, USA, Straty Rigghelli (California, USA), and Carole Burstyn (Vancouver, USA)—will manage active private practices and have extensive educational and clinical experience. The teaching faculty comprises considerable years of skills and knowledge to formulate the FACE Tx approach to diagnosis, treatment planning and execution.

Defining Functional Occlusion, Smile Esthetics and Facial Balance
A number of orthodontic disciplines specify functional occlusion as a primary treatment goal, but few articulate its importance in treatment strategy and execution. While functional occlusion serves as the foundation for the FACE Tx approach, the discipline further differentiates itself by integrating facial balance with dento-gingival esthetics for a comprehensive approach to diagnosis, treatment planning and execution. Dr. Renato Cocconi and Dr. Sergio Martin-Grimaldi define functional occlusion by what it is as well as what it is not. (See above.)

While functional occlusion serves as the foundation for the FACE Tx approach, the discipline further differentiates itself by integrating facial balance with dento-gingival esthetics for a comprehensive approach to diagnosis, treatment planning and execution. Dr. Renato Cocconi and Dr. Sergio Martin-Grimaldi define functional occlusion by what it is as well as what it is not. (See above.)

While functional occlusion serves as the foundation for the FACE Tx approach, the discipline further differentiates itself by integrating facial balance with dento-gingival esthetics for a comprehensive approach to diagnosis, treatment planning and execution. Dr. Renato Cocconi and Dr. Sergio Martin-Grimaldi define functional occlusion by what it is as well as what it is not. (See above.)

While functional occlusion serves as the foundation for the FACE Tx approach, the discipline further differentiates itself by integrating facial balance with dento-gingival esthetics for a comprehensive approach to diagnosis, treatment planning and execution. Dr. Renato Cocconi and Dr. Sergio Martin-Grimaldi define functional occlusion by what it is as well as what it is not. (See above.)

When the FACE Tx Course Teaches
During the comprehensive one- to two-year FACE Tx program instruction, participants develop a solid foundation of knowledge and skills in the following areas that is clinically practical: • In-depth evaluation of joint function and occlusion • Mounting models with the most up-to-date instrumentation in simulating patients’ jaw movements • Latest analytical techniques to assess facial balance and esthetic smile design • Multidisciplinary case diagnosis and computer assisted treatment planning (VTO) • Efficient and simple treatment mechanics with self- ligating appliances • Establishing one’s own interdisciplinary network • Treatment and practice management strategies and marketing techniques to enhance one’s interdisciplinary network, and • Knowledge of the type patients one can treat successfully and language to use that will offer patients choices

The FACE Tx teaching faculty shares proven techniques about how to adapt course instruction to clinical practice. There are several keys to successful treatment outcomes: 1) See everything before you begin.

Figure 1a-d. The elements of a mutually protected occlusion: (a) optimal overjet and overbite in centric occlusion; (b) right working excursion; (c) right balancing excursion; (d) right protrusive excursion

PUBLISHED IN DUBAI

ORTHOTRIBUNE
The World’s Orthodontic Newspaper • Middle East & Africa Edition

Functional & Cosmetic Excellence:
Revitalization of a Proven Treatment Philosophy

The FACE Tx teaching staff builds on each participating clinician’s knowledge base. The full-time faculty—Dr. Jorge Ayala (Santiago, Chile), Jeffrey McChord (New York, USA, Straty Rigghelli (California, USA), and Carole Burstyn (Vancouver, USA)—will manage active private practices and have extensive educational and clinical experience. The teaching faculty comprises considerable years of skills and knowledge to formulate the FACE Tx approach to diagnosis, treatment planning and execution.

Defining Functional Occlusion, Smile Esthetics and Facial Balance
A number of orthodontic disciplines specify functional occlusion as a primary treatment goal, but few articulate its importance in treatment strategy and execution. While functional occlusion serves as the foundation for the FACE Tx approach, the discipline further differentiates itself by integrating facial balance with dento-gingival esthetics for a comprehensive approach to diagnosis, treatment planning and execution. Dr. Domingo Martin defines functional occlusion by what it is as well as what it is not. (See above.)

While functional occlusion serves as the foundation for the FACE Tx approach, the discipline further differentiates itself by integrating facial balance with dento-gingival esthetics for a comprehensive approach to diagnosis, treatment planning and execution. Dr. Domingo Martin defines functional occlusion by what it is as well as what it is not. (See above.)

While functional occlusion serves as the foundation for the FACE Tx approach, the discipline further differentiates itself by integrating facial balance with dento-gingival esthetics for a comprehensive approach to diagnosis, treatment planning and execution. Dr. Domingo Martin defines functional occlusion by what it is as well as what it is not. (See above.)

While functional occlusion serves as the foundation for the FACE Tx approach, the discipline further differentiates itself by integrating facial balance with dento-gingival esthetics for a comprehensive approach to diagnosis, treatment planning and execution. Dr. Domingo Martin defines functional occlusion by what it is as well as what it is not. (See above.)

While functional occlusion serves as the foundation for the FACE Tx approach, the discipline further differentiates itself by integrating facial balance with dento-gingival esthetics for a comprehensive approach to diagnosis, treatment planning and execution. Dr. Domingo Martin defines functional occlusion by what it is as well as what it is not. (See above.)

While functional occlusion serves as the foundation for the FACE Tx approach, the discipline further differentiates itself by integrating facial balance with dento-gingival esthetics for a comprehensive approach to diagnosis, treatment planning and execution. Dr. Domingo Martin defines functional occlusion by what it is as well as what it is not. (See above.)

While functional occlusion serves as the foundation for the FACE Tx approach, the discipline further differentiates itself by integrating facial balance with dento-gingival esthetics for a comprehensive approach to diagnosis, treatment planning and execution. Dr. Domingo Martin defines functional occlusion by what it is as well as what it is not. (See above.)

While functional occlusion serves as the foundation for the FACE Tx approach, the discipline further differentiates itself by integrating facial balance with dento-gingival esthetics for a comprehensive approach to diagnosis, treatment planning and execution. Dr. Domingo Martin defines functional occlusion by what it is as well as what it is not. (See above.)

While functional occlusion serves as the foundation for the FACE Tx approach, the discipline further differentiates itself by integrating facial balance with dento-gingival esthetics for a comprehensive approach to diagnosis, treatment planning and execution. Dr. Domingo Martin defines functional occlusion by what it is as well as what it is not. (See above.)

While functional occlusion serves as the foundation for the FACE Tx approach, the discipline further differentiates itself by integrating facial balance with dento-gingival esthetics for a comprehensive approach to diagnosis, treatment planning and execution. Dr. Domingo Martin defines functional occlusion by what it is as well as what it is not. (See above.)

While functional occlusion serves as the foundation for the FACE Tx approach, the discipline further differentiates itself by integrating facial balance with dento-gingival esthetics for a comprehensive approach to diagnosis, treatment planning and execution. Dr. Domingo Martin defines functional occlusion by what it is as well as what it is not. (See above.)

While functional occlusion serves as the foundation for the FACE Tx approach, the discipline further differentiates itself by integrating facial balance with dento-gingival esthetics for a comprehensive approach to diagnosis, treatment planning and execution. Dr. Domingo Martin defines functional occlusion by what it is as well as what it is not. (See above.)

While functional occlusion serves as the foundation for the FACE Tx approach, the discipline further differentiates itself by integrating facial balance with dento-gingival esthetics for a comprehensive approach to diagnosis, treatment planning and execution. Dr. Domingo Martin defines functional occlusion by what it is as well as what it is not. (See above.)

While functional occlusion serves as the foundation for the FACE Tx approach, the discipline further differentiates itself by integrating facial balance with dento-gingival esthetics for a comprehensive approach to diagnosis, treatment planning and execution. Dr. Domingo Martin defines functional occlusion by what it is as well as what it is not. (See above.)

While functional occlusion serves as the foundation for the FACE Tx approach, the discipline further differentiates itself by integrating facial balance with dento-gingival esthetics for a comprehensive approach to diagnosis, treatment planning and execution. Dr. Domingo Martin defines functional occlusion by what it is as well as what it is not. (See above.)

While functional occlusion serves as the foundation for the FACE Tx approach, the discipline further differentiates itself by integrating facial balance with dento-gingival esthetics for a comprehensive approach to diagnosis, treatment planning and execution. Dr. Domingo Martin defines functional occlusion by what it is as well as what it is not. (See above.)

While functional occlusion serves as the foundation for the FACE Tx approach, the discipline further differentiates itself by integrating facial balance with dento-gingival esthetics for a comprehensive approach to diagnosis, treatment planning and execution. Dr. Domingo Martin defines functional occlusion by what it is as well as what it is not. (See above.)
Avoiding common problems in tooth extractions

By Dr Kamis Gaballah, UAE

The last two decades have seen significant advances in restorative techniques and materials for dentistry. The latter, along with community-based preventive measures that aim to reduce the incidence of caries, have resulted in many patients living with functional teeth for a longer period. Yet, extraction of teeth forms the considerable bulk of the workload in oral surgeries owing to several factors, including the late presentation of patients with advanced dental disease, the presence of symptomatic impacted teeth, such as third molars, and the need to extract teeth for orthodontic or orthognathic treatment.

The extraction of teeth varies greatly based on the type of patient who is undergoing the procedure. For example, elderly patients with significant comorbidities and on a complex combination of medications as compared with young healthy individuals render the procedure complicated and require much more preparation with modifications during and after patient management. Additionally, extractions can range from a single, fully erupted tooth with favourable morphology to multiple misaligned, impacted teeth or teeth with challenging morphology. Local anatomy, such as tooth proximity to the nerve, maxillary sinus and tuberosity, also plays a significant role. These variations usually dictate who is to perform the extraction, as many general practitioners deal with less complicated cases of dental extraction in individuals regarded as healthy patients and may not feel comfortable operating on medically complex patients.

Complex extraction cases have been linked to a higher rate of postoperative morbidities in comparison to simpler extractions. Thus, a cautious and systematic approach should be adopted that includes a detailed preoperative assessment to predict the potential difficulties that might arise during extraction. The documentation of all complicating risk factors along with their potential importance is crucial and should be included in the informed consent. In the following article, other useful tips will be provided that are not usually included in traditional textbooks or lecture notes to help general practitioners to perform safer extractions.

Conclusion

The FACE Tx philosophy incorporates comprehensive diagnosis and treatment planning, efficient treatment mechanics and the latest orthodontic advancements for treating each patient’s dental, facial and gnathological systems. Its aim is to collaborate between the goals of orthodontics and comprehensive dentistry that incorporates interdisciplinary coordination. This approach expands the network of professionals who share principles of tooth positioning and jaw function. Such collaboration greatly strengthens one’s referral base as these colleagues understand the value of the orthodontic specialty and the specific value of FACE Tx. It promotes the viability of the orthodontic specialty through the development and maintenance of viable practices that combine function with beauty. The ultimate aim of FACE Tx is to foster excellence in orthodontic patient care and treatment through education, research and collaboration.

Shady Righellis DDS, Oakland

Dr Righellis graduated from UELA Dental School and received his orthodontic specialty certification from University of California, San Francisco. He maintains a private practice and serves as an associate clinical professor at the University of the Pacific, and University of California, San Francisco. Dr Righellis is a diplomate of the American Board of Orthodontics, an associate editor for the American Journal of Orthodontics and lectures domestically and internationally on excellence in clinical orthodontics.

By Dr Kamis Gaballah, UAE

The last two decades have seen significant advances in restorative techniques and materials for dentistry. The latter, along with community-based preventive measures that aim to reduce the incidence of caries, have resulted in many patients living with functional teeth for a longer period. Yet, extraction of teeth forms the considerable bulk of the workload in oral surgeries owing to several factors, including the late presentation of patients with advanced dental disease, the presence of symptomatic impacted teeth, such as third molars, and the need to extract teeth for orthodontic or orthognathic treatment.

The extraction of teeth varies greatly based on the type of patient who is undergoing the procedure. For example, elderly patients with significant comorbidities and on a complex combination of medications as compared with young healthy individuals render the procedure complicated and require much more preparation with modifications during and after patient management. Additionally, extractions can range from a single, fully erupted tooth with favourable morphology to multiple misaligned, impacted teeth or teeth with challenging morphology. Local anatomy, such as tooth proximity to the nerve, maxillary sinus and tuberosity, also plays a significant role. These variations usually dictate who is to perform the extraction, as many general practitioners deal with less complicated cases of dental extraction in individuals regarded as healthy patients and may not feel comfortable operating on medically complex patients.

Complex extraction cases have been linked to a higher rate of postoperative morbidities; therefore, a cautious and systematic approach should be adopted that includes a detailed preoperative assessment to predict the potential difficulties that might arise during extraction. The documentation of all complicating risk factors along with their potential importance is crucial and should be included in the informed consent. In the following article, other useful tips will be provided that are not usually included in traditional textbooks or lecture notes to help general practitioners to perform safer extractions.

During clinical examination, it has been proven useful to observe the patient’s build. Tall and muscular individuals tend to have a long ramus with a higher mandibular foramen, and this increases the possibility of failure of the inferior dental nerve block procedure if the former is not taken into account when determining the height of the injection site. This can be added by tracing the inferior dental canal (IDC) to the mandibular foramen in the preoperative panoramic radiograph. The teeth of such individuals may also have...
The resistance of hard tissue should be expected, particularly if maxil- lar third molars are being extracted, as the potential force of the buccal cortex and the tuberosity is relatively com- mon when excessive force is applied with dental forceps. Fracture of the tuberosity may produce irregular sharp bony boundaries, significant soft-tissue lacerations, and potentially an oroantral fistula. If such risk fac- tors are identified, tooth sectioning should be followed by elevation of roots with dental luxatomes instead of traditional elevators or forceps, which are known to deliver much higher force to the alveolar bone.

The indications for the extraction of impacted lower third molars (LM3) have been the subject of a stand- ing debate. Surgical procedures for the extraction of unerupted LM3 are associated with a high incidence of morbidity. This includes pain, swelling and the possibility of temporary or permanent nerve damage, result- ing in altered sensation of the lip, chin, tongue, or tooth. Damage to the inferior dental nerve (IDN) is a well-known complication of surgical extraction of deeply impacted LM3. It should be acknowledged that this is not simply a loss of sensation, as the damaged nerve can be responsible for a number of abnormal sensa- tions, including sharp pain and ab- normal response to stimuli, such as the perception of a light touch as a sharp stab. This has a signifi- cant impact on quality of life for many patients.

Injury to the IDN may occur from compression of the nerve by bone indirectly by forces transmitted by the root and surrounding bone dur- ing elevation or directly by surgical instruments, such as elevators. The nerve may also be transected by rotary instruments or during ex- traction of a tooth whose roots are notched or perforated by the IDN. The risk factors for INJ injury dur- ing extraction of LM3 are shown in Table 1.

Preoperative radiographic investiga- tion, including intraoral images, such as occlusal radiographs, pan- ramic views of the jaws, and conven- tional CT or CBCT scans, should be noted that predicting signs in radiographs only indicate that there is an increased risk of nerve damage associated with the extraction of the crown of the tooth. However, they cannot actually prevent the nerve injury if the tooth is to be extracted. The effective strategies that may avoid or minimise the risk of injury to the IDN can be collec- tively categorised into two main sets. The first is the preoperative workup, which should include critical assess- ment of the need to extract the third molar, clinical examination and radiographic assessment, and the second is intraoperative measures, including proper selection of local anaesthetic agent, the injection tech- nique, modification of the surgical procedure and measures to reduce the degree of potential injury to the nerve.

Most literature published in the last decade has given us sufficient evi- dence to suggest a significant risk of damage to both the inferior dental and the lingual nerve owing to the nerve block procedure.

This injury may be related to the pharmacological properties of the agent itself or the injection tech- nique. Studies have shown that the lingual nerve is affected approxi- mately twice as often as the IDN, and one reason for this may be the fasicu- lar pattern of the region where the injection is given. It also appears that about half of patients feel an electric shock sensation during injection.

There is a higher incidence of report- ing of nerve injury after the use of artic- aine and prilocaine. Although the reason for this remains unknown, it has been suggested that this may be because they are 4-6% solutions, whereas the other commonly used anaesthetics have lower concen- trations. Others associate the damage with the neurotoxicity of 4% articaine and 2.5% prilocaine. Hence, it is recommended that the use of such anaesthetics be limited to local infiltration. It has been claimed that needle contact with a nerve felt by the patient as an electric shock is related to injection injury. An obvious explanation is that the possibility of mechanical in- jury to the nerve is more likely in the case of multiple repeated attempts at the inferior dental nerve block procedure. Therefore, it is crucial that the operator achieve optimal pain control with minimal episodes of injection with minimal doses of anaesthetic agent.

The surgery should be planned ac- cording to the information obtained from the preoperative assessment process. The procedure itself should aim to minimise the manipulation around the IDC. Both should include the carefully planned access, tooth sectioning and elevation techniques. In many instances, the extraction of the whole tooth may carry an un- avoidable risk of injury to the nerve, therefore intentional retention of any parts of the tooth was proposed via a planned procedure around 20 years ago called conclu- nectomy. This is the removal of the crown of a tooth, leaving the root in situ. It is merely adopted to avoid or minimise damage to the IDN. The rate of complications after conec- nectomy is comparable to that observed after surgical extraction, except with a significantly low incidence of in- jury to the IDN.

It should be noted that both sec- tioning and coronectomy can be performed with a shorter time by increasing the amount of bone removal re- quired is minimal, thus minimising the postoperative morbidity. How- ever, it cannot be performed in all cases in which the LM3 is close to the IDC and is certainly contra-indicated when the LM3 is decayed or its roots are notched or perforated with a pathology and should be considered with caution in severely inclined mesio-angular and horizontal impaction cases. The author does not recommend distal bone removal or retraction of the lingual flap with the intention of protecting the lingual nerve, as these may increase the risk of damaging the lingual nerve. It should be em- phasised that incision may not ex- tend beyond the distobuccal aspect of the tooth.

The other important aspect of the dental extraction procedure is the future replacement of the tooth to be extracted. The current trend of tooth replacement for both functional and aesthetic reasons is the placement of dental implants. The success of this treatment largely depends on the availability of healthy bone in suf- cient volume. Therefore, it is crucial for the dental practitioner not to compromise the alveolar bone dur- ing extraction of the teeth. Changes in the alveolar bone ridge after an extraction are inevitable. After all dental extractions, bone height and width always undergo dimensional changes. Bone does not regenerate above the level of the alveolar crest, which is its height will not increase during healing. The problem of alveolar plate tends to shrink, shifting the crest of the alveolar ridge lingually, and of- ten forms a concavity. Such changes are proportional to the amount of trauma to the soft- and hard tissue during the extraction.

An additional unfavourable change that may take place is the slow re- modelling of the bone formed to fill up the extraction socket owing to lack of functional stimulation. The presence of poorly remodelled alveolar bone may compromise the stability and function of the future implant. Furthermore, studies show that the stripping and elevation of mucoperiosteal tissue produce a higher number of osteoclasts within the alveolar ridge and hence greater resorption and shrinkage are seen after the classical surgical or the intru- sive extraction procedure. The preservation of alveolar bone for future implant placement may be achieved by unecessary bone removal and stripping of the periosteum during surgery, as well as performing a surgical alveolar bone preservation procedure. Bone removal can be largely avoided or minimised through modification of the traditional extraction technique.

The first such modification is the use of dental peritonem and luma- tomes to gently strip the periodontal attachment fibres and widen the socket without causing cracks or fracture of the cortical plates, as commonly encountered when using dental forceps or the bulky elevators. The use of such gentle instruments also eliminates the need for elevation of mucoperiosteal tissue. However, it should be noted that the safe use of these instruments requires adequate training and should be encouraged during undergraduate clinics. clot stabilisation through light packing of the socket with collagen sponges may help to minimise clot dislodge- ment, as well as accelerate the heal- ing process and bone regeneration.

The second strategy is the alveolar bone preservation procedure. This includes packing the extraction socket with different fillers, such as bone. An osteoconductive materials, like autogenous bone, synthetic bone grafting materi- als that support the alveolar socket walls, thus preventing their collapse and shrinkage. It should be noted that this intervention can only slow down the post-extraction changes to improve the success of the dental implant, but cannot stop them alto- gether.

Finally, post-extraction care should include an explanation of the heal- ing process and potential symptoms encountered after such procedures. The prescription of medications should be limited to non-steroidal anti-inflammatory drugs in most cases and imprudent use of antibi- otic agents. Socket dressing should be avoided.

Editorial note: The article was pub- lished in Ortho Magazine 1/2016

Dr Kamis Gaballah
Educated in the UK and Ireland, Dr Kamis Gaballah is currently an associate professor and senior specialist in oral and maxillofacial surgery at the Academy of Sciences and Technology in the United Arab Emir- ates. He can be contacted at kamisgaballah@yahoo.co.uk.
ADA CERP is a service of the American Dental Association to assist dental professionals in identifying quality providers of continuing dental education.

ADA CERP does not approve or endorse individual courses or instructors, nor does it imply acceptance of credit hours by boards of dentistry.

Join the largest educational network in orthodontics!

www.OTStudyClub.com

- education everywhere and anytime
- live and interactive webinars
- a focused discussion forum
- free membership
- no travel costs
- no time away from the practice
- interaction with colleagues and experts across the globe
- a growing database of scientific articles and case reports
- ADA CERP-recognized credit administration

Ortho Tribune Study Club