Celebrating 10 years of Dental Facial Aesthetics over 6 days – Dubai Dental Week November

By Dental Tribune MEA/CAPPmea
DUBAI, UAE: The 2018 Dental Facial Cosmetic Conference & Exhibition will be celebrating its 10th anniversary this year on 09-10 November 2018. Total of 42 CME credits, over 38 international speakers and key opinion leaders, 27 lectures, 21 hands-on dental training courses, 10 poster presentations and over 30 free CME sessions will take place during Dubai Dental Week (07-12 November 2018). The term “cosmetic dentistry” was invented in the 1990s, but it actually dates back to the ancient times. It is well known that wooden sticks were used to clean their teeth for beauty and not for health reasons, in early 3000 BC.

The Middle-East’s largest dental conference related to aesthetic dentistry will once again open its doors on 09 November 2018 at the Intercontinental Hotel Dubai Festival City. The two day event will feature interactive lectures, hands-on trainings, seminars, trade show exhibition and additional CME related events. Ten years together – one decade, learning through experience and exchange, our dental communities come together to contribute on the evolution of cosmetic dentistry and development within the field. Thanks to modern technologies and the fast growing evolving of the materials and techniques; cosmetic treatment from teeth whitening, laser procedures, composite fillings, dental bonding to veneers and dental implants, cosmetic dentistry is defining a new epoch.

It has been incredible to experience the growth of this conference over the past decade, to review progress and challenges in cosmetic and aesthetic dentistry. The 9th edition in 2017 concluded with a record breaking attendance which exceeded 3,000 delegates. The 10th edition will surpass the attendance as the event has become ever so popular in the Middle East region.

CAPP is very proud to be part of this progress for the last decade and to contribute with high-quality education. We invite all dental professionals to be part of this memorable event on 09-10 November 2018 at the Intercontinental Hotel Festival City in Dubai. During the event, CAPP Dental Education Academy will feature the following at the 10th Dental Facial Cosmetic Conference & Exhibition:

Educational sessions with industry experts
Dental Hygienist Seminar (DHS)
Poster Presentations
Pre and post hands-on courses with industry experts
Face-to-face appointments with suppliers of your choice
Networking opportunities with industry peers and supplier representatives
Topic focussed dedicated trade show exhibition
Main Sponsors include Dentsply Sirona, Ivoclar Vivadent, 3M Oral Care, Coltene, Oral-B, Invisalign, 3Shape, VITA, Colgate, Shofu, Carestream Dental, Kulzer, EMS, Mectron, Hu-Friedy and more.

From a patient to a fan: Together we make it happen!
Researchers find possible link between bruxism and periodontitis

OKAYAMA, Japan: In a recent study, researchers from Okayama University investigated whether involuntary masseter muscle ac-
tivity might be related to its acuteness.

A total of 33 participants took part in the study, 16 of whom had no or mild periodontitis (NMP), with the remaining 17 having moderate to severe periodontitis (MSP). To ensure researchers were able to at-
tain in-depth results as possible, participants were equipped with a portable electromyography (EMG) device and monitored both day and night.

In addition to wearing the device, participants of the study were also required to keep a diary—noting activities such as when they ate their meals, which enabled researchers analysing the data to filter out all muscular activity not related to involuntary teeth grinding. Teeth movement due to speech was fil-
tered out by monitoring voice ac-
tivity from a microphone attached to the EMG device.

According to the study’s results, during both waking and sleeping hours, the duration of masseter muscle activity was significantly longer in the MSP group than in the NMP group. However, due to oral conditions such as missing teeth or the use of removable partial den-
tals not being taken into account, as well as the limited capabilities of the EMG setup, researchers stated that bruxism leading to periodonti-
tis could not be concluded.

The study, titled “Relationship be-
tween severity of periodontitis and masseter muscle activity during waking and sleeping hours”, was published in the Archives of Oral Biology on 1 March 2018.
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
Implant-based all-ceramic restoration using 3M Impregum Penta Polyether Impression Material

By Dr. Gunnar Reich, Germany

Open tray (pick-up) technique

Initial situation

Single implant in region 15 to replace missing tooth. Patient arrived for impression taking appointment with trans-gingival healing cap. Surrounding soft tissue shows excellent healthy conditions (Fig. 1).

Treatment

After removal of the healing cap, the impression post (Straumann implant system) for the open tray (pick-up) technique was positioned (Fig. 2). For impression taking Impregum Penta Polyether Impression Material was selected. For the monophase technique the same material is used for tray loading and syringing the impression post. While the assistant was filling the tray, the dentist syringed the material thoroughly with the elastomer syringe (Fig. 3).

The impression was taken using a 3M ESPE Impression Tray. The perforation was made according to the individual situation (Fig. 4).

The accurate impression with the fixed impression post (Fig. 5) was then sent to the dental lab. Prior to pouring the model, the laboratory implant analog was exactly mounted (Fig. 6).

For highest esthetics, a custom-made zirconia abutment (3M Lava Plus) (Fig. 7) was delivered by the lab. On top, an individualized monolithic zirconia crown was placed (Fig. 8).

Open tray (pick-up) technique

In this technique, the direct transfer coping gets “picked up” and remains in the set impression upon removal from the mouth. Once the impression has set, the screw holding the coping on the implant is accessed through the hole above/below the implant in the open tray and unscrewed to allow removal of the impression from the mouth. Once outside of the mouth, the implant analogue is connected to the transfer coping prior to pouring the stone model.

Closed tray (snap-on) technique

Initial situation

Single implant in region 15 to replace missing tooth. Patient arrived for impression taking appointment with trans-gingival healing cap. Surrounding soft tissue shows excellent healthy conditions (Fig. 1).

Treatment

After removal of the healing cap, the corresponding impression post and the impression cap (CAMLOG implant system) for the closed tray (snap-on) technique were mounted. For impression taking Impregum Penta Polyether Impression Material was chosen since it offers dimensional accuracy and a secure impression cap fixation. The impression was taken using a regular stock tray.

For the monophase technique the same material is used for tray loading and syringing the impression post. While the assistant was filling the tray, the dentist syringed the material thoroughly with the elastomer syringe (Figs. 2 and 3).

The accurate impression with the fixed impression post (Fig. 4) was then sent to the dental lab. Prior to pouring the model, the laboratory implant analog was exactly mounted (Fig. 5).

For highest esthetics, a custom-made zirconia abutment (3M Lava Plus) (Fig. 6) was delivered by the lab. On top, an individualized monolithic zirconia crown was placed (Fig. 7).

Closed tray (snap-on) technique

In this technique, the direct transfer coping “snaps on” to the top of the implant abutment in the mouth. Once the impression has set, the coping becomes embedded in the impression and is pulled off of the implant abutment when the set impression is removed from the mouth. Once outside of the mouth, the implant analogue is connected to the transfer coping prior to pouring the stone model.

Tips for Making Great Implant Impressions

- Support tray until impression material is sufficiently set. Stabilize the tray after seating, avoid any movements.
- Use enough material and keep the tip permanently immersed in the material during syringing to avoid air entrapment and voids.
- Pick-up techniques: Widen implant windows in the tray to avoid tray-abutment contact.

Closed tray (snap-on) technique

Initial situation

Single implant in region 15 to replace missing tooth. Patient arrived for impression taking appointment with trans-gingival healing cap. Surrounding soft tissue shows excellent healthy conditions (Fig. 1).

Treatment

After removal of the healing cap, the corresponding impression post and the impression cap (CAMLOG implant system) for the closed tray (snap-on) technique were mounted. For impression taking Impregum Penta Polyether Impression Material was selected. For the monophase technique the same material is used for tray loading and syringing the impression post. While the assistant was filling the tray, the dentist syringed the material thoroughly with the elastomer syringe (Fig. 2).

The impression was taken using a 3M ESPE Impression Tray. The perforation was made according to the individual situation (Fig. 3).

The accurate impression with the fixed impression post (Fig. 4) was then sent to the dental lab. Prior to pouring the model, the laboratory implant analog was exactly mounted (Fig. 5).

For highest esthetics, a custom-made zirconia abutment (3M Lava Plus) (Fig. 6) was delivered by the lab. On top, an individualized monolithic zirconia crown was placed (Fig. 7).

Closed tray (snap-on) technique

In this technique, the direct transfer coping “snaps on” to the top of the implant abutment in the mouth. Once the impression has set, the coping becomes embedded in the impression and is pulled off of the implant abutment when the set impression is removed from the mouth. Once outside of the mouth, the implant analogue is connected to the transfer coping prior to pouring the stone model.

Tips for Making Great Implant Impressions

- Support tray until impression material is sufficiently set. Stabilize the tray after seating, avoid any movements.
- Use enough material and keep the tip permanently immersed in the material during syringing to avoid air entrapment and voids.
- Pick-up techniques: Widen implant windows in the tray to avoid tray-abutment contact.

To request Pentamix ‘Test Drive’ or visit of 3M specialist please contact us at: 3MOralCareGulf@mmm.com

To learn more 3M Impregum Polyether Impression Material please visit: www.3M.co.uk (dental Gulf countries), www.3M.ca (United States)

© 3M 2018. All rights reserved.

3M ESPE, Impregum, Lava and Penta are trademarks of 3M Company or 3M Deutschland GmbH. Used under license in Canada. All other trademarks are owned by other companies.

Dr. Gunnar Reich
Munich, Germany
Owner of Dr. Gunnar Reich Private Dental Practice specialized in the following focus areas: aesthetic restoration and reconstruction with plastic filling material in anterior and posterior regions, complex dental prosthetics and implantology. Author of several publications in Germany and abroad.

www.3Mae.ae (Gulf countries), www.3M.com.sa (Saudi Arabia)

www.3M.com (US), www.3M.com (Canada). All other trademarks are owned by other companies.
Because a great-fitting restoration should never be a surprise.

When it comes to impression making, you don’t have to choose between precision and ease of use. The impression procedure from 3M gives you both. It integrates products that function simply, to give you control at every step. And VPS and polyether material choices are designed to enhance your success with everyday procedures and more challenging cases. It’s simply a better way to make better impressions.

3M, Impregum, Penta and Pentamix are trademarks of 3M or 3M Deutschland GmbH. Used under license in Canada. © 3M 2018. All rights reserved.
GUM PAROEX – professional plaque control for optimal gum health

By Sunstar Europe

The combination of Chlorhexidine Digluconate (CHX), professional reference for plaque control and Cetylpyridinium Chloride (CPC), included in GUM Paroex products, has the long-lasting ability to attack the structure of existing plaque and prevent the growth of bacteria and toxins responsible for its formation. The superior efficacy of GUM Paroex in the plaque control was proven by an independent study* with the following results:

- GUM PAROEX 0.12% CHX + 0.05% CPC is clinically proven to have a more pronounced effect in reducing plaque (vs. CHX/ADS) and gum problems than other usual mouthrinses containing CHX (Fig. 1, Fig. 2).
- The clinical efficacy of GUM PAROEX 0.12% CHX + 0.05% CPC is significantly superior to 0.12% CHX/ALC in controlling gum problems (Fig. 1).
- GUM PAROEX 0.12% CHX + 0.05% CPC clinical efficacy in helping control gum problems is significantly superior to 0.20% CHX/ADS (Fig. 1).
- The taste of GUM PAROEX 0.12% CHX + 0.05% CPC is well-received and significantly better than 0.12% CHX/ALC and 0.20% CHX/ADS formulation. This promotes better patient compliance to treatment (Fig. 3).
- The staining of GUM PAROEX 0.12% CHX + 0.05% CPC is equivalent to the staining produced by 0.12% CHX/ALC or 0.20% CHX/ADS based on subjective patient evaluation (Fig. 4).

* Per Ramberg et al. Effect of Chlorhexidine/Cetylpyridinium Chloride on plaque and gingivitis: abstract IDW 2013, IADR WED Budapest 2013

Gingival Index (GI) - measure of periodontal disease based on the severity and location of the lesion.

Plaque Index (QHI) - an index for estimating the status of oral hygiene by measuring dental plaque that occurs in the areas adjacent to the gingival margin.

Subjective tooth staining - an index for estimating the staining produced by the different mouth rinses evaluated by the VAS method at Day 21 on 17 patients.

Subjective taste - an index for estimating the taste of the different mouth rinses evaluated by the VAS method at Day 21 on 17 patients.

Fig. 1: Mean Gingival index (GI) change Day 0 - Day 21 in 17 patients. Different letters indicate statistically significant differences in the mean GI change Day 0 - Day 21 between treatment groups.

Fig. 2: Mean QHI (plaque level) change Day 0 - Day 21 in 17 patients. Different letters indicate statistically significant differences in the mean QHI change Day 0 - Day 21 between treatment groups.

Fig. 3: Subjective taste of the different mouth rinses evaluated by the VAS method at Day 22 on 17 patients. Different letters indicate statistically significant differences in treatment groups at Day 22.

Fig. 4: Subjective tooth staining of the different mouth rinses evaluated by the VAS method at Day 22. Different letters indicate statistically significant differences in treatment groups at Day 22.

Dentsply Sirona’s new VPS impression material – coming soon

By Dentsply Sirona

In keeping with a long tradition of offering meaningful innovation to the market, Dentsply Sirona will proudly introduce Aquasil Ultra® Smart Wetting® Impression Material to customers in October 2018. A completely redesigned VPS offering, Aquasil Ultra® impression material merges state-of-the-art intraoral hydrophilicity and intrarotal tear strength to deliver better than ever results, optimising performance in all areas, not just one. The ‘s’ means clinicians now do not have to choose between wettability, tear strength, speed, and delivery options.

Aquasil Ultra® Smart Wetting Impression Material is a final VPS impression material indicated for use in all dental impression techniques and will be available for purchase through approved Dentsply Sirona distributors.

A No-Compromise VPS Solution

Aquasil Ultra® provides clinicians with a no-compromise solution to their final impression needs with market leading intraoral hydrophilicity and intrarotal tear strength. Historically, the market has measured impression material performance outside of the clinical context in which a dentist works. Leveraging the latest technology, Dentsply Sirona tests and publishes clinically relevant intraoral performance to better empower clinicians to make better clinical decisions.

Aquasil Ultra® impression material’s market leading intraoral hydrophilicity is designed to help clinicians avoid trapping fluid from the tooth prep and ensure the material is syngergized into the moist, humid environment, helping clinicians alleviate voids and bubbles at or near the margin. Our extremely low contact angle—while the impresion material is uncured—helps ensure an accurate impression in the presence of natural hydration, so over-deckation of the tooth prep isn’t necessary. It also delivers ideal cured film hydrophilicity, meaning the material continues to work well with moisture after it leaves your office. Delivered accuracy at the lab to ensure proper fitting final restorations.

Market leading intraoral tear strength delivers a material designed to help clinicians reduce risks of tears at the margin which are the most common impression errors labs see. It is especially useful while the material is in thin cross-sections and when being removed from the patient’s mouth, as well as during pours at the lab. Our advanced formula accommodates a wider set of cases, including those us¬ing retraction paste where minimal retraction occurs.

Aquasil Ultra® sets a standard of excellence with its ability to capture and maintain detail thanks to its in¬traoral performance, and combines this with a selection of clinically relevant work/set times and viscosity choices to provide a no-compromise product solution for single-unit crown cases and more.

Learn more about how Aquasil Ultra® impression material can benefit the den¬tal office from your local Dentsply Sirona sales representative or at www.Aquasil-UltraPlus.com

Aquasil® Ultra® Smart Wetting® Impression Material

Dental Tribune Middle East & Africa Edition | 5/2018
MIND BLOWING
MyCrown

- Fully Integrated System
- Fast and Easy to Use
- Grow Your Clinic

Find out more on www.fonadental.com
An exciting year for award winning brand Beverly Hills Formula

By Beverly Hills Formula

Despite over two decades as one of the world’s top oral care brands, Beverly Hills Formula continues to expand rapidly. 2018 has been a truly tremendous year for BHF, with CEO Chris Dodd catapulting the company to ground-breaking new heights. Revolutionary new product development and a dedication to producing safe and effective teeth whitening in the home has allowed the brand to enjoy continued success across the globe, notably in the Middle East, where popularity and demand has soared.

Throughout 2017, the company focused their attention on increasing their brand presence here and merely one year later, Beverly Hills Formula have firmly cemented their place as market leaders in Oral Care. They are currently stocked in countries such as UAE, Saudi Arabia, Oman, Qatar, Lebanon, Kuwait, Jordan and Iran, and dental professionals raise no qualms when recommending the products to their patients.

The brand’s mantra is to always be innovators, not imitators, and 2018 saw the introduction of one of their most cutting-edge range yet. The Professional White Range was showcased at 2018’s International Dental Conference and Arab Dental Exhibition (AEDDE) and was met with an exceptionally positive response.

Having debuted at 2017’s show, there was definitely a buzz about the range this year, and dental professionals from across the globe eagerly visited the stand to find out more about the range. The Professional White Range Black Pearl Whitening Toothpaste, Pink Pearl Sensitive Toothpaste, the award winning Precious Pearl Enamel Remineralising Toothpaste and Fresh Pearl Mouthwash. Their Precious Pearl Enamel Remineralising toothpaste and Fresh Pearl Mouthwash. Their Precious Pearl Enamel Remineralising Toothpaste and Fresh Pearl Mouthwash. Their Precious Pearl Enamel Remineralising Toothpaste and Fresh Pearl Mouthwash.

Along with this highly sought after range, the brand also showcased their first Professional Whitening Kit, which includes teeth whitening strips and a handy on the go whitening pen. The company sought to introduce a whitening kit to the market that not only offers exceptional teeth whitening, but one that is also safe to use and won’t damage teeth.

The kit was over two years in development. The main ingredient is PAP – Phthalimido Peroxy Caproic Acid, a non-peroxide teeth whitening ingredient which effectively breaks down discolorations on the teeth, without harming the enamel of gums.

Also in their portfolio is the Perfect White Range, which has been a major success for the brand. The range includes Perfect White Black, one of the most innovative products to hit shelves. The brand were first to market with their activated charcoal toothpaste, which has been clinically proven to remove stains and improve breath.

The brand looks forward to reaching new heights in 2019, acknowledging that this may well be their biggest one yet.

Beverly Hills Formula
Unit 53/54 North King Business Park
Swords Road
Dublin, B. Ireland
Web: www.beverlyhillsformula.com
E-mail: info@beverlyhillsformula.com
Tel: + 353 1 842 6612
Fax: + 353 1 842 6647

Translux Wave - For save, sustainable polymerisation

By Kulzer

Translux Wave is a LED curing light for the polymerisation of dental materials such as adhesives and composites.

It is developed to consistently produce high-quality fillings with an optimum polymerisation depth in the 440–480 nm Wavelength range.

Benefits at a glance

- Pen-style body
- The light weight and ergonomic pen-style design enables an effortless handling even for small hands.
- Furthermore, the advanced angle of the 360° rotatable light guide allows a better access to the molar regions.
- One-button operation: One convenient power/program button to choose between 10 and 20 seconds. LED lights indicate the program change.
- Cordless design. The cordless design gives you maximum freedom of movement.
- Reliable performance: Translux Wave comes with a strong and long life Li-ion battery. It requires very little time to recharge and the battery can be exchanged quickly and easily without tools. The built-in radiometer ensures the performance you need for the perfect restoration.

Ivory – The complete system for tooth isolation

By Kulzer

We recommend Ivory Rubber Dams for absolute isolation of the treatment area. We provide Ivory Rubber Dam Clamps in a variety of sizes and shapes. With the Ivory all-in-one system, you will master practically every application, ranging from routine to challenging treatments.

Ivory Rubber Dam Clamps

The Ivory rubber dam is manufactured from natural latex and undergoes a special washing step during the manufacturing process to reduce surface proteins. Ivory Rubber Dam has extremely high tear strength, reducing waste from tearing during application. The Rubber Dam is thin and pliable, allowing easy placement in especially difficult areas.

Ivory Rubber Dam Clamps

We produce the Ivory rubber dam clamps in various sizes and shapes. Each Ivory clamp is die-cut, heat treated, tempered and individually hand-set to ensure high performance. This is how we guarantee the highest performance of the stainless steel clamps and confident fixation of the rubber dam.

Ivory Punch

This precision instrument is made from high quality stainless steel. The unique floating plunger strikes all edges of the cutting disc evenly, guaranteeing a perfect, tear-resistant hole every time. The cutting disc rotates through a range of 6 hole sizes, providing the correct opening for the smallest anterior tooth to the largest molar.

Ivory Forceps

The Ivory forceps are made from high grade stainless steel to ensure many years of use. The forceps will reach around the bow of any clamp without tilting, which is especially important when reversing a clamp. The straight head design allows easy gripping and placement of any clamp size.

The most popular stainless steel clamps.

- Available in a multitude of sizes and shapes
- Die-cut, heat treated, tempered and individually hand-set to ensure high performance
- Also available in wireless

By Marc Berendes, CEO Kulzer

“In our system solutions, materials, technologies and services are inter-connected from the very start.”

Marc Berendes, born on June 19, 1970, was appointed CEO as of July 1, 2018. He has been the Kulzer CEO and member of the Management since 2006. In this function, he was responsible for Sales, Service and Marketing. Marc Berendes has over 20 years of experience in the medical device industry. The Canadian looks back on a successful career in various management functions in Sales, Marketing and Finance for a number of renown healthcare companies.

Aboubakr Eliwa
Area Manager Middle East
T: +971 (4) 294 35 62 (Office)
F: +971 (4) 294 35 63
M: +971 (5) 5650 89 76
E: aboubaker.eliwa@kulzer-dental.com
W: www.kulzer.com
EVO.15 – The world's safest contra-angle, developed by Bien-Air

By Bien-Air

In response to public health authorities’ growing concern over patient burns caused by rotary dental instruments, Swiss medical technologies company Bien-Air Dental has developed the EVO.15, the safest contra-angle on the market today.

In procedures involving contra-angles, the slightest contact between the instrument’s push-button and the inside of the patient’s cheek may result in the instrument overheating, potentially exposing the practitioner to lengthy legal action.

“While overheating can be an indication of a damaged or clogged instrument, laboratory evaluations reveal that this hazard is just as prevalent in new and properly-maintained handpieces,” says Clementine Favre, Chief Technical Officer. She goes on to specify that the most severe cases have caused third-degree burns requiring reconstructive surgery, and potentially exposing the practitioner to lengthy legal action.

Equipped with patented Cool-Touch™ heat-arresting technology, the EVO.15 is the only contra-angle proven never to exceed human body temperature. After years of research and development, this technology works to protect both the patient and the clinician during some of the profession’s most frequently performed procedures. Additionally, the EVO.15 features a considerably smaller and lighter shockproof head and a potentially exposing the practitioner to lengthy legal action.

Planmeca Emerald – the crown jewel of intraoral scanning

The Planmeca Emerald intraoral scanner has set the bar high for capturing digital impressions. With unprecedented speed and accuracy, it represents the highest level of scanning available in the world today.

By Planmeca Oy

Planmeca Emerald has been designed with premium usability in mind and provides superior accuracy and outstanding speed in all situations. Due to its small size and light weight, the scanner is very smooth to use and also comfortable for patients.

Planmeca Emerald’s seamless, autoclavable and exchangeable tips make infection control measures simple and efficient. The scanner’s two buttons also allow it to be operated with one hand, such as a mouse or keyboard, and can even be controlled from a foot pedal when connected to a dental unit. The scanner’s plug-and-play capability allows it to be effortlessly shared between different rooms and laptops.

Planmeca Emerald has the flexibility to support various different workflows. The scanner supports a wide range of treatment options and offers benefits across several specialties – such as implantology, orthodontics, prosthodontics and maxillofacial surgery. With open export and import options, regular updates and constant new features becoming available, the scanner continues to evolve and improve even further.

Planmeca Emerald is part of the Planmeca FIT chairside CAD/CAM system that integrates the entire workfl ow from scanning to designing and milling.

For more information, please contact:

Planmeca Oy
Asentajankatu 6
FIN-00880 Helsinki, Finland
Tel. +358 20 7795 500
Fax. +358 20 7795 555

Planmeca Emerald has the ability to support various different workflows. The scanner supports a wide range of treatment options and offers benefits across several specialties – such as implantology, orthodontics, prosthodontics and maxillofacial surgery. With open export and import options, regular updates and constant new features becoming available, the scanner continues to evolve and improve even further.

Planmeca Emerald is part of the Planmeca FIT chairside CAD/CAM system that integrates the entire workfl ow from scanning to designing and milling.

For more information, please contact:

Planmeca Oy
Asentajankatu 6
FIN-00880 Helsinki, Finland
Tel. +358 20 7795 500
Fax. +358 20 7795 555

Due to its small size and light weight, the Planmeca Emerald scanner is very convenient to use.

Planmeca FIT chairside CAD/CAM system that integrates the entire workfl ow from scanning to designing and milling.

For more information, please contact:

Planmeca Oy
Asentajankatu 6
FIN-00880 Helsinki, Finland
Tel. +358 20 7795 500
Fax. +358 20 7795 555

Due to its small size and light weight, the Planmeca Emerald scanner is very convenient to use.

Planmeca Emerald has set the bar high for capturing digital impressions. With unprecedented speed and accuracy, it represents the highest level of scanning available in the world today.

Planmeca Emerald has the ability to support various different workflows. The scanner supports a wide range of treatment options and offers benefits across several specialties – such as implantology, orthodontics, prosthodontics and maxillofacial surgery. With open export and import options, regular updates and constant new features becoming available, the scanner continues to evolve and improve even further.

Planmeca Emerald is part of the Planmeca FIT chairside CAD/CAM system that integrates the entire workfl ow from scanning to designing and milling.

For more information, please contact:

Planmeca Oy
Asentajankatu 6
FIN-00880 Helsinki, Finland
Tel. +358 20 7795 500
Fax. +358 20 7795 555

Due to its small size and light weight, the Planmeca Emerald scanner is very convenient to use.

Planmeca Emerald has set the bar high for capturing digital impressions. With unprecedented speed and accuracy, it represents the highest level of scanning available in the world today.

Planmeca Emerald has the ability to support various different workflows. The scanner supports a wide range of treatment options and offers benefits across several specialties – such as implantology, orthodontics, prosthodontics and maxillofacial surgery. With open export and import options, regular updates and constant new features becoming available, the scanner continues to evolve and improve even further.

Planmeca Emerald is part of the Planmeca FIT chairside CAD/CAM system that integrates the entire workfl ow from scanning to designing and milling.

For more information, please contact:

Planmeca Oy
Asentajankatu 6
FIN-00880 Helsinki, Finland
Tel. +358 20 7795 500
Fax. +358 20 7795 555

Due to its small size and light weight, the Planmeca Emerald scanner is very convenient to use.

Planmeca Emerald has set the bar high for capturing digital impressions. With unprecedented speed and accuracy, it represents the highest level of scanning available in the world today.

Planmeca Emerald has the ability to support various different workflows. The scanner supports a wide range of treatment options and offers benefits across several specialties – such as implantology, orthodontics, prosthodontics and maxillofacial surgery. With open export and import options, regular updates and constant new features becoming available, the scanner continues to evolve and improve even further.

Planmeca Emerald is part of the Planmeca FIT chairside CAD/CAM system that integrates the entire workfl ow from scanning to designing and milling.

For more information, please contact:

Planmeca Oy
Asentajankatu 6
FIN-00880 Helsinki, Finland
Tel. +358 20 7795 500
Fax. +358 20 7795 555

Due to its small size and light weight, the Planmeca Emerald scanner is very convenient to use.

Planmeca Emerald has set the bar high for capturing digital impressions. With unprecedented speed and accuracy, it represents the highest level of scanning available in the world today.

Planmeca Emerald has the ability to support various different workflows. The scanner supports a wide range of treatment options and offers benefits across several specialties – such as implantology, orthodontics, prosthodontics and maxillofacial surgery. With open export and import options, regular updates and constant new features becoming available, the scanner continues to evolve and improve even further.

Planmeca Emerald is part of the Planmeca FIT chairside CAD/CAM system that integrates the entire workfl ow from scanning to designing and milling.

For more information, please contact:

Planmeca Oy
Asentajankatu 6
FIN-00880 Helsinki, Finland
Tel. +358 20 7795 500
Fax. +358 20 7795 555

Due to its small size and light weight, the Planmeca Emerald scanner is very convenient to use.

Planmeca Emerald has set the bar high for capturing digital impressions. With unprecedented speed and accuracy, it represents the highest level of scanning available in the world today.

Planmeca Emerald has the ability to support various different workflows. The scanner supports a wide range of treatment options and offers benefits across several specialties – such as implantology, orthodontics, prosthodontics and maxillofacial surgery. With open export and import options, regular updates and constant new features becoming available, the scanner continues to evolve and improve even further.

Planmeca Emerald is part of the Planmeca FIT chairside CAD/CAM system that integrates the entire workfl ow from scanning to designing and milling.
Align Technology launches the iTero element intraoral scanner in the Middle East

The iTero Element Scanner Offers General Dentists and Orthodontists Enhanced Visualization Tools along with Advanced Invisalign and Restorative Workflows

By Invisalign

Align Technology, Inc. (Nasdaq: ALGN) today announced the launch of its innovative iTero Element intraoral scanner in the Middle East.

The iTero Element scanner is synonymous with high-precision intraoral scanning, and its launch in the region offers dentists and orthodontists alike a state-of-the-art digital solution, designed to enable scanning in as little as 60 seconds1 with high accuracy, intuitive operation and exceptional visualization capabilities.

The scanner will also allow dental professionals to access new features for intraoral assessment that facilitate proactive dialogue with patients regarding treatment options, including Invisalign clear aligners. Designed using advanced restorative workflows, the iTero Element scanner also offers digital options for traditional crown and bridge and implant treatments. The iTero Element scanner is now available to doctors in the United Arab Emirates, Saudi Arabia and Kuwait.

“I’m delighted to announce the launch of the iTero Element scanner in the Middle East - one of the most digitally-advanced markets in EMEA,” commented Simon Beard, Align Technology senior vice president and managing director, EMEA. “The iTero scanner is a real game-changer for doctors, combining the fast scanning speed and great precision with a simple, intuitive operating system. It will help doctors deliver excellent treatment outcomes and will significantly enhance patient experience. With this launch, we are taking further steps towards driving the growth of digital dentistry in the region and providing our doctors with best-in-class digital services.”

The iTero Element scanner, engineered to capture 6,000 frames per second, offers colour scanning to clearly distinguish between gingival and dental tissue for more precise 3D clinical evaluation. A proprietary feature of the iTero Element scanner is the Invisalign Outcome Simulator, an exclusive chair-side patient consultation tool that allows doctors to help patients visualize how their teeth may look at the end of Invisalign treatment.

To date, iTero scans have been used in more than 2.7 million restorative crown, bridge, and custom implant cases and more than 7.7 million iTero orthodontic scans, including more than 3.7 million Invisalign treatment-related scans.2

The iTero Intraoral Scanner is now available in the UAE, Saudi Arabia and Kuwait. For more information, visit www.itero.com.

*Scan times vary and depend on individual experience. Data on file at Align Technology.


More than biocompatible, bioactive! Angelus Leader in Bioceramics

More than biocompatible, bioactive! Angelus Leader in Bioceramics

Bio-C Sealer

Bioceramic root canal sealer ready to use

CHARACTERISTICS AND BENEFITS

- Pre-mixed: Ready for use/injectable;
- With Zirconia Oxide: Does not cause staining;
- Bioceramic formulation: High biocompatibility;
- Release of Calcium ions: Bioactivity;
- Alkaline: Antibacterial action;
- Interaction with dentin: High adhesion.

INDUSTRY
New Technologies to improve root canal disinfection

By Drs Gianluca Plotino, Nicola M. Grande & Prof. Gianluca Gamborini, Italy

Introduction
The major causative role of microorganisms in the pathogenesis of pulp and periapical diseases has clearly been demonstrated. The main aim of endodontic therapy is to disintegrate the infected root canal system, which requires the elimination of microorganisms and their products and the prevention of their reinfection during and after treatment. This goal is pursued through chemomechanical debridement, for which mechanical systems are used with irrigating solutions.

Standard endodontic irrigation protocol
Sodium hypochlorite (NaOCl) is the most commonly used irrigant, owing to its antibacterial properties and its effectiveness. For this reason, combination of NaOCl with EDTA (ethylenediaminetetraacetic acid) appears to reduce the antibacterial activity of NaOCl, while the EDTA is used for 2 min at 10-20°C and higher concentrations (≤6%) have greater tissue-dissolving properties. However, the greater the concentration, the more severe the potential reaction if some of the irrigant is inadvertently forced into the periapical tissue. To reduce this risk, the use of specially designed endodontic tips and an irrigation technique without pressure is recommended.

EDTA
The main disadvantage of NaOCl is its ability to dissolve organic tissue. However, the use of an EDTA solution during irrigation reduces the ability of NaOCl to dissolve organic tissue. This is due to the lower pH of the EDTA solution (pH 6.7) and the ability of EDTA to chelate ionized metals (protons) and to the absence of the chloride ion (Cl−), which is the main factor responsible for the solubilization of organic tissue. For this reason, combination of NaOCl with EDTA has been proposed to ensure good cleaning and disinfection of the root canal system, even without the use of pressure.

Ultrasound activation of NaOCl
Ultrasound activation of NaOCl is one of the most promising techniques. It is based on the fact that ultrasound creates bubbles of positive and negative pressure, which implode with secondary cavitation, releasing impact energy that is responsible for the detergent effect. Ultrasound appears to be less effective in removing debris than are other techniques. However, the use of ultrasound irrigation reduces the presence of air bubbles in the canals, and thus improves the cleaning and disinfection of the root canal system at the end of the preparation. This technique can be effectively integrated with mechanical irrigation systems and can be used in any type of canal, even in the apical third with a low risk of extrusion. Most of the studies on this technique have shown that it is very effective at ensuring a greater volume of irrigant in the apical third and excellent removal of debris from this area and inaccessible areas, with results in the majority of cases similar to those of ultrasonic activation techniques.

Sonic activation
Sonic activation has been shown to be an effective method for disinfecting the root canals. These systems use plastic tips of different sizes activated at a sonic frequency by a handpiece. The systems seem to be able to clean the main canal effectively, to remove any smear layer and to promote the filling of a greater number of lateral canals. Another recently introduced technique uses a syringe with sonic vibration that allows the delivery and activation of the irrigant in the root canal simultaneously. Sonic activation differs from ultrasonic activation in that it operates at a lower frequency (6–8 kHz), and for this reason it is generally found to be less effective in removing debris than ultrasound systems.

Acoustic streaming
Acoustic streaming is caused by the production of photoacoustic shock waves within the irrigant introduced into the canals. These systems consist of a macrocannula for the coronal and middle portions and a microcannula for the apical portion, and the canals are connected to a syringe for irrigation and the aspiration system integrated into the majority of systems. Acoustic streaming can be achieved by ultrasound, with a tip connected with a syringe delivering the irrigant to the pulp chamber without the risk of overflow, while the canula placed in the canal pulls irrigant into the canal, through the aspiration system to which it is connected, and evacuates it through the suction holes. This system is intended to ensure a constant and continuous flow of new irrigant into the apical third safely and with a lower risk of extrusion.

Laser activation
The interaction between the laser and the irrigant in the root canal is a new area of interest in the field of endodontic disinfection. This concept is based on using a laser-activated irrigation (LAI) and photon-initiated photoacoustic streaming (PIPS) technology. The mechanism of this interaction has been attributed to the effective absorption of the laser light by NaOCl. This leads to the vaporization of the irrigant and to the formation of vapor bubbles, which expand and move with secondary cavitation effects.

PIPS is the technique on the best known and the one that produces photoacoustic shock waves within the irrigant introduced into the canals. When it is activated in a limited volume of liquid, the high absorption of the irradiated liquid causes the formation of a pressure difference within the liquid. This pressure difference causes the liquid to be pushed out of the canal, creating a vacuum that draws new liquid into the canal. This process is repeated until the disinfected root canal is filled with new liquid, which is then allowed to circulate for the entire treatment. The laser beam is then activated, causing the liquid to be evacuated from the canal, and a new cycle of activation is started. This process continues until the root canal is completely disinfected.

In order to deliver the irrigant into the root canal for the entire length, and to obtain a good flow of fluid, apical negative pressure systems have been introduced that release and remove the irrigant simultaneously.

Continuous irrigation during instrumentation
Recently, a new system for root canal preparation has been introduced to the market. This system uses a particular instrument and an ultrasonic activation system that envelopes the canal via a friction in a vibration motion and allows to perform a better irrigation file itself. This system has shown excellent results in terms of respect of the canal anatomy and cleaning of difficult root canal anatomic systems, such as difficult inclusions, open canals or C-shaped canals. The low sonic efficiency of this system in some cases may limit its use in root canal preparation, but makes it an excellent technique in difficult cases.

Manual agitation techniques
The simplest technique of mechanical activation of irrigants is manual agitation. In this method, one or more irrigating solutions are agitated while the irrigant is being introduced into the root canal. This technique has been proposed to ensure good cleaning and disinfection of the root canal system, even without the use of pressure.

Fig. 1 & 2: Ultrasound activation with a passive tip (fig. 1) and an active file (fig. 2)
of the laser in NaOCl combined with the light, a phenomenon called the short pulse duration employed (90 μs) determines a photomechani- cal phenomenon.4 A study showed that there was no difference in bacte- rial reduction achieved by NaOCl at- tachment and its irradiation with laser beams.40 Another study investigated the capability of LAD to remove a bac- terial biofilm created in vitro on the canal walls.43 This study found that it did not completely remove the laser- film from the apical third of the root canal and infected dentinal tubules.43 However, the combination of activa- tion generated a higher number of samples with negative bacterial cul- tures and a lower number of bacteria in the apical third was a promising result regarding the effectiveness of the technique, and has been con- firmed by a more recent study.39

Additional disinfection systems

In addition to the above-mentioned systems that were able to activate the endodontic irrigants and to improve their efficiency, laser disin- duction is oriented toward the destruction of microorganisms that could further refine disin- fection and assist in the destruction of any remaining biofilm. For this purpose, different sub- stances and technologies have been investigated over time with different results.

Photovacuolated disinfection

A new concept recently introduced in endo-dodontics in photoactivated dis- infaction. This technique is based on the principle of photovacuolation in which a photodeactivating mol- ecules (photosemitter, PS) have the ability to bond to the microorganism and bacteria. The PS is activated with a specific wavelength and produces reactive oxygen species (ROS) that destroy the bacterial cell wall on which the PS is adsorbed, determining a bacteri- cidal action.34 35

In the endodontic field, several types of lasers have been used to improve root canal disinfection: the diode laser, carbon dioxide laser, IR YAG laser and Nd:YAG laser. The bacteri- cidal action of the laser depends on the characteristics of its wavelength and energy, and in many cases it is due to the thermal effect in- ducted by the laser produces an alteration of the bacterial cell wall that leads to the formation of the microorganism’s vapor.44 This thermal energy emitted from the tip of the optical fiber is directed along the root canal and penetrates towards the wall of the canal. In order to overcome this limitation, a new delivery sys- tem of the laser was developed. The system consists of a tube that allows the emission of the radiation later- ally, instead directly into a single open- ing at its terminal end. The objective of this new system was to improve the antimicrobial effect of the laser in order to penetrate and destroy the remaining biofilm on the canal walls and in the dentinal tubules.45 However, complete elimination of the biofilm and bacteria has not yet been possible, and the effect of the la- ser and light on endodontic disinfection is not a suitable possibility to existing pro- blems to disinfect the root canals.46 The laser energy emitted from the tip of the optical fiber is directed along the root canal and penetrates towards the wall of the canal. In order to overcome this limitation, a new delivery system of the laser was developed. The system consists of a tube that allows the emission of the radiation laterally, instead directly into a single opening at its terminal end. The objective of this new system was to improve the antimicrobial effect of the laser in order to penetrate and destroy the remaining biofilm on the canal walls and in the dentinal tubules.45 However, complete elimination of the biofilm and bacteria has not yet been possible, and the effect of the laser and light on endodontic disinfection is not a suitable possibility to existing problems to disinfect the root canals.46 The laser energy emitted from the tip of the optical fiber is directed along the root canal and penetrates towards the wall of the canal. In order to overcome this limitation, a new delivery system of the laser was developed. The system consists of a tube that allows the emission of the radiation laterally, instead directly into a single opening at its terminal end. The objective of this new system was to improve the antimicrobial effect of the laser in order to penetrate and destroy the remaining biofilm on the canal walls and in the dentinal tubules.45 However, complete elimination of the biofilm and bacteria has not yet been possible, and the effect of the laser and light on endodontic disinfection is not a suitable possibility to existing problems to disinfect the root canals.46 The laser energy emitted from the tip of the optical fiber is directed along the root canal and penetrates towards the wall of the canal. In order to overcome this limitation, a new delivery system of the laser was developed. The system consists of a tube that allows the emission of the radiation laterally, instead directly into a single opening at its terminal end. The objective of this new system was to improve the antimicrobial effect of the laser in order to penetrate and destroy the remaining biofilm on the canal walls and in the dentinal tubules.45 However, complete elimination of the biofilm and bacteria has not yet been possible, and the effect of the laser and light on endodontic disinfection is not a suitable possibility to existing problems to disinfect the root canals.46 The laser energy emitted from the tip of the optical fiber is directed along the root canal and penetrates towards the wall of the canal. In order to overcome this limitation, a new delivery system of the laser was developed. The system consists of a tube that allows the emission of the radiation laterally, instead directly into a single opening at its terminal end. The objective of this new system was to improve the antimicrobial effect of the laser in order to penetrate and destroy the remaining biofilm on the canal walls and in the dentinal tubules.45 However, complete elimination of the biofilm and bacteria has not yet been possible, and the effect of the laser and light on endodontic disinfection is not a suitable possibility to existing problems to disinfect the root canals.46

Laser

One of the main disadvantages of the current endodontic irrigants is the need to combine the disinfection pro- cedure with the root canal filling as the laser should be used immediately after the disinfection of the root canal as it may cause the evapora- tion of possible disinfectants.48 One of the main disadvantages of the current endodontic irrigants is the need to combine the disinfection procedure with the root canal filling as the laser should be used immediately after the disinfection of the root canal as it may cause the evaporation of possible disinfectants.48

Bioactive glass

Recently, bioactive glass or bioactive glass ceramics have been a subject of considerable interest in endodontic dis- infaction owing to their antibacte- rial properties, but conflicting results have been obtained.16 Natural plant extracts

A current trend is the use of natural plant extracts, taking advantage of the antibacterial activity of poly- phenolic molecules generally used for storing food. These compounds are known to be potent anti- bacterial efficacy, but several dem- onstrate significant ability to reduce the formation of biofilms. For example, the mechanism by which this occurs is not clear.17 Noninstrumentation techniques

These caused the implosion of the produced bubbles and hydrody- namic turbulence that facilitated the penetration of the laser into the root canal ramifications. At the end of this procedure the root canals were filled with a cemented convex by the same vacuum pump. This system did not prove to be suitable for endodontic effective- ness and was never marketed.

Recently, a method has been devel- oped for cleaning the entire root canal system through the use of a broad spectrum of sound waves transmitted within an irrigating so- lution to remove pulp tissue, debris and microorganisms.41 One study showed that this tech- nique was able to dissolve the tis- sue tested at a biomechanical level higher than that of conventional irrigation.42 More research is needed to determine whether this approach is effective in the root canal system with minimal invasiveness or no canal preparation.

Conclusion

According to current knowledge, en- dodontic pathology is an infection induced by bacteria in particular by biofilm. From a biological per- spective, endodontic therapy must be directed toward the elimination of microorganisms and the pre- vention of possible reinfection.43 Unfortunately, the root canal sys- tem, with its anatomical complex- ity, presents a considerable envi- ronment for the effective removal of bacteria and biofilm adherent to the root canal system. The technological ad- vances of instruments have brought significant improvements in the ability to shape the canal walls, with fewer procedural complications. In the management of the infected root canal system, various antimicrobial agents have been employed. Fur- thermore, some clinical measures, such as an increase in apical prepara- tion and a more effective system of irrigant delivery and activation of irri- gant, can promote and make more predictable the reduction of intracana- rial bacteria, especially in complex anatomic and root canal situations.

Dr Nicola M. Grande is Assistant Professor of Endodontics at Università Cattolica del Sacro Cuore in Rome. He completed his PhD at the same university in 2009, with a thesis on an innovative technique he has developed for cleaning endo-odontically treated teeth. He has contributed to the development of various instrumen- tation systems and new techniques, and holds international patents in the fields of endodontics and oral surgery. Dr Grande has published extensively in international peer-reviewed journals and contributed to several books of endodontic interest.

Dr Gianluca Gambirasio is Professor of Endodontics at the Sapienza University of Rome’s dental school. He is an interna- tional lecturer and researcher, and actively collaborates with a number of manufac- turers all over the world to develop new technologies, operative procedures and materials, for root canal treatment. Dr Gambirasio also works in a private endodontics practice in Rome.

mCME SELF INSTRUCTION PROGRAM

CAPPimsa together with Dental Tribune provides the opportunity with its mCME Self Instruction Program a quick and simple way to meet your continuing education needs. mCME offers you the flexibility to work at your own pace through the material from any location at any time. The content is international in origin, ranging from the upper echelon of dental medicine, but also presents a regional outlook in terms of perspective and subject matter.

Membership

Yearly membership subscription for mCME: 1.000 AED

One-time membership subscription: 2.500 AED per issue. After the payment, you will receive your membership number and allowing you to start the program.

Completion of mCME

• mCME participants are required to read the continuing medical education (CME) article published in the mCME, each article offers 2 CME Credit and are followed by a quiz
• Each quiz offers 2 CME Credit and are followed by a quiz
• Each quiz has to be returned to events@cappmsa.com or faxed to 00971 1 330 42 72
• A minimum passing score of 80% must be achieved in order to claim credit
• No more than two answered questions can be submitted at the same time
• Validity of the subscription – 1 year
• Validity of the article – 3 months
• Collection of Credit hours: You will receive the summary report of your completed mCME questionnaires online, which is available on www.cappaomsa.com/mCME/questionnaires.html
• Questions must be submitted within 3 months after the expiry date of your subscription
• You can take the same quiz twice.

The answers and critiques published herein have been checked carefully and represent author opinions about the questioned subjects. Articles are available on www.cappmsa.com after the publication.

For more information please contact events@cappmsa.com or +971 3 486 6975.
Long-term clinical success in the management of compromised intertooth spaces utilizing small-diameter implants

By Dr Paul S. Perstrang, USA

Management of edentulous sites in the oral cavity with dental implants has been well documented in dental literature during the last 40 plus years. Patients seeking tooth replacement for partial or totally edentulous situations have been able to enjoy natural appearing and functioning prosthesis that are fixed, stable and, in some cases, so natural it is difficult to ascertain a dental implant restoration for a tooth restoration.

Using dental implants to replace the natural tooth system in the esthetic zone has also seen an increase in restorative treatment plans and, with the advent and perfection of immediate restoration protocols initially reported in the literature, achieving natural soft-tissue esthetics around dental implants can be predictable and successful. However, certain clinical situations can complicate or negate the procedure all together.

One of these complications is insufficient intertooth spacing between natural teeth and, most commonly, congenitally missing lateral incisors following orthodontic treatment. Often as a solution to this, the dentist chooses a removable partial denture or some type of resin-bonded bridge, both of which may not be appealing to younger individuals. In extreme cases, the dentist may elect to proceed with a fixed bridge, which would cause excessive destruction to the natural teeth serving as abutments and, for a young individual, this could be devastating to these teeth during a 40-50 year period, if not sooner.

To properly form an ovate pontic type emergence profile in the soft tissue, which is required for a fixed bridge to have a natural clinical appearance, consideration must be given to the intertooth edentulous space. This is also very important when choosing dental implants for natural tooth replacement. Wallace, Michaud and Salama, et al. stated that an implant site requires, for a normal two-piece implant, the implant should be placed at least 1.5 mm from the adjacent teeth. As a result, using a 3.5 mm diameter implant, the minimum inter-tooth space to support interproximal bone and natural soft-tissue papillary contours should be 6.5 mm, and with a 4.0 mm diameter implant, 6.0 mm for the edentulous space. Often, the intertooth space in these types of cases is smaller than 6.0 mm.

Taking these parameters into account, small-diameter (or, mini) implants (3.0 mm is the smallest from most dental implant manufacturers) should not be used in cases with less than 6.0 mm of inter-tooth space, to prevent potential tooth root damage, crestal bone loss and unnatural appearing gingival tissues and papillae.

Small-diameter implants were developed more than 20 years ago and, initially, the recommended use was to support temporary removable prostheses during the healing phase for advanced bone-grafting procedures and/or conventional implant placements. Their use was later expanded into immediate conversion of full dentures into implant-supported dentures, support for partially edentulous cases and for anchorage of single tooth implant restorations in compromised inter-tooth spaces. Implants are available from 1.8 mm diameter to 2.8 mm diameter and offer a fixed permanent tooth replacement option for patients that otherwise would not be able to have implants placed and restored. Their ease of use andatraumatic placement utilizing a flapless approach, with only one coring procedure, as well as simplistic abutment transfer and provisional construction, make the use of these implants in the aforementioned sites a must for the dental implant practice.

The following case report will demonstrate the use of the Dentatus ANEW (Dentatus USA, Ltd, New York, NY) implant for the management of the compromised, congenitally missing lateral space in a 17-year-old teenage girl and a 10-year clinical follow-up.

Case report
A 17-year-old, non-smoking female presented for tooth replacement in the congenitally missing maxillary left lateral incisor site (Fig. 1). The patient had recently completed orthodontic therapy, and the orthodontist and general practitioner had agreed that this was the final obtainable result in regard to the remaining intertooth space between the maxillary left central incisor and maxillary left canine (Fig. 2). The resultant intertooth space was less than 3.5 mm, and conventional two-stage implants with abutment options were ruled out. The patient and her parents ruled out conventional tooth replacement options and chose the minimally invasive procedure, a small-diameter implant, 1.8 mm in diameter, which would allow for natural papillary contours to be developed.

After administration of an appropriate local anesthesia, an ovate pontic contour was created utilizing a football-shaped diamond in the attached, keratinized tissue of the edentulous site (Fig. 3). This scalloped-type tissue contour helps in the creation of the natural appearing papillary contours.

The small-diameter implant chosen, a 1.8 mm x 14 mm Dentatus ANEW Implant was then placed after a sin...
Fig. 5. Immediate postoperative clinical view.

Normally would have to proceed with a fixed bridge, was demonstrated in the text of this article. Availabil-

Fig. 6. Immediate postoperative radiograph.

ity handled and require implants 3.0 mm wide or less, as

Fig. 7. Lab-processed, long-term provisional restoration.

The management of compromised intertooth spaces

Fig. 8. 10-year postoperative clinical view.

presents a challenge for the contemporary dental im-

Fig. 9. 10-year postoperative CT axial view.

plant team. These spaces have limits on how they are

An ion shell provisional crown was then hollowed out

Conclusions

and remodeled to the abutment coping with flowable

The management of compromised intertooth spaces

composites. The margins of the provisional were cor-

presents a challenge for the contemporary dental im-

rected and provisional contoured out of the mouth.

plant team. These spaces have limits on how they are

The restoration was polished and seated with the set screw

restored to the abutment coping with flowable

from the palatal. The immediate postoperative clinical

composite. The margins of the provisional were cor-

view is seen in Fig. 5. The immediate postoperative peri-

rected and provisional contoured out of the mouth.

apical view is seen in Fig. 6.

The patient then went through the three-month healing

An ion shell provisional crown was then hollowed out

and observation phase prior to construction of a lab-pro-

and remodeled to the abutment coping with flowable

cessed provisional restoration (Fig. 7). One year later, the

composite. The margins of the provisional were cor-

patient underwent final restoration fabrication at the

rected and provisional contoured out of the mouth.

patient underwent final restoration fabrication at the

The restoration was polished and seated with the set screw

patient underwent final restoration fabrication at the

from the palatal. The immediate postoperative clinical

from the palatal. The immediate postoperative clinical

was placed on the 14 mm spade drill to full
depth, within the sculpted tissue emergence profile

view is seen in Fig. 5. The immediate postoperative peri-

previously created (Fig. 4). Conversion to anesthetic pro-

apical view is seen in Fig. 6.

The patient then went through the three-month healing

visioned coping with a silicon retention screw (Dentatus

and observation phase prior to construction of a lab-pro-

USA, New York, N.Y.).

cesses and temporization in extrac-

cesses and temporization in extraction

and healing sites. Compend

Fig. 10. 10-year postoperative clinical view.

crosses and temporization in extraction

and healing sites. Compend

future restoration and place the abutment

future restoration and place the abutment

further restoration and place the abutment

further restoration and place the abutment

In consideration of the benefits of osseointegrated

In consideration of the benefits of osseointegrated

In consideration of the benefits of osseointegrated

In consideration of the benefits of osseointegrated

implants, the luxury

implants, the luxury

implants, the luxury

implants, the luxury

of dental implants with no prepara-

tion and/or reduction to the adjacent

tooth.

Proper placement procedures and restorative techniques can lead to

very esthetic results, allowing for natural tissue contours and en-

gurce profile formation, reminiscent of the natural tooth.

References


4. Kan JY, Rungcharasangk I. Immediate placement and provision-

4. Kan JY, Rungcharasangk I. Immediate placement and provision-

4. Kan JY, Rungcharasangk I. Immediate placement and provision-

4. Kan JY, Rungcharasangk I. Immediate placement and provision-


5. Saadoun AP. Immediate implant placement and temporization in extrac-


The full list of references is available from the publisher.
Sticks to the teeth – not the instruments

The direct restoration of multiple defects, in particular old restorations with secondary caries, places considerable demands on both the clinician and the materials.

In this case, the patient presented with insufficient restorations (Fig. 1). The restoration margins revealed leakage and discoloration. The gap between 35 and 37 was particularly irritating for the patient. The X-ray image (Fig. 2) revealed secondary caries and the approximal situation. The teeth involved were cleaned, as were the adjacent teeth, while waiting for block anaesthesia to come into effect. The placed Flexi Dam permitted a good overview and provided good conditions for drying the work area and thus for a permanent adhesive bond between tooth and restoration. The old restorations were removed entirely and the secondary caries was excavated (Fig. 3). ONE COAT 7 UNIVERSAL was used as adhesive. ONE COAT 7 UNIVERSAL is an MDP-based, light-curing single-component bonding agent which can be applied in self-etching, selective etching or total etch techniques. The tooth surface is conditioned with Enhtact Gel S and an S.P.E.C. 3 LED lamp is used for polymerisation (Fig. 4).

After excavation of the secondary with insufficient restorations (Fig. 9), the pulp chamber and the acid conditioning is indicated. Selective etching of the enamel with Enhtact Gel for 90 sec is followed by a shortened Total Etch for 10 seconds (Fig. 5). Then the etchant was removed thoroughly by rinsing for 20 seconds and the cavities were dried with care. Immediately afterwards, ONE COAT 7 UNIVERSAL was applied with a brush to maintain adequate moisture and to avoid complete cover prior to placing the matrix (Fig. 6). The adhesive is gently flushed with an air blower and polymerised with the S.P.E.C. 3 LED lamp for 10 seconds.

A variety of partial matrix systems are available for a sophisticated design of the approximal surfaces. Here we used a ROEKO tension-free steel matrix band and trimmed it to the desired length as a partial matrix. This band is available in different widths and material strengths.

The nonelastic properties of the material make anatomical customisation extremely easy. The thickness of the band in the area of the contact point can be minimised effectively by thinning. Fixation and basal sealing of the trimmed partial matrix is performed with a wooden wedge, and for lateral sealing the band edges are pressed to the tooth surface using a clamping ring.

The design of the approximal surfaces (Fig. 7) with BRILLIANT EverGlow A3/D3 (Fig. 8) is very simple. The final result achieved with a composite filling material allows the occlusal surface to be designed using an EVA file and any bond- ing expressed basally from the matrix is removed, and the translation from the tooth to the restoration is brought to the same level. The matrix is applied distally to premolar 35 and sealed basally with a wooden wedge and laterally with a clamping ring. ONE COAT 7 UNIVERSAL is applied and gently air-cleaned after an exposure time of 20 seconds. ONE COAT 7 UNIVERSAL is polymerised with the S.P.E.C. 3 LED lamp for 10 seconds (Fig. 9). The matrix has now been stabilised by bonding, is then thinned out swiftly using a zirconium round burr in antimicrobial rotation, yet without water. The desired result is a tight, spherical contact. Approximal convexity can be customised very easily in this manner. This is again followed by designing the approximal surface with BRILLIANT EverGlow A3/D3 as well as the anatomical morphology of the occlusal surface. Due to the well sealed partial matrix and assisted by the clamping ring, the finishing of the approximal surfaces is minimally invasive. Using the EVA file, the result is already very satisfactory (Fig. 10). An occlusal contact is stabilised and additional final corrections were performed. Polishing takes little time as BRILLIANT EverGlow delivers its gloss very quickly. After the restorations were brought to a high gloss using an occlusal polishing programme, the restorations are more than satisfactory (Fig. 11). The applied layer method of the BRILLIANT EverGlow submicron filled hybrid composite in combination with the ONE COAT 7 UNIVERSAL adhesive delivers very good results. The S.P.E.C. 3 LED polymerisation lamp provides reliable curing of both restoration materials at high conversion.

Conclusion and comments regarding the initially demanded material properties.

Submicron hybrid composites offer an impressive rapid and consistent gloss. Appropriate shades and an easy to achieve gloss due to intelligent filler design provide the desired and sustainable aesthetics.

Permanent protection against leakage in the marginal region is a prerequisite. The high density and composition of the filler particles of the BRILLIANT EverGlow composite optimise the results in terms of reducing shrinkage and the resulting lower shrinkage stress.

The clinical long-term objective of sealed restoration margins can be achieved with even greater certainty when using a reliable adhesive such as ONE COAT 7 UNIVERSAL, which was used here.

By Dr. Ralph Schönemann, Germany

Compared with indirectly fabricated restorations, the effort is considerably less, as these generally require a temporary restoration as well as a second treatment session following conventional impression-taking. The fabrication of individual full ceramic restorations after optical scanning and subsequent automated fabrication is, of course, a single appointment alternative, does however, require investment in this technology. One prerequisite for the successful, direct preparation of restorations with purely light-curing composite materials in the layering technique, is avoiding tension during volumetric shrinkage which occurs during polymerisation.

The adhesives and hybrid composites should be compatible with each other and offer good long-term performance. This is reflected both in invitro tests as well as in vivo long-term studies.

Sticks to the teeth and not the instruments. One of the requirements for state-of-the-art adhesives and composites is safe handling during the preparation of the restoration. This implies a good uniform wetting layer when applying the adhesive and convenient modeling properties of the hybrid composite which allow the clinician safe adaptation to the bonded tooth.

Submicron hybrid composites offer an impressive rapid and consistent gloss. The filler composition should enable achieving an ‘impression’ of the tooth surface during preparation and polishing.

Permanent protection against leakage in the marginal region is a prerequisite. Last but not least, the result achieved with a composite in terms of colour, gloss and abrasion has to be reliable in the long term. This result is complemented by a technically reliable adhesive through permanent impermeability of the restoration margins. The practical implementation of a direct restoration, combining adhesive and composite, and an evaluation of the prerequisite material requirements, are discussed in the following case study.

Sticks to the teeth – not the instruments. The design of the approximal surface is given a spherical lower shrinkage stress.

The clinical long-term objective of sealed restoration margins can be achieved with even greater certainty when using a reliable adhesive such as ONE COAT 7 UNIVERSAL, which was used here.
BRILLIANT EverGlow®
The glow of the art

→ Outstanding polishability and gloss retention
→ Brilliant single-shade restorations
→ Ideal handling through a smooth consistency
→ Good wettability on the tooth surface

https://everglow.coltene.com

Fill-Up!®
Filling in a single step – Hole in One

→ Optimal depth polymerisation with minimal shrinkage due to dual curing system restoration.
→ Guaranteed single-layer technique – even in very deep cavities of 10 mm
→ Optimised sealing of margins – reduced post-operative sensitivity
→ Universal shade in a convenient Automix syringe for efficient placement

Efficiency and esthetics in the posterior region

Since bulk-fill composites have been on the market for a number of years, the time has come to take a look back at the introduction, development, current trends and future options of these materials.

By Dr Eduardo Mahn, Chile

When bulk-fill composites first hit the market, they were considered a true innovation. We had been layering posterior composites for more than 40 years, yet many of us were not quite sure for what reasons the layering technique was mandatory. Understanding the reasons why a certain technique is applied is crucial for the correct assessment of the pros and cons of any technique.

Basically, the reasons were four:

1. Aesthetics: It is obvious that a layering technique involving dentin, enamel and effect shades leads to a better final outcome than a technique that uses only a single layer in a standard translucency. As regards the bulk fill technique, this reason can easily be rejected because, objectively, most posterior restorations are almost always placed using one shade only and most patients are satisfied with the result.

2. Reduction of volumetric shrinkage: The less composite we place, the smaller the volumetric shrinkage.

3. Reduction of shrinkage stress: This reason makes sense and is based on the configuration factor. It is said that the shrinkage stress is reduced if the unbonded surface area of a layer is larger than the bonded surface area. Although there is enough in-vitro evidence on the relevance of the C-factor, a clinical correlation has not yet been shown. This point can be easily illustrated by the fact that Class-I restorations have an unfavorable C-factor but a high survival rate while Class-V restorations have a favorable C-factor but a low survival rate. This example shows that the C-factor is only one of many factors that determine the success of a direct restoration – and frequently not the most important one.

4. Depth of cure: This is probably the most important factor because increments of only 2 mm could be applied before the advent of bulk fill composites. If it is true that the depth of cure of certain composites is even lower than 2 mm, this was the reason why all layers were restricted to a maximum thickness of 2 mm. If not, the composite material placed in the deeper areas of the cavity would never receive enough light to cure adequately. Having discussed all these factors, we may realize that we are not so far from the bulkfill technique. If a composite is capable of reducing the stress when applied in thick layers and, at the same time, offers an increased level of translucency and a more effective light-curing process, the bulk fill technique is feasible. In most cases, shrinkage stress relievers are responsible for the reduction of shrinkage stress. Shrinkage stress relievers are fillers with a lower modulus of elasticity. Their function is to release the stress as the composite polymerizes. The second aspect, i.e. the depth of cure, was achieved by making the composites more translucent with the effect of enhancing the passage of light through the material. As a result, the depth of cure was increased. This point has also been proven to be true. In addition, some companies such as Ivoclar Vivadent® improved the polymerization process in deep areas by adding newly developed initiators (e.g. IvoKit®) to the formulation.

Nowadays, all major dental manufacturers offer bulk-fill composites. Bulk-fill composites can basically be categorized into two main groups: first, flowable bulk-fill composites requiring a final capping layer, and second, sculptable bulk-fill composites. Generally, these materials increase the efficiency of the restorative workflow as they allow the fillings to be placed with either a single-increment technique (sculptable composite) or a two-increment technique (dentin replacement with flowable composite and capping layer with sculptable composite). These methods are obviously faster and easier to perform than conventional layering procedures. However, this advantage is undermined by the fact that bulk-fill materials are generally too translucent and allow discolorations to shine through the restorations, especially if they are used to replace an amalgam filling. Nevertheless, clinical evidence has shown that the results achieved with the new bulk fill methods are comparable to the results achieved with conventional multi-layer techniques.

Fortunately, new developments often pave the way for new technologies. By this I mean the Aessencio technology developed by Ivoclar Vivadent®. The Aessencio technique allows a composite to be highly translucent prior to being light-cured and causes a drop in translucency as it polymerizes. Once polymerized, the material exhibits a dentin-like translucency and is capable of effectively masking most discolorations. Practitioners can follow a very efficient procedure to accomplish fillings due to the Aessencio technology of Tetric EvoFlow Bulk Fill and the combination with Tetric EvoCeram Bulk Fill as the final capping layer. Two steps will be enough in most clinical situations. At the same time, patients will receive a sufficiently aesthetic restoration. In addition, the entire adhesive restorative protocol has become more predictable with the recent introduction of universal adhesives, as they have eliminated the need for dentin etching. Dentin etching was one of the reasons for the variability and sensitivity of the adhesive technique in the past years. A recently published meta-analysis showed the importance of predictable clinical protocols as the correlation between in-vitro tests and clinical performance is poor. Furthermore, there is growing evidence in clinical trials and elsewhere that self-etch protocols show a favourable performance. The clinical case below demonstrates how these materials are used.

Clinical case

A 33-year-old patient presented with a failing amalgam restoration on the upper right 4 with no interproximal contact (Fig. 1). After the amalgam filling had been removed and a rubber dam placed (Fig. 2), a matrix, wedge and ring were inserted (V4 Triodent). The enamel was etched with phosphoric acid (Total Etch) and then rinsed with water (Fig. 3). Subsequently, the adhesive (Adhese Universal) was applied with
IPS e.max® ZirCAD
The perfect combination of strength, esthetics and translucency

- Polychromatic MT Multi discs for efficiency and highly esthetic restorations
- High flexural strength and fracture toughness for a broad indication range
- Low wall thicknesses for less invasive preparations
- Three translucency levels (MO, LT, MT) for natural esthetics
Chairside CAD/CAM immediate restorations

Anterior no-preparation ultrathin veneers

By Drs Feng Liu & Xing Liu, China

Introduction

No-preparation ultrathin veneer is one of the most minimally invasive restorations. Its thickness ranges from 0.3 to 0.5 mm. In the right circumstances (Figs 1 & 2) it can show excellent aesthetic appearance, and provide long-term stability and health of soft- and hard-tissue.

The overall structure of ultrathin veneer is flexible, in that its neck can gradually change from thick to thin, and the border can be knife-like or thin round-convex (Figs 3 & 4).

Manufacturing inlays, onlays, crowns and veneers chairside with a CAD/CAM system has become established in most dental offices. This technique can produce immediate scan, design, milling and restoration quickly and conveniently. It is the same for the no-preparation ultrathin veneer. For chairside CAD/CAM systems, CEREC is the most developed system.

The biocopy mode, which is widely used for restoration design, has target contours such as wax up. In this mode, the operator should scan the original tooth shape in the mouth or on the model first, then wax up and re-scan the wax-up shape into the CEREC system. Both optic impressions will transfer into the virtual model, and match to each other to obtain the restoration contour information. Depending on the 3D data, chairside milling can be complete in a few minutes. Post-milling processes usually contain shaping and polishing.

Case report

A 72-year-old female patient presented, whose dentition had apparent colour changes and abrasions that had occurred gradually over time.

These problems resulted in an uneven smile and made her appear older than her age. She also made a request for a highly comfortable and minimally invasive treatment plan, and expected an improvement in the colour and shape of her upper anterior teeth, which would rebuild her smile and self-confidence (Figs 5 & 6).

It was found that due to the abrasion which had occurred several decades, the labial surface was plane and flat, the incisors had been worn to a straight line and also had abrasion-associated defects (Figs 7 & 8).

The no-preparation veneer that would occupy the “outer space” of the teeth would result in the slight wrinkles around the lips. These effects were part of the patient’s expectations and the treatment plan was accepted.

Taking the treatment requirement and oral condition into consideration, the patient was prepared for the ultrathin no-preparation veneer. Digital Smile Design (DSD) was done based on the pre-operation photos (Figs 9 & 10), and the patient was satisfied with the aesthetic appearance of the design.

The patient wanted her teeth colour to seem natural and to disguise the discolouration. The treatment plan was confirmed as CEREC designed and manufactured Mark II (VITA) veneer of 0.3 mm thickness, A3 shade, and the material was chosen for its excellent aesthetic performance and translucency.

Conclusion

To sum up, the “bulk-fill” technique using Tetrix EvoFlow Bulk Fill and Tetrix EvoCeram Bulk Fill allows us to be more efficient with almost no compromises compared to the conventional layering technique. The C-factor is no longer an issue due to the shrinkage stress relievers. As expected, marginal gaps do not occur more frequently and are not larger compared to the conventional layering technique. Application is clearly quicker and the aesthetic effect is in most cases similar to that of conventional laminar composites. The differences in the translucency of materials for conventional posterior composite restorations are no longer of relevance due to the Aessencio technology. This sets a new standard in this group of composites.

Dr Eduardo Mahn

Director of Clinical Research and of the Aesthetic Dentistry

Post-Graduate Program, Facial and Aesthetic Dentistry, Universidad de los Andes, Chile

Monseñor Álvaro del Portillo 12455, Las Condes, Santiago, Chile

Private practice: Clínica IPS, Las Condes, Santiago

E-mail: emahn@miuandes.cl

Figure 1: No-preparation veneer is adapt to the teeth with flat surface.

Figure 2: When the teeth have apparent curvature, no-preparation veneer may have weak contact area. Micropreparation veneer is more appropriate.

Figure 3: Ideal gradual thinning no-preparation veneer.

Figure 4: Acceptable round convex no-preparation veneer margin with a little thickness.

Figure 5: Frontal view pre-operation.

Figure 6: Frontal smile view pre-operation.

Figure 7: Upper anterior dentition view pre-operation.

Figure 8: Upper jaw view pre-operation.

Figure 9: DSD dentition view pre-operation.

Figure 10: DSD smile view pre-operation.
Upgrade now to the No.1 in-office whitening treatment\(^1\)

Philips Zoom WhiteSpeed:

- Whitens up to eight shades in 45 minutes
- 99% of patients experience little to no sensitivity
- LED light-activated whitening technology

Ask about Philips Zoom today. Call (800) 2122 or visit philipsoralhealthcare.com

innovation ∗ you

1 in the U.S.
Fig. 11: Precise pre-operation model.

Fig. 12: Pre-operation scan.

Fig. 13: Wax-up based on pre-operation model.

Fig. 14: Biocopy model.

Fig. 15: Biocopy optic model accurately match with pre-operation model.

Fig. 16: Setting the insertion direction and margin of the restoration.

Fig. 17: Finished restoration design.

Fig. 18: Designed restoration prepared to mill.

Fig. 19: Ready veneers before cementation.

Fig. 20: The thickness of the finished restoration is 0.3 mm.

Fig. 21: Try-in: frontal view of upper anterior dentition.

Fig. 22: Try-in: incisal view of upper anterior dentition.

Fig. 23: Try-in: lateral view of smile.

Fig. 24: Try-in: lateral view of smile.

Fig. 25: Four-year follow-up: frontal view of upper anterior dentition.

Fig. 26: Four-year follow-up: frontal view of smile.

Fig. 27: Four-year follow-up: lateral view of upper anterior dentition.

Fig. 28: Four-year follow-up: lateral view of upper anterior dentition.

Fig. 29: Four-year follow-up: lateral view of smile.

Fig. 30: Four-year follow-up: lateral view of smile.

Fig. 31: Four-year follow-up: frontal view of face.

Fig. 32: Four-year follow-up: lateral view of face.
PROFESSIONAL PLAQUE CONTROL FOR OPTIMAL GUM HEALTH

Dual Action Antiplaque System:
CHX (Chlorhexidine Digluconate) and CPC (Cetylpyridinium Chloride)

- Help reduce dental plaque accumulation
- Prevent growth of bacteria and toxins
- Non-irritating alcohol- and SLS-free formula
- Help soothe sensitive gums

TWO INTENSITY LEVELS of CHX for plaque control at every stage of the treatment

www.sunstargum.com
could save the patient's chairside waiting time; the biocopy technique can simplify the design process; milling the restoration with a 0.5 mm original thickness and polishing after milling will decrease the risk of milling defect.

The exact process can be concluded as:

1. Obtain a precise pre-operation impression, and make the model. Use a CEREC scan to obtain information about the abutment teeth (Figs. 11 & 12).
2. Depending on the DSD result, make a wax-up on the pre-op model. The thickness of wax up should be from 0.3 mm to 0.5 mm. Get the biocopy scan of the wax-up model, and match accurately with the pre-op model (Figs. 13-15).
3. Setting the margin of the abutment teeth, the marginal edge line is not fixed because of the no-preparation technique. The direction of insertion should be defined first, which can cover most areas of the labial surface, incisal edge and adjacent surfaces. The border of the covered area should be the margin of the restoration (Fig. 16).
4. Shape formation of the restoration. Copy the target shape of the biocopy model, the restoration should be calculated automatically. If there is any defect, it can be adjusted and corrected by the tool. If there are any areas not thick enough for 0.3 mm, it should be added to 0.5 mm to avoid fractures during the milling process (Figs. 17 & 18).
5. Modifi cation and polishing of the initial restoration to 0.3 mm thick after milling. And fi ne polishing of the fi nal restoration (Figs. 19 & 20).
6. Intratemporal try-in, fi ne adjustment and cementation (Figs. 21-24).
7. Four-year follow-up and recheck. The restorations are as excellent as before and the margins are tightly sealed, the colour is stable, there is no margin coloured or whole colour changing. The patient is very satisﬁ ed with the aesthetic performance and function. A charming smile appearance has given her more conﬁ dence and vigour (Figs. 25-29).

Conclusions

The no preparation veneer is a kind of restoration with high precision requirement and manufactured difﬁ culty. It is usually fi nished in laboratory. Getting benefi t from chairside CAD/CAM techniques, immediate restorations in one appointment can be achieved, dentists can invite the patients to observe the process of restoration design and manufacture, and even get involved into the design. Patients may feel that they are participating in the treatment, establishing an emotional connection with the restoration, which may also make them more easily accept and love their restoration. The value of increasing the satisfaction should not be ignored.

Biocopy design is the combination of traditional aesthetic design and digital virtual design. It is also the most convenient and fast technique. Nowadays, 3D virtual technique is becoming more and more established. Using 3D techniques directly to make a virtual design may also get wonderful restoration performance; it can be predicted that this pattern will become the mainstream of digital aesthetic design in future.

Restoring function and aesthetics with monolithic zirconia restorations

By Dr Ara Nazarian, US

With greater public awareness about cosmetic dental reconstructions, the dentist is often challenged with greater demands from the patient. This increased demand for aesthetic restorative treatment challenges the dentist, laboratory technician and dental manufacturers to develop techniques and materials to satisfy the increasing demand for aesthetic performance. The case presented in this article demonstrates the signifi cance of a systematic approach to planning, preparation and material selection in full-mouth reconstruction of a patient’s dentition.

Case presentation

A woman in her early forties was referred to my practice by her den- tal provider because she was dissatisfied with the appearance of her smile. The patient explained that she felt that her existing teeth and restora- tions were unattractive because of recurrent caries, wear and colour (Fig. 1). Most importantly, she mentioned that she was suffering from tension headaches, grinding and a limited range of function.

Initial diagnostic evaluation at the fi rst appointment consisted of a series of digital images with study casts, a centric relation bite record, a facebow transfer and a fullmouth set of radiographs. In the maxillary arch, the patient had several teeth with worn composite and veneer restorations, as well as abstractions with cervical caries. In the lower arch, several existing composite restorations had worn and exhibited caries on the faci- cal cervical areas. Although there were no restorations present in the mandibular anterior teeth, there was severe wear of the incisal edges, possibly due to grinding and other parafunction.

Planning

After reviewing the clinical fi ndings and the mounted models, the pa- tient was diagnosed with a restricted vertical dimension from continuous wear. In order to develop a treatment plan and determine whether the vertical dimension could be increased, a diagnostic D White Wax-Up (Ar- rowhead Dental Laboratory) was fab- ricated (Fig. 4).

In the wax-up, the vertical dimen- sion was increased by 15 mm. Also, based on information gathered from the initial consultation and digital images, it was determined that the maxillary central incisors could be lengthened by 1.5 mm to improve the aesthetics. The canines would also be lengthened to restore canine guidance in lateral excursions. Regarding the mandibular ante- rior teeth, the goal was to correct the length-to-width ratio and create a less prominent smile.

As a result of the information gath- ered from the diagnostic wax-up, it was determined that aesthetics and function could be enhanced by restoring the entire dentition. The fi nal treatment plan would consist of crown restorations, placing compos- ite cores where needed from teeth #12-27 in the upper arch and teeth #7-26 in the lower arch.

The material of choice for these crown restorations would be Ze- noster (Wieland/Vivadent). According to the manufacturer, this translucent zirconia material com- bines excellent f lexural strength with the aesthetics of natural tooth shades.

With full-contour Zenoster resto- rations, there are two methods of achieving the desired shade: the Ze- noster brush, inﬁ ltration technique or the Zenoster staining technique. Six pre-shaded zirconia blanks can be used to produce the patient’s natural dentition. Owing to their warm, red- dish nuance, Zenoster Zr Transparent is suitable and can be used for patients whose own natural dentition deviates from the classical tooth shades.

Preparation

Once informed consent had been ob- tained from the patient, treatment was initiated.

After anesthesia had been adminis- tered, the existing veneer and crown restorations were removed and the teeth cored with composite if there was any indication of recurrent caries remaining in the respective tooth.

Adhesive Universal bonding agent (Vivadent Vivadent) was applied fol- lowing the manufacturer’s protocol and cured using the Ultrabrite LED curing light (Vivadent Vivadent). Us- ing MultiCore Flow Light (Vivadent Vivadent), build-ups were accom- plished on the teeth that required cores. A Clear Reduction Guide (Ar- rowhead Dental Laboratory) pro-
Most importantly, the patient said that she no longer experienced discomfort in her temporomandibular joint and that her bite had never felt better. Since no adjustment or modification of the temporary was needed, the dental laboratory was instructed to replicate the White Wax-Up when fabricating the definitive restorations.

**Laboratory considerations:**

The White Wax-Ups, colour photographs, impressions and bite relations were forwarded to the dental laboratory (Arrowhead Dental Laboratory). A scan of the White Wax-Ups was used to select an appropriate arch form, tooth size and occlusion from the library of teeth available in the 3Shape software (Fig. 7).

Using 3Shape Communicate, images of the proposed reconstruction were forwarded to my office by e-mail. Any minor adjustments in tooth shape and contour were communicated with the technical adviser to achieve the most ideal aesthetics. Once approved, the milling process was begun (Fig. 8).

**Cementation**

Before try-in of the definitive restorations, the provisional restorations were removed using the Easy Pneumatic Crown and Bridge Remover (Dent Corp) and any remaining provisional cement was cleaned off the prepared teeth. The maxillary and mandibular zirconia restorations were tried in to verify fit, form and shade. After the patient had been shown the retracted view for acceptance, the cementation process was initiated.

A full-arch impression was taken using Instant Custom Trays (Good Fit). Made of a proprietary material (PMMA) that becomes mouldable when heated in boiling water, these trays provide a quick, efficient way of capturing a dimensionally accurate impression with uniform thickness of the impression material.

Once moulded and customised to the patient’s maxilla and mandible, full-arch impressions were taken using a heavy and light polysiloxane impression material (Panasil, Kettenbach).

After the impressions had been completed, a bite relation jig fabricated on the White Wax-Up models was tried in the mouth. Medium-body impression material (Panasil) was placed into the relation jig and seated in the patient’s mouth on to the prepared teeth (Figs. 5 & 6).

The patient was asked to bite into the relation jig until she reached the vertical stops and the material set. Instructions for the size, shape, colour and position for the definitive restorations was forwarded to the dental laboratory (Arrowhead Dental Laboratory), as were the White Wax-Up models. Also, a stump shade (Ivoclar Vivadent) was selected for shade matching of the preparations to assist the laboratory technician in creating natural-looking restorations.

**Provisionalisation**

Provisional restorations, which would aid in determining the best size, shape, colour and position for the definitive restorations, were made from Sil-Tech (Ivoclar Vivadent) impressions of the White Wax-Ups provided by the dental laboratory.

Using the #37–46. intraoral scanner (Kettenbach), the Sil-Tech mould was quickly filled and placed on the patient’s prepared dentition. Within minutes, the provisional restorations were fabricated and effortlessly trimmed with trimming burs (Komet). Once the teeth had been desensitised with Systemp. Desensitiser (Ivoclar Vivadent) and dried, the provisional restorations were temporarily cemented using Temp-Bond Clear (Kerr). The patient was instructed about their care and use in eating, speaking and biting.

A few weeks later, the patient returned for evaluation of aesthetics, phonetics and bite. Already, she exhibited excitement about and confidence with her provisional restorations, commenting that all her coworkers had remarked that she looked younger and happier.

Most importantly, the patient said...
restorative
dried to the extent that they were still slightly moist. At this time, the cement capsules were depressed consecutively to activate and placed in the ultramat 2 (SDI) amalgamator for only ten seconds for trituration.

Using the applicator dispenser (SDI), the cement was loaded into the restorations (Fig. 8), starting from the midline and working distally. With a very low film thickness and creamy consistency, riva luting plus cement was dispensed into the restorations with easy insertion and seating.

Removal of excess cement was cleaned up in about two minutes at the gel phase. After the cement was fully set at five minutes, the occlusion was verified and adjusted. The overall health and structure of the soft tissue and restorations were very good. The patient was extremely satisfied with the definitive results (Figs. 10–12).

The occlusion was checked and verified with T-Scan (Tekscan) to make sure that all of the proper points of contact were in their ideal positions to ensure longevity of the reconstruction. The patient no longer experienced pain and was very pleased with her new enhanced smile (Fig. 10).

Conclusion
In conclusion, having a systematic method for treatment planning, material selection, tooth preparation and cementation, the dental provider will be able to address the needs of the patient more effectively and efficiently. Because of this and more, the final outcome will be much more predictable aesthetically and functionally.

Acknowledgement
Special thanks to Chris Barnes and his staff at Arrowhead Dental Laboratory for the fabrication of the restorations depicted in this case.

Editorial note:
This article was published in the 2/2018 issue of CAD/CAM International magazine of digital dentistry.
Certificate & Diploma in Clinical Endodontics

From British Academy of Restorative Dentistry

DUBAI دبي 2019-2020

Certificate  |  3 Modules  |  12 Days
---|---|---
Module 1 | 21-24 March 2019 | 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 lateral compaction techniques.

Module 2 | 19-22 June 2019 (4 days) | Aetiology 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.

Module 3 | 26-29 September 2019 (4 days) | Traumatic Injury. Pain and Its Management
Programme outline: Emergency endodontics and diagnosis in depth. Odontogenic and non-odontogenic pain. Diagnosis and management.
Hands-on: Rotary Niti and advanced thermoplastic obturation techniques.

Diploma  |  3 Modules  |  12 Days
---|---|---
Module 4 | December 2019 (4 days) | Dental Resorption and Pattern of Tooth Fracture & Implant Prosthodontics
Programme outline: Understanding advanced endodontic problems. Handling endodontic failure alternatives related to implants.
Hands-on: Reciprocating Niti and Carrier based thermoplastic obturation techniques & Implant prosthetic and surgery on phantom heads.

Module 5 | March 2020 (4 days) | Restoration of Endodontically Treated Teeth
Hands-on: Placement of core restorations and post retained restorations.

Module 6 | June 2020 (4 days) | Management of Endodontic Failure
Programme outline: Endodontic retreatment, surgical endodontics.

+971 528423659 | p.mollov@cappmea.com
www.cappmea.com/endo

Group 3 Registration Open  Pathway to UK Masters  168 CME & Daily Hands-on
Anterior restorations with CAD/CAM veneers made of VITABLOCS Triluxe forte

By Dr. David Jäger, Dr. Martin Hammer & Carmen Scheibling, Germany

Prosthetic restoration of the maxillary incisors is a challenging task for dentists and dental technicians. In the following case study, the authors Dr. David Jäger, Dr. Martin Hammer and Carmen Scheibling (dental technician), describe how they treated a complex initial clinical situation step-by-step with the CAD/CAM feldspar ceramics VITABLOCS Triluxe forte (VITA Zahnfabrik, Bad Säckingen, Germany).

Case study
A patient presented in the dental practice with severe discoloration caused by a course of tetracycline given to her as a child. The psychological strain on the 38-year-old patient was increased by the palatal inclination of teeth 11 and 21. She was looking for a quick and efficient solution which would meet her expectations in terms of aesthetics without having orthodontic pretreatment. The practitioners, the dental technician and the patient therefore decided on a digital workflow with the feldspar ceramics VITABLOCS Triluxe forte. The material allows for a natural look in the anterior tooth area thanks to its integrated shade gradient.

Mock-up phase
A wax-up was made using dental impressions and used as the foundation to discuss the treatment goals with the patient. Using a silicone index and composites, mock-ups were produced similarly in the laboratory. The severely discolored middle incisors were modified, as well as the length and gradient of the incisal edges for 12 and 22. “During the trial, the patient was quickly convinced of the potential positive results and decided on four veneers,” dental technician Carmen Scheibling reported at the final planning meeting. This was followed by a minimally invasive preparation of the teeth and impressions being taken. The removal of tooth substances ensures that the discoloration is covered.

CAD/CAM process
“Corrected and duplicated the mock-up and scanned in the plaster model in the laboratory,” said Scheibling, explaining the next steps. The master model made during the preparation was also digitalized. “In order to cover the severe discoloration, we decided on the multi-chromatic VITABLOCS Triluxe forte blank, due to its integrated harmonic shade gradient,” the dental technician said, justifying the choice of material. Thanks to the mock-up data set, the restorations could be created in the lab using the CEREC SW 3.8 design software and milled using the CEREC MC XL milling system (Sirona Dental, Bensheim, Germany).

Individualization and integration
“[I] worked with a well-balanced mixture of VITA VM 9 CHROMA Plus 2 and CP3 during the individualization. I was able to achieve more light dynamics on the distal and mesial edges with EFFECT OPAL 2,” said the dental technician, describing the formative and shading individualization steps. After the try-in, small corrections and the glass firing, the final adhesive integration came next. Carmen Scheibling concludes that “the result was a happy and satisfied patient.”

The article was originally published as das dental labor 2/2018, Verlag Neuer Merkur, Germany.

VITA and other VITA products mentioned are registered trademarks of VITA Zahnfabrik H. Rauter GmbH & Co. KG, Bad Säckingen, Germany.
Certificate & Diploma in Clinical Implantology

From British Academy of Dental Implantology & British Academy of Restorative Dentistry

Faculty Leads:

Prof. Goran Urde, Sweden
Programme Director of Implantology
Postgraduate Education Faculty of Odontology, Malmo University

Prof. Paul Tipton, UK
Specialist in Prosthodontics
President, British Academy of Restorative Dentistry

Prof. Arwa Al ALSayed, Saudi Arabia
B.D.S., M.S., M.Sc., M.C.D.

Prof. Christo Dahlin, Sweden
Specialist Oral & Maxillofacial Surgery, Professor in Oral Surgery and Guided Tissue Regeneration

Dr. Ninette Banday, UAE/USA
B.D.S., M.P.H., D.M.Sc., Diplomate ICOI, FICD
Specialist Restorative Dentist & Implantologist

Certificate  |  3 Modules  |  12 Days

Module 1 | 17-20 October 2018 (4 days) | Basics of Implantology
Programme outline: implant market, osseointegration, treatment alternatives, treatment planning and patient selection, basic surgical techniques and protocols. Hands-on training: surgical techniques and medico-legal aspects to implant dentistry.

Module 2 | 31 Jan – 03 Feb 2019 (4 days) | Treatment Planning and Surgical Treatment
Programme outline: implant design, radiographic techniques, implant surgery, implant specific treatment planning. Basic practice management.

Module 3 | 25-28 April 2019 (4 days) | Restorative Aspects of Implantology
Programme outline: restorative techniques, prosthetic hands-on training, patient treatment, follow-up and oral hygiene, complications to avoid and treat. In depth practice management.

Diploma  |  3 Modules  |  12 Days

Module 4 | 01-04 August 2019 (4 days) | Immediate and Early Loading Concepts and Treatment of the Resorbed Jaw
Programme outline: tooth now concept, immediate and early loading concepts from single tooth to fully edentulous patients, severely resorbed jaws, sinus lift and ridge splitting techniques, hands-on training and live patient surgical treatment.

Module 5 | 17-20 October 2019 (4 days) | Medical Compromised Patient and Soft and Hard Tissue Management | Esthetic and Restorative Challenging Patient
Programme outline: medications related osteonecrosis, GBR techniques, soft tissue management, implant aesthetics, ceramics and implants.

Module 6 | 12-15 December 2019 (4 days) | Rare Complications and Techniques
Programme outline: rare complications, combination implants and teeth, live patient treatment, written and oral examination and case presentations.

15 Neoss Implants & Lab Work Included | Live Treatment Hands-On (40%) | 168 CME Available

+971 528423659 | p.mollov@cappmea.com
www.cappmea.com/implant

CAPP / TIPTON
Dental Academy
British Academy of Dental Implantology

DUBAI | دبي 2018-2019
Interview: “I believe that innovation is the engine of a company”

By Dental Tribune International

Founded in 1890, W&H today operates globally as a leading manufacturer of dental instruments and devices. With over 1,200 employees worldwide, the company exports its products to over 110 countries. The family-owned business runs two production sites in Bürmoos and one in Brusaporto in Italy, as well as 19 subsidiaries in Europe, Asia and North America. Recently, W&H President Peter Malata sat down with Dental Tribune to discuss the enduring success and philosophy of the company.

Only a few dental companies worldwide can look back at a 125-year history. In your opinion, what are the main reasons for the long-standing success of W&H?

There are several factors to which I would attribute our successful participation in the dental market for such a long time. Firstly, innovation. W&H’s history is a story of numerous technological developments and innovations, such as the Roto Quick coupling, the first push-button chuck system for turbines, the first high-speed contra-angle handpiece for preparation up to 200,000 rpm, Assila, also world’s first cleaning and maintenance unit, Lisa, the first Class B sterilizer available on the market, Syna Vision, the first turbine with y+ ring LED+, and our latest innovation, the Primus Advanced Air turbine. We have continuously provided products and services—tailored customer solutions made in Austria—that not only support dentists and their teams on a daily basis, but also make their daily work easier. Our products are used in dental practices, dental clinics, dental laboratories, and units and maxillo-facial surgeries in over 110 countries around the world.

Secondly, our internal apprentice-ship programme is of particular priority to us. We regard this as an investment in the future. With our comprehensive training programme, we not only focus on the professional education of young people, but also support their personal development.

Third, we rely on continuity: we put an enormous amount of trust into our employees. Team spirit is of utmost importance to us. The level of education of our workforce is very high and expertise is passed on from colleague to colleague. Additionally, we rely on a generational mix within our teams and a long-lasting staff membership, enabling continuity and thus productivity at a very high level.

As a member of the Malata family, you have headed the company for over 20 years. Looking back, what have been the most significant developments or achievements during that time?

I took over the business from my father, Consul Di Peter Malata, in 1996. My goal was not only to grow the business, but also to keep our processes lean. That’s why I decided in 1998 to introduce a team-oriented structure in the company, just to name one significant measure of many. Today, about 700 employees at our headquarters in Bürmoos are organised into over 100 teams.

Another important cornerstone was the internationalisation of W&H. Today, we operate three production sites—two in Bürmoos and one in Brusaporto—and 19 subsidiary companies around the globe.

How do you approach innovation at W&H?

The basis for W&H’s steady growth is the consistent employment of state-of-the-art technologies and a dedicated focus on research and development. I believe that innovation is the engine of a company and my personal goal is to create more room for it. The continuous expansion of our B & D department involves not only the hiring of additional staff, but also the creation of workplaces that allow for an open and foster creative collaboration and communication. In addition, we focus on collaboration with universities and research centres, as well as obtaining ongoing feedback from users regarding their experiences.

Currently, around 15 per cent of our employees work in the R & D department at our headquarters. The focus of their activities is on innovative, high-quality medical devices and intelligent solutions for our customers and partners. The goal is optimal support for dentists in their day-to-day work with advanced hardware and software solutions. The close cooperation between the development and manufacturing departments has allowed W&H to respond quickly to changes in the market and incorporate customer requirements into new, sustainable solutions.

In addition, of course, the products have to work intuitively, reliably and, above all, precisely.

Our products are characterised not only by innovative solutions, but also by many small details that make a real difference in the daily work of our customers.

You recently announced your acquisition of Swedish company Ostell. How has this step complemented your offering?

Ostell and W&H have successfully worked together since 2016. The first result of this cooperation was the new Implantmed with the integrated Osstell ISQ module. Ostell is known for its implant stability measurement and osseointegration monitoring products. The acquisition was part of our strategy to expand into the surgical segment. Our aim is to broaden our competence and strengthen our position as a leader in the field of implantology.

In addition to your production facilities in Austria and Italy, you currently maintain subsidiaries in 19 countries around the world. What are the key markets for you, and where do you see most potential for growth in the future?

W&H is active globally and our efforts are extended to all markets. We do of course have specific goals for the different markets according to their needs. To identify these, we have our 19 subsidiaries, 16 area managers, and a vast number of outstanding and reliable partners, who allow W&H to guarantee rapid delivery and seamless technical service anywhere in the world.

In recent years, we have also established subsidiaries in China and India and strengthened our sales activities in the Asia Pacific region. These are the markets in which we see the greatest potential at the moment.

The dental market is changing faster than ever before. What are your strategies for staying ahead in this challenging environment?

Our main goal is to provide true added value to our clients with all our products and services. As mentioned before, we are focused strongly on R & D and—I am personally very proud to say—doing so with great success. The Primus Advanced Air, for example, recently received the Staatspreis Innovation [national innovation award] from the Austrian Ministry of Economy.

With the Primus Advanced Air turbine, the rotation speed of the bar can now be set precisely and as a result of electronic regulation remains constant even when the contact pressure increases during the treatment. In addition to the innovative drive technology, the turbine offers all the advantages of a W&H Syna Vision turbine.

Finally, the interconnectivity of our products and services is playing an increasing role, for example the option to control our tools via a smartphone or tablet, and automated inventory management and service scheduling.

Where do you see W&H in the next ten to 20 years?

W&H has further expanded its position in the global dental market—and appreciated by customers and respected by competitors.

Thank you very much for the interview.
Mastership Programme
Lasers in Dentistry
Certification Course

From Aachen Dental Laser Center & RWTH International Academy - RWTH Aachen University & CAPP

Prof. Dr. med. dent. Norbert Gallingen
DDS, MS, PhD
Germany

Dr. Dimitris Strakas
DDS, MSC, PhD
Greece

Dr. Miguel Rodrigues Martins
DDS, MSC, PhD
Portugal

Priv.-Doz. Dr. rer. medic.
Rene Franzen
Germany

One-year clinical specialisation course for selected wavelengths

DUBAI, UAE
Module 1 | 21-24 November 2018 (4 days) | Laser Safety, Laser Devices and Diode Lasers
Laser Safety Officer course | e-learning | Laser technique (Diode lasers) | High power Diode lasers (clinics) |
Scientific background and clinical indications | Skill training every day of every clinical indication | Patient treatments (demonstrations)
Hands on: Pigmentation on soft tissue, gingivectomy and gingivoplasty, frenectomy, fibroma removal, crown lengthening, depigmentation, endodontic procedure - canal irradiation performed on sheep heads | Patient treatments (demonstrations)

DUBAI, UAE
Module 2 | 06-09 March 2019 (4 days) | Module Erbium Lasers
Erbium Lasers (clinics) | Laser technique (Erbium lasers) | Er:YAG and Er:Cr:YSGG | Scientific background and clinical indications |
Skill training every day of every clinical indication | Patient treatments (demonstrations)
Hands on: Preparation in enamel and dentine, generation of a retentive surface, canal decontamination, apicectomy, soft-tissue cut with short pulses, soft-tissue cut with long pulses, open curettage, crown lengthening and bone preparation performed on sheep heads. | Patient treatments (demonstrations)

AACHEN, GERMANY
Module 3 | 08-11 December 2019 (4 days) | Combined Wavelengths Therapy Concepts & Mastership Exams
Laser therapy concepts with the use of 2 different wavelengths | Written multiple-choice exam |
Oral Exam (presentation of 5 patient treatments cases with diode or Erbium lasers) |
Graduation Ceremony, after successful completion of an examination at RWTH Aachen University |
600 hours total workload | Over the complete course duration: case documentation & discussions

The programme targets dentists who would like to specialise in certain wavelengths. Over the course of one year, participants are taught fundamental physical and technical knowledge, and how to recognise primary, secondary, and tertiary indications on 12 attendance days split into 3 modules held over 3 educational blocks. This programme concludes with an official certificate of RWTH Aachen University, and is offered in collaboration with the RWTH Aachen International Academy, the post graduate education wing of the University.

+971 528423659 | p.mollov@cappmea.com
www.cappmea.com/laser
**Interview: “Clear, step-by-step instructions are essential for long-term success”**

By Kasper Mussche, DTI

Dental professionals should be empowered to instruct and motivate their patients to maintain proper oral hygiene. iTOP, short for individually trained oral prophylaxis, is a hands-on training programme developed by Dr Lil Leducq and organised by Swiss oral health company Curaden that teaches dental professionals to set up patients for a lifetime of perfect oral care through practice, correct tools and techniques, and motivation. Dental Tribune Online spoke to iTOP Top-Level International Lecturer and Instructor Dr Mia Girotto—a driving force behind iTOP’s success—who has been training professionals and students worldwide for over 12 years.

**ITOP gives knowledge to dental students and professionals. What do you expect them to take from a session?**

Visitors to an iTOP training session can expect to finally learn how to brush their teeth correctly. Our aim is for dental students and professionals to realise that they are patients as well and should incorporate the correct use of tools, techniques and knowledge taught during our seminars into their own oral health regimens. They should realise one needs many iTOP sessions to get to the desired level of knowledge and practice, and retain this. As such, clear, step-by-step instructions are essential for long-term success. It is based on practising our knowledge on a daily basis for ourselves and, eventually, on motivating and setting up patients for a lifetime of optimal oral health. Secondly, we want them to get interested and involved in iTOP, and get them to realise the potential of iTOP’s philosophy for their work. So in short: practise what we preach, recall for us as well. We are patients too, the rules apply to us as well.

**What is the advantage of an iTOP session for professionals?**

In many things dentistry, you can do the perfect job, whether it be as a general dentist, specialist or technician, but if there is no compliance from the patient, restorations or other medical procedures will end up in failure. Regardless of the excellence of the work that was put in, patients should be correctly trained and motivated to maintain good oral hygiene after a procedure. If dental professionals taught their patients the correct techniques, and gave them the correct tools and knowledge, this would definitely set them apart from other professionals and would also prevent failure.

**Aside from your iTOP activities, you work as a periodontist and implantologist. How does that influence your vision for iTOP?**

ITOP has definitely been very useful in complementing these two fields. In both, success rates are very dependent on proper oral hygiene maintenance and patient motivation. How can dental professionals motivate their patients? There are many ways to motivate a patient. There are even documented schools and methods, but some of the basic advice would be: do not argue with the patient, find out what his or her own reason is for the visit and stick with that. Try to be as supportive as possible and keep in mind that this is a process that needs time—even the smallest progression deserves acknowledgement.

**How does iTOP fit in with the Curaden philosophy?**

When I say I have gained a new family, and made many friends and met so many wonderful people and colleagues along the way, it has become a passion, an inseparable part of me both professionally and personally. I really do enjoy giving lectures on iTOP and training people.

**What about your vision for the future? Where do you want to see iTOP go personally?**

A long time ago, I jokingly said, “It’s time for iTOP to conquer the world”. What I meant by that is that I want iTOP’s benefits, knowledge and techniques to become available to everyone in the world, not only dental professionals.
Planmeca Romexis® is the only dental software platform in the world to combine CAD/CAM work and all imaging data. Take advantage of the software’s advanced specialist tools and create a new standard of care for patients.
How to avoid back pains in dental work

By Veli-Jussi Jalkanen, Finland

The pains caused by the common back degeneration, which is the result from traditional ergonomics, are the constant nuisance in dental work. Avoiding this threat is relatively easy with the new better posture that can be achieved by sitting on a divided swaying saddle chair, using looser clothes, and positioning oneself closer to the patient.

This concept includes also numerous other advantages. The leading Finnish ergonomics company has developed the solution for the dental ergonomics and health problems, and is spreading it around the world.

Why are lower back degeneration and pains so common?

Normal 90/90 sitting (90 degree angles in hips and knees) is actually C/90 sitting with the rounded back. Thus the facets are open and not carrying their part, and the pressure on the disc is 30% bigger. The increased one-sided disc pressure is the main reason for disc prolapse (Fig. 1).

The roundness of the back also stretches the back muscles and makes them tense, slowing down the blood and lymph circulation. The weakened oxygen and nutrient intake and waste removal degenerate all tissues in the (lower) back, causing numerous impacts and pains. The missing vertebral arteries around the L5 halves the flow of nutrients and oxygen for the L4 and L5, and that is why they are the first to degenerate (Fig. 2).

Dental work is challenging due to our anatomy

We humans still have the Stone Age hunter-gatherer anatomy and physiology. Slouched and immobile sitting is very unnatural and a great health risk. The musculoskeletal system is well and healthy when the back is in a good posture and mobile.

The spine and vertebrae are not only holding the body upright, the vertebrae are systematically also connected to the health of many organs. Poor spine care and problems in it trigger also other health issues.

Solution: How to keep the posture good and the back healthy

The divided swaying saddle chair restores the posture and keeps the back undegenerated, healthy, and without pains. The keys for the new ergonomics is to raise the patient chair higher, to sit closer to the patient, and to wear looser and more comfortable clothes (Fig. 3).

This new ergonomics is very friendly and healthy also for the genital and internal pelvic health (prostate, erectile functions, female infections), and knee and hip health as well. The 135 degree angle is so much better for the knees and hips than 90 degrees. If you can treat every 4th patient standing it would improve health and productivity even more (Fig. 4).

Mr. Veli-Jussi Jalkanen
He is the Chairman of the Board of Salli Finland and CEO of Salli China. Being a specialist in work environment and preventive health, and having a riding background, he developed the Salli Saddle Chair and Salli sitting health concept. He has found strong connection between traditional / poor sitting and many common degenerative illnesses. The unique swinging and divided Salli seat is exported to over 60 countries.

Editorial note:
The article was originally published in Dental Asia Magazine, January/February 2018.
Philips to launch ProtectiveClean range at BDIA Dental Showcase

By DTI

LONDON, UK: The BDIA Dental Showcase, was held from 4 to 6 October at ExCeL London, provided the backdrop for the latest product launch by Philips Oral Healthcare. The ProtectiveClean toothbrush range features Sonicare’s sonic cleaning technology at its core, producing 32,000 brush sweeps a minute and creating the dynamic fluid activity necessary for a penetrative-clean, according to the company.

The ProtectiveClean range also features a 2-minute timer and a pressure sensor. The latter of these provides real-time feedback to ensure that users are not brushing too hard, thereby minimising their risk of gingival damage and recession. Owing to its Optimal Plaque Control brush head, ProtectiveClean has been clinically proven to remove seven times more plaque than a manual toothbrush, according to Philips. The brush head also features new BrushSync radio-frequency identification device technology. This is intended to monitor usage and alert the patient when it is time to replace the brush head.

The ProtectiveClean range addresses multiple price points, making good oral hygiene more accessible to a far wider cohort of patients. The ProtectiveClean 4300 includes one inbuilt cleaning mode, with two intensity settings to provide users with a tailored clean. The handle comes with two Optimal White brush heads, a travel case and charger.

Philips exhibited at Stand J22 at the BDIA Dental Showcase. There, visitors were able to find a number of key opinion leaders conducting a series of workshops and carrying out light-activated tooth whitening demonstrations, while introducing the latest clinical evidence for Zoom Chairside.

More information can be found at www.philips.co.uk/sonicare.
A Dentsply Sirona predominant practice

Class II Solution

By Dr. Ahmed Soliman Idris, Egypt

Dr. Ahmed Soliman Idris is the founder of Welldent Clinic which was established six years ago in Cairo. Two branches are now open, one in Dokki and one in Fifth Settlement. Dr. Ahmed Soliman Idris graduated with a MSc & PhD in Fixed Prosthodontics. He is a lecturer at the Faculty of Dentistry Cairo University since 2001 and a lecturer at the Faculty of Dentistry British University in Egypt since 2013.

Dr. Ahmed Soliman Idris started using the Dentsply Sirona Class II Solution 2 years ago. We caught up with him to find out how the Class II Solution has helped him better manage restorative performance and give his patients an improved Class II experience.

Please explain briefly why you choose a career in dentistry?

For me, dentistry is a science combined with art and this is what I like. The passion of changing a person’s life by creating a beautiful, healthy smile is one of the most intangible rewards of being a dentist.

What does “Class II” mean to your practice?

Class II restorations are part of my daily work. On average, I fill around 5 to 6 cavities per day which represents around 30% of the total restorations I am doing – getting this procedure right the first time is essential.

In your opinion, what is the most challenging part of a Class II composite restoration?

I think the most challenging part of a Class II restoration is the creation of a proper contact. The main difficulty is to make a proper contouring of the contact area in a short time and with great precision to avoid food accumulation and subsequent periodontal problems later on.

For how long have you been using the Dentsply Sirona Class II Solution?

I have been using the Palodent V3 sectional matrix system with great success for 2 years. 8 months ago, my Dentsply Sirona sales representative visited my clinic and conducted a demo on the new Prime&Bond universal. He also gave me a sample of SDR and ceram.x SphereTEC which enabled me to try and see if the products stacked up against the current system I was using. Since then, I have been using the complete Dentsply Sirona Class II Solution daily and I am totally satisfied with the results I achieve.

There is a variety of Class II materials on the market. Why do you choose to use the Dentsply Sirona Class II Solution?

I chose the Dentsply Sirona Class II Solution because of the precision and the simplicity it offers. Dentsply Sirona provides you with the complete solution and takes in consideration the fine details of each step of the Class II restoration to make the overall restoration a success.

Which product from the Dentsply Sirona Class II Solution do you prefer most and why?

Palodent V3 because it completely solved the main challenge of a Class II restoration which is creating a proper contact. Palodent V3 is not just a ring but a full solution including the matrices, wedges and the wedge guards, which when used together saves a lot of time.

Success factors for a dental practice are profitability, image and safety. How has using the Dentsply Sirona Class II Solution enabled you to reach these 3 keys success factors for your practice?

Dentsply Sirona’s Class II Solution makes the procedure more efficient and the outcome more predictable. I have already recommended the Class II Solution to many colleagues. Dentsply Sirona is the world’s largest manufacturer of professional dental products and technologies – Besides from the Class II Solution do you recommend any other products?

Yes I do. I would recommend CEREC as I have already been using it in my clinic since 2007. CAD/CAM technology has conquered its position in the world of dentistry, and now we can see the difference in term of quality and time consumption when we use digital dentistry in place of the traditional methods. For me, the advantages of CEREC are:

- User friendly software.
- Innovative and new updates that we receive directly from Dentsply Sirona.
- The quality of the scanners which give us accurate optical impressions.
- From the patient point of view, they can get their crown in the same day with no need for unpleasant impressions in their mouth. This is a real comfort for them.
King’s College London celebrates research awards at July’s IADR in London

By King’s College London

Professor Gordon B. Proctor received the 2018 IADR Distinguished Scientist Award in Salivary Research, one of the 17 IADR Distinguished Scientist Awards, representing one of the highest honours bestowed by the IADR. The IADR Salivary Research Award is designed to stimulate and recognize outstanding and innovative achievements that have contributed to the basic understanding of the salivary gland structure, secretion, and function, or salivary composition and function.

Proctor is a leading salivary researcher with specific expertise in salivary secretion, the interaction of saliva with oral surfaces and the significance of salivary biomarkers. “It is a pleasure to work with talented colleagues, students and collaborators to answer research questions that impact on health and disease. Receiving this award from the IADR is marvellous and a great recognition of our endeavours,” said Professor Proctor.

Professor Paul Sharpe and co-authors Lu Yang, Ana Angelova Volponi and Yvonne Fang received the William J. Gies Award, for the best paper published in the IADR/AADR Journal of Dental Research in the Biomaterials and Bioengineering Research category. Their article “Mesenchymal Cell Community Effect in Whole Tooth Bioengineering” (J Dent Res 96: 186-191) was identified as work which has very significantly advanced knowledge in dental research.

Ana Angelova Volponi says: “Our research focuses on the underlying mechanisms of repair and regeneration. King’s College London is at the forefront of this field and this award, for the second time, is another recognition for our Centre of Excellence.”

King’s researchers were presented with two prestigious awards during the Opening Ceremonies of the 96th General Session of the IADR, held in conjunction with the IADR Pan European Regional Congress at the ExCel London Convention Centre.

5th place in Shanghai rankings for Dentistry & Oral Sciences

By King’s College London

Dentistry & Oral Sciences research at King’s has been ranked 5th in the world in the 2018 Shanghai Global Rankings, up from 7th place last year. King’s College London is the only institution outside the United States to have made the top five in the academic ranking of world universities.

Executive Dean Professor Mike Curtis says: “It’s a tremendous accolade for the Faculty at King’s to be ranked as one of the world’s top five institutions for research in dentistry alongside four of our competitors in the United States. This achievement reflects the commitment, enthusiasm and excellence of a large number of academic and professional services staff in the Faculty and I wish to both congratulate and thank all of them for their achievements.”

Shanghai Ranking Consultancy is a fully independent organization dedicated to research on higher education intelligence and consultation. It has been the official publisher of the Academic Ranking of World Universities since 2009.

Global Ranking of Academic Subjects

For exclusive taster content visit kcl.ac.uk/distancedentistry

email distancedentistry@kcl.ac.uk

@KingsDentistry

Part-time | Online teaching | Face-to-face intensive training

Blended learning courses for working dentists

Explore our sample content online

Range of subjects open for January 2019 entry
- Advanced Minimum Intervention Dentistry MSc
- Aesthetic Dentistry MSc
- Dental Cone Beam CT Radiological Interpretation Postgraduate Certificate
- Endodontics MSc
- Fixed & Removable Prosthodontics MClinDent
- Maxillofacial Prosthetic Rehabilitation MSc

RANKED NUMBER TWO IN THE WORLD FOR DENTISTRY

QS WORLD UNIVERSITY RANKINGS 2018

Dental Tribune Middle East & Africa Edition | 5/2018

37
<table>
<thead>
<tr>
<th>DISTRIBUTORS</th>
</tr>
</thead>
</table>
| **Distributor:** Castle General Trading  
**Product Name:** AirFloss Ultra  
**Description:** Philips Sonicare AirFloss Ultra is clinically proven as effective as floss in improving gum health. In fact, floss it removes up to 99.9% of plaque that brushing missed.  
**Contact Details:** Tel: +971 4 3328795 | Email: cgtdub@emirates.net.ae  
P.O.Box 37356 | Dubai | UAE |

| **Distributor:** Castle General Trading  
**Product Name:** Jordan Oral Hygiene Products  
**Description:** Jordan Oral Care is a world wide brand of Oral Hygiene Products consisting of toothbrushes and interdental products.  
**Contact Details:** Tel: +971 4 3328795 | Email: cgtdub@emirates.net.ae  
P.O.Box 37356 | Dubai | UAE |

| **Distributor:** DME  
**Product Name:** LEDERMX® Paste  
**Description:** LEDERMX® offers: Rapid analgesia and effective re-dusing of catarrhal omanas plus simple appli-cation make it highly effective in all particularly ...  
**Contact Details:** Tel: +971 4 3328795 | Mob: +971 55 4472400  
dt_uae@emirates.net.ae | www.dme-medical.com |

| **Distributor:** DME  
**Product Name:** LIso Press ingots  
**Description:** GC Initial LiSi Press is the first lithium disilicate ceramic ingot with High Density Mermanization (HDM), a technology unique to GC.  
**Contact Details:** Tel: +971 6 3308055 | Mob: +971 55 4472400  
dt_uae@emirates.net.ae | www.dme-medical.com |

| **Distributor:** SWAN  
**Product Name:** Black edition Techne Black Prism  
**Description:**- Sporty and wraparound design  - Ergonomic frame for an optimal weight distribution  - High optical quality  
**Contact Details:** Tel: +971 04 699059 | Mob: +971 55 4472400  
dt_uae@emirates.net.ae | www.swanmedsupply.com |

| **Distributor:** Scorpios International LLC  
**Product Name:** Vintage LD – The Better Lithium Disilicate  
**Description:** Now available in lithium disilicate for the ce-ramic lovers The One Visit Crown(OVC) com-bines a pre-formed occlusal layer ...  
**Contact Details:** Tel: +971 4 3328795 | Mob: +971 55 4472400  
dt_uae@emirates.net.ae | www.dme-medical.com |

| **Distributor:** Scorpios International LLC  
**Product Name:** BluTab  
**Description:** BluTab is specially formulated to be continu-ously present in your water lines and to keep lines clean  
**Contact Details:** Tel: +971 4 3328795 | Email: cgtdub@emirates.net.ae  
P.O.Box 37356 | Dubai | UAE |
BREAK THROUGH TECHNOLOGY

BEAUTIFIL II IS

A low shrink universal direct restorative for

predictable, functional & durable aesthetics

See you at 10TH Dental Facial Cosmetic Conference on 09 & 10 November 2018, SHOFU Booth No. 29

For more information, simply contact your nearest SHOFU Dealer TODAY!
From a patient to a fan.
With first-class dental solutions by W&H for every challenge.

#patient2fan
Together we make it happen!
The new Swiss Endo Academy Training Centre

FKG Dentaire is proud to announce the opening of its new Training Centre in Dubai

By FKG Dentaire

FKG Dentaire SA (La Chaux-de-Fonds, Switzerland), leader in innovation and production of high-tech rotary Ni-Ti systems, is highly committed in worldwide Continuing Education for dentists.

After having set up its Training Centre in 2014 (Swiss Endo Academy), based at the company’s headquarters, FKG Dentaire is proud to announce a new Continuing Education Centre, located at its representative office, FKG Dentaire DMCC (Dubai, UAE).

This Centre exhibits the latest generation of high-end equipment (operating microscopes, phantom heads,...) and offers a real simulation laboratory, allowing general dentists and specialists, to enhance their clinical experience while exposed to the latest endodontics Ni-Ti systems, more particularly to 3D Ni-Ti treatments range: the XP-Endo® sequence.

The centre of the Swiss Endo Academy in Dubai has been inaugurated on February 5, just before the AEEDC congress, in the presence of the top management of the mother company and the entire IMEA team of FKG Dentaire.

FKG Dentaire DMCC
Swiss Tower | Cluster Y | Office 1502
PO Box 450280 | JLT | Dubai | UAE
Tel: +4971 445 222 40
Email: mea@fkg.ch
Web: www.fkg.ch
FB: www.facebook.com/FKGDentaireIMEA

Training table with 24 seats, monitors, FKG training kits, Endo motor and Apex Locator, Labomed Microscopes, Phantom Heads, Surgery LED lights, Dental Stools

Discover our products on the booth
Droguerie Tamer S.A.L.
Internal resorption treatment using MTA-based endodontic sealer

Clinical Case Report

By Dr. Fábio Duarte da Costa Aznar, Brazil

Male patient, 32 years old, presented with clinical classification of pulp necrosis of dental elements 11 and 12 (Fig. 1), associated with the presence of internal resorption, being subjected to endodontic treatment on both elements. He reported a history of dental trauma in childhood, and had previously undergone an urgent intervention in element 21 by another professional, due to edema and pain in the apical region. Due to the presence of fistula in this region, it was traced and found to originate from dental element 21 (Figs. 2 and 3).

After the initial approach of the patient, he was anesthetized and absolute isolation was prepared. Afterward, the coronary access was made, during which the pulp necrosis of both teeth was clinically identified. A crown-down disinfectant penetration was done, using NaOCl at 3% as an irrigating agent, with a technique performed by the X-ray method (Fig. 4) due to the feasibility of using a foraminar locator in these anatomical conditions, which could influence its precision. The preparation was done by the step-back preparation technique, using K Files (Maillefer/Switzerland) and NaOCl 2.5% as an irrigating agent, seeking to dilate the whole root canal formation. With each change of instrument, ultrasonic irrigation was done with smooth inserts (Brachial/Brasil) using the PUI and CUI concept (Fig. 5). As a complement to the intra-canal deconamination process, two fifteen-day exchanges of calcium hydroxide were done (Ultrasil/Ultradent/ USA), also aiming at analysis of the quality of cleaning obtained in the area of resorption by the radiopacity of this medication (Fig. 6). The obturation was done using the Tagger Hybrid thermomechanical technique (Figs. 7 and 8), through the use of Gutacondenser (Maillefer/Switzerland), cones of TP gutta percha (Dentsply/Brazil), and Fillapex MTA-based sealer Angelus/Brasil (Fig. 9). After the thermocompaction, the cut of the obturation, vertical condensation with the use of CUI, cleaning of the pulp chamber, and immediate provisional restoration were done (Fig. 10).

The sealing of the ramifications and resorptive areas was observed radiographically, as well as the presence of silent postoperative. The preservation was done after three months. It demonstrated restoration of the Fillapex sealer and new bone formation in the apical region of both teeth (Fig. 11).

Interview: “Endodontic treatment is an invaluable therapeutic technique”

By DTI

From 4 to 7 October, the world of endodontics will be meeting in the South Korean capital of Seoul for the 11th International Federation of Endodontic Associations (IFEA) World Endodontic Congress (WEC). In light of the event, which has attracted dental professionals from all around the world for many years, Dental Tribune Online spoke with IFEA WEC 2018 Co-Chairperson Dr. Andie EuiSeong Kim.

Dr Kim, how would you describe your experience as chairperson of the IFEA WEC 2018 Seoul local organising committee?

First of all, it is my great honour and privilege to act as chairperson of the local organizing committee. I’ve learnt so much while preparing for this gathering. I would like to express my sincere appreciation to everyone for the support they’ve shown us so constantly. I feel so blessed, and it could not have been done without that cooperation and support.

Second, I have been pleased to see Korean dentists demonstrating their excellent capability. They perform excellent endodontic treatment, even in poor environments, and all the techniques of endodontic treatment are controlled under the government-led health insurance system. I can confirm that these researchers are conducting world-class research. Finally, it has been a valuable experience to feel the unity of the members of the Korean Academy of Endodontics.

The theme of this year’s meeting is “Endodontics: The utmost values in dentistry”. Can you explain what is behind this and how you identify with it?

Endodontic treatment is an invaluable therapeutic technique that can keep natural teeth healthy. The reach of its use depends on the country, and it is felt sorry that endodontic treatment has been more neglected and I have felt sorry that endodontic treatment has been more neglected than other fields, given its importance. We have various difficulties, especially with the limited choices for dentists, because of the government’s medical insurance system.

With this point of view, we came to the idea of going back to the basics and asked ourselves a fundamental question: what is most important for national oral health? A healthy building may be nice to look at, but it will not last long if the groundwork is not done properly. Likewise, our efforts to keep our natural teeth healthy for life should never be underestimated.

Why do you think meetings such as IFEA’s WEC are important for the endo community?

This is an absolutely necessary meeting. The American Association of Endodontists meeting, the European Society of Endodontontology meeting and the WCE of IFEA are the standard meetings of international endodontic societies, but while the meetings arranged by the first two associations are locally constrained, the IFEA gathering is the only academic congress that covers international endodontic treatment. Membership of IFEA continues to increase, and 36 countries have enrolled in IFEA as member countries. It is natural that there’s level of difference depending on the country, and I believe everyone will level up through this kind of meeting. By doing so, we can contribute to the positive development of human beings, which is IFEA’s primary value. Also, the meeting promotes fellowship among endodontists and exchange of experiences and ideas. We will maximise synergy in our field by sharing information with one another.

What are your expectations/hopes for the meeting, and what are you most looking forward to personally?

I am so excited about the meeting. The largest number of participants of all past IFEA WECs will come to Korea from 70 countries all over the world. Personally, I am thrilled to meet endodontists from all over the world. I know that it will be a wonderful experience to meet participants from far away and from closer to home. Furthermore, I hope that IFEA will continue to grow into a global congress representing the whole world.

Interviewer: Dorthea Fagerman

By DTI

Endodontic treatment is an invaluable therapeutic technique.
DENTAL TRIBUNE
The World’s Dental Newspaper · Middle East & Africa Edition

Membership in mCME Program

10 CME credit hours per year
Quick and easy way to meet your needs
Flexibility to work at your own place

» mCME participants are required to read the Continuing Medical Education (CME) articles published in each issue
» Each article offers 1 CME Credit and is followed by a questionnaire online
» Participants will receive the summary report with Certificate

For more information please contact marketing@cappmea.com or call +97143476747

www.cappmea.com/mCME
Diagnosis and Outcome in Endodontics in the 3D Imaging era

Professor Francesco Mannocci, specialist in endodontics and restorative dentistry, discusses how 3D Imaging is streamlining the endodontic workflow.

By Dentsply Sirona

In recent years, a team at King’s College London has completed a number of clinical trials highlighting the importance of CBCT ( Cone Beam Computed Tomography) in diagnosis and outcome assessment in endodontics. As endodontists, we are all now familiar with the benefits of using CBCT scans to identify where the problems are within the tooth. We use this technology to help us view trauma such as tooth fracture or examine where a root canal treatment has faded.

It is well known that the presence of radiolucencies at the apex of a root is symptomatic of endodontic infection such as granulomas or cysts. In the majority of endodontic cases, the assessment of outcomes is reliant on the detection of these apical radiolucencies or exposing any change in their size.

A radiographic technique (CBCT) demonstrates far better sensitivity and specificity at detecting radiolucencies than traditional periapical radiographs. With periapical radiographs, it has been demonstrated that the number of roots cannot be seen clearly, so we are not just missing radiolucencies at the apex of the root, but missing entire root canals. It is important to remember that the radiation dose delivered to the patient must also be considered when assessing treatment modalities. A periapical radiograph delivers 0.14% of annual background radiation, rising to 0.2% with panoramic, whilst a conventional CT scan delivers 39%. A small field of view CBCT scan delivers barely 0.5%, which although around 7 times higher than a traditional scan, is in fact, much less than taking a long-haul flight, say from Paris to Tokyo, that delivers 4 times this radiation dose.

Preserving the vitality of the pulp helps to preserve the structure of the tooth, indirect pulp capping works better than direct pulp capping and we can use CBCT to help determine when indirect capping is likely to be a success or failure. Indirect pulp capping guided by CBCT can help avoid the loss of tooth structure, significantly improving the success rate of this procedure and potentially increasing the chances of survival for the tooth.

We can now also use CBCT in the actual design of root canal treatment, effectively planning access to the pulp chamber, and 2017 sees the launch of 3D endo, a new software by Dentsply Sirona, which will improve individual treatment planning using CBCT. This software will help us to visualise the direction and position of the canal and the ideal shape of the access cavity. 3D endo enables the user to isolate the tooth being treated and locates the orifice and apex of the canals. This makes it possible to add more points to the computer image, resulting in more precise tracking of each individual canal, no matter how curved they may be. The final 3D representation can be rotated 360° and allows us to determine the working length, analyse the natural shape of the canal and select the appropriate files using the integrated file database.

In root canal treatment, there is always a need for strict infection control to prevent bacteria getting into lesions and creating infection that can lead to failures. A tight coronal seal is especially important to prevent bacteria penetrating the tooth at a later stage if the tooth is particularly damaged. It is more difficult to achieve an adequate coronal seal and makes the tooth more prone to failure through bacterial infection. CBCT imaging plays a vital role in such cases, as these teeth are likely to be more prone to small cracks and fractures which are difficult to detect using traditional scanning methods.

In conclusion | CBCT is essential:

• In diagnosing external/internal resorption.
• In diagnosing traumatic injuries of teeth.
• In the assessment of endodontic outcomes in the context of clinical trials.
• For pre-surgical assessment.
• In detecting small radiolucencies in teeth with deep caries.
• As a pre-treatment radiograph before the endodontic treatment of molars, lower incisors and retreatment of premolars.
• For looking more closely at the loss of tooth structure and the success of root canal treatment.

Complex cases, nothing left to hide?

The first CBCT based software designed to improve endodontic treatment planning for more predictability.

3D Endo™ Software
Sunny prospects: Using power to achieve brightness

The layering concept using IPS e. max Ceram power materials

By Bastian Wagner, Germany

The most important factor when imitating the light-optical properties of natural dentition is brightness. It is important to be able to control this factor selectively during the production of the ceramic restoration. The new power materials in the IPS e. max Ceram range allow the dental technician to be the maestro of brightness.

The work routine in the dental laboratory and dental practice has changed a lot in recent years. Co-operation between dentist and dental technician has become multifaceted and complex. This enables the patient’s individual needs to be fulfilled on an even higher level. A prosthetic treatment plan is still an essential and fundamental factor. Contact with the patient is of great importance and the dental technician should be ideally coordinated with the patient to be the maestro of brightness.

Working with all-ceramic materials

Another important aspect for successful prosthesis treatment is the use of appropriate materials. In modern dentistry, permanently fixed restorations made entirely from all-ceramic material are highly relevant in the clinical routine. The ceramic layering materials and the multitude of framework materials available on the dental market offer a wide range of choice for a successful treatment concept – according to the different indications and the respective cases. However, due to the wide variety of products it is not always easy to select the best material. The dental technician’s job is to produce prosthetic restorations that have a long service life. Functional, biological and aesthetic perfection should be adapted to the individual needs and requirements of the patient. For this, it is essential to become familiar with the material properties of the various different materials and know the specific features of the respective ceramic range. For example, it is advisable to make individual shade samples so that the light-optical properties of the ceramic material can be seen. The materials to be used should be ideally coordinated with one another in terms of biocompatibility, stability, aesthetics, processing, chroma, brightness value and hue.

This article is an introduction into the new IPS e. max Ceram power materials. The new ceramic material’s indications and advantages will be presented using a patient case as an example.

The power concept

The well-proven IPS e.max Ceram range has been extended with the Power Dentin and Power Incisal materials. The new power ceramic materials have a higher brightness value. The IPS e.max Ceram range now includes three different brightness values and small variations of opacity and chroma.

A comparison shows that the dentin materials have the lowest brightness value and that the new IPS e.max Ceram power materials enable the highest values to be achieved. In particular, a wider spectrum is available for creating a specific esthetic reproduction in a single-tooth restoration.

The power materials are specifically designed for the following situations:

- Reproducible natural brightness on translucent frameworks
- Controllable brightness
- Vibrant alternating layering to imitate natural teeth with a high brightness value
- Stable value in this layering thicknesses
- High brightness value of minimally invasive preparations

Patient case

One of the biggest challenges for the treatment team is the reconstruction of minimally invasively prepared anterior teeth. This situation requires a great amount of attention from the dental technician. There has to be a high level of understanding for the light-optical analysis of natural teeth and the ability to implement this in ceramic in an individual layering concept. In order to achieve an esthetically harmonious reproduction, it is imperative to understand the light-dynamic characteristics of the respective ceramic range.

The power ceramic materials widen the selection range and with their high brightness value, they represent a clear added value to the IPS e.max Ceram range. The brightness value can be controlled significantly better. The dental technician can adjust the brightness throughout each of the various steps.

The versatility of the enhanced ceramic range is shown through a patient case. In this case, the patient’s two upper anterior teeth were to be restored with ceramic veneers (Fig. 4). The plan was to esthetically improve both the tooth shade and shape. The natural teeth were prepared using a minimally invasive technique. This created space for the ceramic veneers.

Determining the shade

After a joint analysis of the initial situation and desired target, the tooth shade and the light-optical characteristics were assessed. The shade guide from the respective ceramic range is important for determining the shade (hue), colour saturation (chroma) and colour brightness (value). The preoperative shade analysis showed a high brightness value and the preoperative shade analysis showed a high brightness value in the body area of both teeth. The ceramic materials, which were selected through the shade determination, were set in an individual layering concept. Figs. 2 to 4 illustrate the importance of targeted shade analysis with photographic documentation.

The power ceramic materials are especially well suited for tooth shades with a high brightness value. They make the reconstruction of young or bleached teeth easier. The advan-
tages of the power ceramic materials can be seen in this minimally invasive situation.

If the brightness value cannot be helped by the framework material, it is all the more important to use a high value ceramic. A “grayness” within the restoration is therefore prevented. A gray shimmer can occur, for example, when a translucent framework material is used or in situations where no framework is required.

Producing the veneers

In order to esthetically restore the anterior teeth, the veneers were individually built up on refractory dies (Figs 5 and 6). In this case, the prepared teeth have a slight discoloration, which needs to be masked by the ceramic layer. The high degree of reflection (value) made it possible to achieve the required brightness in a minimal layer thickness. Effect materials were used in the build-up to achieve a vibrant appearance. This way, the natural light-optical characteristics were imitated (Figs 7 to 9). An alternating layering concept, using the Power Incisal and the conventional incisal ceramic materials from the IPS e.max Ceram range, gave the ceramic veneer a very high light-dynamic effect with relatively little effort (Fig. 10). The interaction of the different brightness values created a natural in-depth effect within a minimal layering thickness (Figs 11 to 13).

Conclusion

To create a harmonious shade reproduction of natural teeth, it is important to imitate the information obtained during shade analysis using the light-dynamic characteristics in the material. The most important characteristic is the brightness (value). If this is not implemented exactly, even a non-professional will see the ceramic restoration at a short speaking distance. If the value is too high, the restoration will appear to be too white; if the value is too low, the restoration will appear to be too yellow. It is important for the dental technician to be able to influence the brightness value of a veneer. This requires suitable ceramic materials and a patient-oriented working method. The new IPS e.max Ceram power materials are a big plus in everyday laboratory life when translucent framework materials are used and with minimally invasive restorations. The brightness value can even be altered at a later stage with these materials, e.g. if the try-in shows that the brightness has to be increased. This gives the dental technician a high degree of safety, because improvements are easy to achieve. A total remake of the veneer due to correction of the brightness can be avoided in many cases.

The power ceramic materials offer more safety in imitating the brightness value of natural dentition.
Interview: “I try to bring dentists and technology together”

By Nathalie Schüller, DTI

3DIME provides guided surgery software developed for dentists, radiologists and dental technicians for the complete management of the digital dentistry workflow. The company’s offices, manufacturing facilities and training centre are located in Candin, Italy. In this interview, CEO Alessandro Motroni talks about the program, training users and the possibilities the software offers.

Mr Motroni, your software analyses and replicates in 3-D complete parts of the body to operate on bone, soft tissue, muscles, and vascular parts. Can you tell me more about it?

We focus on dentistry because of the technology allowing us to mix printing and CAD/CAM, and put all the technology available together to plan the digital workflow. With the latest version of the software, we use the cloud to bring all the team members of the planning process (technicians, dentists, laboratories) together in the same loop through mobile technology as well, allowing the dentistry team to plan on a mobile phone or an iPad, share the project, chat on the same application and produce the surgical guides, models and results with the possibility of being continuously in touch with one another. It is therefore much easier compared with standard software versions for which you need to have a computer, and many dentists hate computers.

There is an issue of safety concerning putting personal information in the cloud. It is said to be secure and then one reads about hackers accessing what are believed to be some of the safest websites. How does the older generation feel about putting information in the cloud using your application?

They are open to it because it is certified of mistakes. Furthermore, each time you have to do something manually, you lose time, and time is money.

We are now waiting for US Food and Drug Administration approval for the software because it is certified as a Class II medical device. We invest a lot of time showing potential customers at major events, such as congresses, what we are doing and promoting the software on social networks.

The word is spreading fast, we have a lot of followers on Facebook. When we have something new, our followers start sharing the information and we receive requests from dentists in Russia, China, etc.

It is quite mind-boggling. Of course, you cannot go against evolution and technology, but considering the pace of development the possibilities it creates, it is a wonder we can keep up.

Thank you very much for the interview.
Dental Technician Int’l Meeting

Joint meeting with
14th CAD/CAM & Digital Dentistry Conference & Exhibition

Save the date
12 April 2019

Contact Us
Telephone: +971 4 347 6747
E-mail: events@cappmea.com
www.cappmea.com
Oral-B launches the Oral-B FunZone, a gamification and social experience that makes brushing fun for people of all ages.

By Oral-B

DUBAI, UAE: Oral-B, the worldwide leader in oral care, has upgraded the Oral-B App to feature the Oral-B FunZone, a unique gamification feature that makes each brushing session a more rewarding experience for users of all ages.

By DTI

Three years ago, Professor of Cariology and Endodontology Ivo Krejci from the University of Geneva, Switzerland, published an article in which I define as the absence of clinical symptoms. My article focused on one aspect of this concept, namely the causes, symptoms and treatment of caries, a chronic lifelong infection of the biofilm, the clinical symptoms of which, in the form of decaying lesions, are still some of the most common reasons for extractions. I am aware that I am speaking against the common teaching of premature tooth extraction. It's difficult to say, as both problems can only be treated with existing large decaying lesions or with existing restorations.

Prof. Krejci, what is your main message when it comes to modern caries prophylaxis? The aim of modern dentistry is not to repair or replace heavy clinical symptoms in the form of large decaying lesions and deep periodontal pockets, but rather the lifelong dental health of the population, which I define as the absence of clinical symptoms. My article focused on a different approach to care that is focused on lifelong dental coaching.

Prof. Ivo Krejci recommends an approach to caries prevention that is focused on lifelong dental coaching. (Photograph: Ivo Krejci)

Interview: “Prevention is not just for children and young people”
pathogenic biofilm. This separation makes no sense at all. We should al- ways speak of simultaneous caries and periodontitis prophylaxis, not of separate problems. Depending on the individual patient’s situation, the focus may be more on caries and/or periodontitis prophylaxis, but it shouldn’t be forgotten that a lifelong prevention-oriented con- cept should take not just caries and periodontitis into account, but also erosion, abrasion, trauma, dental misalignment and inflammation.

You mentioned pathogenic biofilm. What do you recom- mend: completely remove or disrupt the biofilm? The biofilm actually protects our teeth, so is vital for survival. Its per- manent removal from the mouth would therefore be counter pro- ductive. Through its currently un- preventable infection with bacteria that cause caries and periodontitis, it becomes potentially pathogenic. This pathogenicity can only develop if two conditions are present: firstly, the biofilm must be sufficiently structured, which requires around 24 to 48 hours after its formation, and secondly, certain parameters must be present. An example of this is the repeated excess of sugar in the cavity process. These deductions form the basis of the preventative concept: we accept the infected and potentially patho- genic biofilm and do not remove it permanently from the mouth. We accept these temporary conditions—for example, through a drastic reduction in sugar consump- tion—would be very welcome, but difficult to implement in the long term in practice. We therefore ap- proach the structure of the biofilm and prevent its pathogenicity from developing. The solution is simple: we just have to regularly, that is every 24 hours, disrupt the struc- ture of the biofilm intensively on all surfaces of the tooth. Chemicals and medications don’t help a great deal, as the biofilm has very potent de- fensive mechanisms.

In your article, you spoke about lifelong dental coaching. What do you mean by that? Prevention is not just for children and young people. As caries and peri-odontitis are lifelong infections and decaying lesions, periodontal pulp- etics, erosion, abrasions, trauma and dental infections can arise at any age, lifelong prophylaxis is unavoidable. This lifelong dental coaching is based on the preventative measures already mentioned, complemented by regular professional monitoring with high-tech diagnostics to catch symptoms in the subclinical stage, thereby allowing non-invasive ther- apy where needed.

Therapy, diagnostics, preven- tion—what are your concrete recommendations? We’re very far from being able enough how much of a risk patient has of developing symptoms in the form of decaying lesions or periodontal pockets. It is even more difficult to do this for specific areas of the tooth. And even if we could, things can change at any time. The risk of too little or too much prevention on the wrong tooth surface is there- fore very high. This applies to ero- sion, abrasions and fractures in the same way. That’s why it is more efficient to today’s dental therapy to wait for symptoms to develop, providing site-specific risk information. How- ever, if we wait long enough for the symptoms to be clinically visible, it’s already too late and we fall back on our clinical manifestation, if one has the diagnostic oppor- tunity to recognise symptoms long before they become manifest. Such a concept suddenly becomes very interesting.

We know that it takes years for clini- cally evident symptoms to develop in caries and periodontitis alike. If diagnostics are carried out with suf- ficient reliability and if diagnostic methods are available that catch symptoms in the subclinical stage, we will have enough time to tackle these with non-invasive methods.

As dentists, we only tackle the symp- toms of caries with our restorative methods. For practical and technical reasons, we used to only treat symp- toms at a later stage, when the decay- ing lesions had already developed into cavities, because diagnostics were not available or had too low a sensitivity. The concept was based on macro-me- chanical principles. We needed the hole so that we had something to fill. Today, this concept hasn’t really changed in principle. From a profes- sional point of view, we are still resis- ting symptoms, but we have other diagnostic tools and therapies, so we can use them to treat symptoms before they become manifest.

What does individual home oral hygiene play in car- ies prophylaxis in your opin- ion? Individual home oral care by the pa- tient is the most important aspect for me. It might sound presumptu- ous, but many people can’t brush and don’t know which tools, prod- ucts and techniques are the best and most efficient for their individual situation. I am convinced that oral care at home can only have a long- term effect when it is overseen by a dental professional. This profes- sional cannot heal the patient, and it wouldn’t make sense for the pro- fessional to perfectly remove the patient’s biofilm each day, as this would require that the patient come to the practice every day. Even if he or she could afford this, it would lead to public transport chaos and would make very little sense. Therefore, it

should be concentrated on pri- mary or secondary prophyl- axis.

Individual primary prophylaxis is the foundation of everything, but nobody’s perfect. With the primary prophylaxis tools we have today alone, we will not be able to save humanity, despite our best efforts, symptoms will arise. That’s why our concept is not solely based on pri- mary prophylaxis. It also integrates secondary prophylaxis, which aims to halt symptoms non-invasively in the early stages so that they do not become more clinically serious. Non-invasive secondary prevention seems to me to be the tool of choice for our current circumstances and the resources we have available today.

What role does individual home oral hygiene play in car- ies prophylaxis in your opin- ion? Individual home oral care by the pa- tient is the most important aspect for me. It might sound presumptu- ous, but many people can’t brush and don’t know which tools, prod- ucts and techniques are the best and most efficient for their individual situation. I am convinced that oral care at home can only have a long- term effect when it is overseen by a dental professional. This profes- sional cannot heal the patient, and it wouldn’t make sense for the pro- fessional to perfectly remove the patient’s biofilm each day, as this would require that the patient come to the practice every day. Even if he or she could afford this, it would lead to public transport chaos and would make very little sense. Therefore, it

Emirates – Kenya outreach success

By EDFHC

In August 2018, Emirates Dental Hygiene Clinic and Fair- care, an initiative by Goumbouch, partnered to deploy a team of dental professionals and a general volunteer to Aitong in Kenya. The group was led by Rachael England, President of the EDFHC Faircare in Dubai-based organisation that provides dental care to low income workers for just 10% of the usual cost, ensuring equitable access to quality dental care.

England had previously visited Ait- ong in 2010, when she rendered a dental hygiene service and gave oral health lessons; while a team of EDFHC volunteers from four countries, they planned to go a step further and establish an ongoing service.

Following one missed flight, two cancelled flights, a brief strug- gle to import 2000 toothbrushes and 20000 tubes of toothpaste and a bone shaking 6-hour bus ride, the team finally met in Aitong in Kenya, where they set up the mobile dental unit within the village medical centre.

Sterilisation and cross-infection can be an issue in developing countries when carrying out humanitarian work, but careful planning by Hi- nary Browne meant the team were well prepared with an entire decon- taminating line and two pres- sure cleaners. The team also had clini- cal and patient safety.

A dental hygiene clinic was set up with two portable ultra-scalers and oral hygiene aids. Here, Huma Hadi, Yasmeen Arifah, Hanan Abdalla and Dr Shama Obaid Bin Rabbanee carried out dental screen- ings for the local school children, preventative treatment and prophy- laxis scaling. Abdalla and Arifah also held fun and interactive oral health lessons for groups of children, where they sang and learned about tooth-brushing and healthy snacks. Patients often request cleaning to remove the brown stains seen frequently in the Mara, however this discolouration is due to the high levels of fluoride that are found in the ground water. Despite com- munity efforts, filters to remove such high concentrations are too expen- sive to maintain and following generations continue to be afflicted with severe fluorosis.

In the main surgery: patients were triaged by dental hygienists Karina Carmaito and Stephanie Gardner who used their full skills sets to assess and anaesthetise patients ready for dental therapist Mada- lynne Tucker and dental nurse Jami- Taire to carry out basic restorative care and extractions. Dr Taire’s

Getting up close with elephants on the Masai Mara

Dental Tribune Middle East & Africa Edition | 5/2018

**Page 2**

**HYGIENE TRIBUNE**

wife, Zohra oversaw the surgery, tracking the treatments that had been carried out and helping with patient care.

Outside, the general volunteer Lisa Hicks registered patients and created a basic filing system to ensure future expeditions have patient treatment records. Four local young men were recruited to assist in translation and clinic organisation, one of whom, Delama, had been both deaf and mute since childhood when he contracted an illness, yet the whole community ensured the welfare of the team.

The first day in clinic went smoothly as word spread throughout the community that a dental team was in town. The local host, Simi, ensured the welfare of the team and also managed to secure hotel accommodation—an upgrade from the expected campsite.

It was not all work and no play for the team. Sunday, Wednesday and Thursday were spent in the Maasai Mara National Park, where they were lucky enough to see elephants, lions, leopards, buffalo and cheetahs amongst the spectacular scenery inhabited by these incredible animals. They were also welcomed by the village elder at a local Manyatta (Maasai village) with traditional singing and dancing. Maasai are great pastoralists, living semi-nomadic lives that have remained unchanged for hundreds of years. They are easily recognised by their ever-changing, yet the whole community ensured the welfare of the team.

Many children live at the school to avoid the perilous walk across the Mara to reach their lessons. Facilities are basic, but clean and safe with wonderful, enthusiastic teachers. Many children live at the school to ensure more children are able to receive an education that costs $20 per month—insurmountable to some families on the Mara. St. John Paul II School receives no government funding and relies solely on community support and external donors.

Currently 934 children reside at the school, yet there are approximately 2000 children living in the zone.

Rags to Riches UAE are an amazing group of volunteers who recycle bed sheets into reusable sanitary pads. These pads help reduce the stigma of menstruation, allowing girls to stay in school throughout the year. Rags to Riches UAE generously donated 270 kits that the team distributed during this visit.

Clinically, the team experienced many cases of severe crowding that, naturally, the children and their families wanted corrected. Sadly, this was unachievable at this time, carious #6 teeth in very young children and carious #8 teeth in everyone else. Overall, the clinic carried out 77 extractions, 39 fillings, 26 prophylaxes and dozens of oral health lessons. St. John Paul II School received toothbrushes and toothpaste to ensure all children would start the year able to brush twice-daily. 270 sanitary packs were distributed and great friendships were forged.

The EDHC and Faircare would like to publicly extend their gratitude to their generous sponsors: Oral B, Beverley Hills Formula, Henry Schein and Colgate.

The next expedition to Aitong will be in July 2019. For more details and to register your interest, email: maasaimolar@gmail.com or maasaimolar@ncl.net or maasaimolar@gmail.com

**09 Nov 2018 | Preliminary Programme**

- **PROF. ANDREA MOMBELLI**
  Switzerland

- **MARY MOONKH**
  New Zealand

- **AMANDA GALLIE**
  Australia

- **DR. PENELOPE JONES**
  Australia

- **DR. NADIA MOHD SALEH**
  UAE

- **ROBYN WATSON**
  Australia

- **SHAYRNA ALTAFAH**
  Bahrain

- **SAWSAN JAFFER ALTHAQAFI**
  GCC Region

- **EMILY HICKS**
  USA

- **DENTAL HYGIENIST SEMINAR**

- **SITTING POSTURE**
- **HYDROCOLLOIDS AND HYGIENE**
- **MANAGEMENT AND PREVENTION OF PAINFUL INSERTS**
- **TOOLED AND CERAMIC RISK ASSESSMENT**
- **PRESIDENTIAL THERAPY AND CARE TYPING**

**Sitting is a Health Hazard**

**Dental Assisting Course**, Developing Vocational Health Programs in the GCC Region

**InterContinental Hotel Dubai Festival City**

**DUBAI, UAE**

Part of 10th Dental Facial Cosmetic Conference & Exhibition

**www.cappmea.com/dhs**
Evaluation of an ex vivo porcine model to investigate the effect of low abrasive airpolishing

By Gregor Peteriakia, Ralph Heckel, Raphael Koch, Benjamin Ehnke, Nicole Anweiler

Aim
To assess the usability of pig jaws periodontal treatment model for low abrasive airpolishing and to histologically gauge the effect of various instrumentation techniques.

Material and methods
- From 120 Pig mandibles, the buccal part of one molar was chosen randomly and fixed in a way allowing controlled instrumentation.
- Five modes of instrumentation were evaluated.

Group A: Low Abrasive airpolishing
- Using glycine of 25 μm (EMS Pero Powder, EMS, Nyon, Switzerland).

Group B: Low Abrasive airpolishing using erythritol powder of 34 μm (EMS FEUS Powder, EMS, Nyon, Switzerland).
- EMS Air Flow Master was used with a standard handpiece at a distance of 5 mm to the gingival tissue in a continuously sweeping way for 5 s like subgingival biofilm removal.

Group C: Panoramic scaling using Perio Slim FS instrument (EMS).
- EMS Perion Master was used at medium power and water setting.
- The instrument was kept parallel to the root surface at a pressure of approximately 3 N for 10 s.

Group D: 7/8 Gracey Curette (Deppe, Rolle, Switzerland).

Group E: Ultrasonic scaling (Ultrasonic Scaling (USP), EMS, Nyon, Switzerland).
- EMS Piezon Master was used at medium power and water setting.
- The instrument was kept parallel to the root surface at a pressure of approximately 1 N for 10 s.

Results
- Hand instrumentation and ultrasound had the most pronounced damage.
- Hand instrumentation and ultrasonic instrumentation caused higher tissue destruction than both airpolishing powders.
- Pig jaws could be used to assess the histological effects of different instrumentation techniques on periodontal tissues before conducting studies on humans.

Conclusion
- Pig jaws could be used to assess the histological effects of different instrumentation techniques on periodontal tissues before conducting studies on humans.
- Low abrasive airpolishing powders had an overall low potential of soft tissue damage and could be used safely to remove biofilm subgingivally.

Sitting is a health hazard – an innovative way for the dental team to avoid workplace problems

By Dr. Penelope Jones, Australia

We have known for years that dental offices face a general problem. Millions have been spending trying to address this problem, yet the literature is still full of articles confirming ‘sitting for long periods increases your risk of cardiovascular disease, diabetes and even cancer’.

New ideas have been made by members of the dental team by increasing their fitness levels and making a point of moving around as often as they can during the day.

Unfortunately, the basic problem has not been properly addressed. The problem, as expressed by Dr. Penelope Jones of the “Working Posture” programme, is how we sit.

Jones has been helping people turn this around successfully for over 25 years.

Have you ever noticed what happens when you concentrate, need to perform intricate work or even just deal with a stressful situation? You tend to reduce your breathing. You are unaware of it and, as time goes on, your breathing muscles (intrapleural and diaphragm) become tighter. As you can imagine, doing this every day is eventually going to lead to tighter and tighter muscles and a more rigid chest. Our other unconscious responses to stress are raised shoulders (part of our natural startle reflex) and shortening our torso at the front (also part of the reaction to protect ourselves from emotional stress). At the end of the day so many muscles that are not needed to perform our work are chronically tight and we feel “up tight”. No surprises there.

These tight muscles are sabotaging our comfort, and we are completely unaware of how it happens. We rest and do exercises and the tightness relaxes slightly, but in root cases the muscles never completely relax, so it is almost as if we are wearing a neurological strait jacket, even when we sleep.

These unconscious tight muscles pull our posture out of alignment and create chronic pain in our backs, necks, shoulders and arms.

Posture is not a static thing. Our nervous system controls which muscles contract and which ones relax, as well as the timing of this process. It is a continually adjusting mechanism. Ideally, when the muscles can continually adjust to the need to dissipate energy from our movements, we have good posture. But chronically tight muscles do not allow for this continual adjustment. Great athletes and martial artists have trained themselves to do this continual adjustment. They can strike a fatal blow or a shot with minimum effort as they are very aware of how their bodies function.

Dr Jones has been teaching her unique workshops for almost 30 years, both in Australia and internationally. Her workshop has helped people to prevent and recover from workplace injuries caused by chronic poor sitting at work.

Working Posture uses easy gentle movement lessons along with good breathing techniques to allow you to unwind your old muscular tension and learn to align yourself with far better skill. You will learn how to find good balance with strength as well as greater flexibility for the fine work of dentistry. It is easier and more enjoyable than you would imagine and does not involve strenuous exercise.

Dr Jones has restored many a dental career. She is an international speaker and has been teaching in the faculty for over 20 years.
THE GAME CHANGER

TEST GBT IN YOUR OWN PRACTICE

Do you want a free demonstration with our newest device following the GBT steps?

Please contact your local supplier to make an appointment.

UAE  Al Hayat Pharmaceuticals
OMAN  Sala Medical
          Bahwan Healthcare Center
BAHRAIN  Gulf Pharmacy
KSA  Al Turki Medical Group
LEBANON  Medetech SARL
JORDAN  Basamat Medical Supplies
KUWAIT  Al Bader Trading Co WLL
QATAR  Accros Trading
IRAN  Apadana Tak
EGYPT  Imeco
SYRIA  Ouzoun Trading Center

:ems-dental.com
Interview: “BlueM supports the body’s own healing process”

By Franziska Beier, DTI

Awareness of the importance of oral care during pregnancy has been increasing, and this is also apparent in the dental products available today. Dutch company BlueM, for example, offers an oral care range that is safe for pregnant women and children. Denise Leusink, oral health adviser at BlueM, spoke to Dental Tribune International about the background behind development of the BlueM line, its effects on oral health and particularly concerns for pregnant women regarding oral care.

Ms Leusink, the founding of the BlueM brand was something of a coincidence arising from Fokke Jan Middendorp sustaining an injury during a hockey game. Can you elaborate a bit on this story? Ha, I love this story! Fokke Jan is a former international hockey player and one day was injured during a game. Dr Peter Blijdorp, a maxillofacial surgeon, was watching the game. He came to Fokke Jan and asked him if he could apply a gel on his knee to relieve the pain. It turned out that Peter was determined to achieve a new and different way of practicing dentistry—not one that was unhealthy or aggressive, but one that was gentle on the body. All he wanted for his patients was minimally invasive surgery, meaning a minimal amount of pain and the fastest recovery possible. During his quest, he discovered the power and beneficial effect of oxygen and developed a gel based on oxygen that accelerated wound healing. Fokke Jan was so enthusiastic that he wanted to help Peter and together they started BlueM. The first product they launched was the oral gel, which is the perfected version of Peter’s oxygen gel.

What was it that motivated you and your team to develop the blue m product line? BlueM is different from other oral care brands. Peter wanted to make a difference for his patients and help as many people as possible with body-friendly solutions. The realisation of Peter’s dream is what drives us as the BlueM team. We receive many, many stories from BlueM users from all around the world and we are constantly impressed by the remarkable, almost magical results. It is both exciting and humbling and as a team we feel grateful to continue on the journey started by our founder.

What active agents do the products contain and how do they work? The basis of BlueM is sodium perborate, honey, xylitol and lactoferrin. Sodium perborate slowly releases a body-friendly amount of active oxygen. Oxygen plays a key role in wound healing because it accelerates the wound healing process. Active oxygen kills anaerobic bacteria, which are the cause of most oral problems. Honey is a carrier of oxygen and has many antibacterial functions. Xylitol stimulates salivary flow, helps remineralisation and kills Streptococcus mutans. Last but not least is lactoferrin, an immune-boosting protein that stimulates bone regrowth.

BlueM toothpaste contains fluoride. We have two toothpastes: one without fluoride and one with 1,000 ppm calcium fluoride. When BlueM started, we focused on patients with implants. Fluoride corrodes the titanium surface layer of implants, which means that one should rather use fluoride-free toothpaste. Since many people without implants are using our products nowadays and dental professionals asked for a fluoride toothpaste, we created one.

Does the toothpaste contain sugar because of the added honey? The sugar in the biological, cold-extracted honey is converted into water and oxygen when it comes into contact with liquids. The catalyst in this process is called glucose oxidase. The sugar in honey is completely converted, which means there is no risk of caries.

Why is this product suitable for pregnant women? BlueM supports the body’s own healing process. Because of the products’ natural effects, they are suitable for long-term use. Other products, which are mostly chemical, can only be used for a short period. BlueM products are safe for children and pregnant women.

Gain a child, lose a tooth—truth or myth? It is true that many women develop caries after their pregnancy. During pregnancy, there are many changes: fluctuating levels of calcium and magnesium, altered nutrition resulting from consuming more snacks, hormone fluctuations and even less time for oral hygiene. All these external factors can lead to caries. Therefore, I believe it to be a myth because the development of caries is caused by many factors beyond pregnancy.

Periodontitis is associated with systemic diseases such as diabetes and heart disease. What adverse consequences of this correlation might be of particular concern for pregnant women? Periodontitis causes an increase in the prostaglandin level, which induces contraction of the uterus. Studies show that women with periodontitis have a two to seven times greater chance of preterm birth due to this high level of prostaglandin. It also works the other way around: treatment of periodontitis can reduce the chance of preterm birth.

That is why it is so important to be aware of the effects of your oral health when you are pregnant.

What oral hygiene measures do you recommend for pregnant women? Make sure that you do not have gingival bleeding! So, brush twice a day and use toothbrushes or interdental brushes on a daily basis. Especially during the second trimester, prevalence of gingivitis and anaerobic bacteria increases. That makes it even more important to work on your oral hygiene. The BlueM products can be a great addition to your routine.

Does BlueM have a unique position on the dental market because it specifically offers oral health products for pregnant women? BlueM products have not been scientifically developed for pregnant women, but it is true that the products are safe to use during pregnancy, in contrast to many other oral health products.

Do you recommend the use of BlueM also for non-pregnant women? BlueM products have a wide range of use. We see that blue m is most commonly used by people with implants, periodontal problems or oral wounds. Since it accelerates wound healing, it has many indications. For example, the elderly use our oral foam to take care of their gingiva and clean their dentures. Our oxygen fluid is often used by cancer patients to support wound healing after thermo- or radiotherapy.

What sets BlueM apart from other products? BlueM supports the body’s own healing process. That’s unique oral care.

Where is the product available, and how much does it cost? BlueM is promoted by top dental professionals in more than 40 countries. You can buy it online, in various clinics and in many pharmacies. We have distributors worldwide; for an overview, see our website https://www.bluecare.com/international-distribution/. The price ranges from €1.95 for a monthly spray to €4.95 for the oxygen fluid, which is a medical product.

Thank you very much for the interview.
NEW COLLECTION

EXPERIENCE OUR ENTIRE COLLECTION AT WWW.CROIXTURE.COM
A soft approach for tough areas.

Enamel is hard. Harder than steel, even. And it should stay that way. Enamel-friendly brushing means: pampering your teeth and gums with tender loving care. Like with the gentle CS 5460 ultra soft. Mmmm, let’s do that again.
Mastering the implant digital workflow

By Dr Ross Cutts, UK

Whether we like it or not, we are embracing the digital era in our brave new world. Many dental practices are now becoming paper-free—a digital innovation—and even using tablet computers to record patient details and medical histories. We are continually surprised by the rising age of the technologically savvy patient, particularly those of a certain generation who perhaps we assume would be less than the perceived iPhone generation.

This change in the patient demographic and attitude towards technology is filtering through to us in the dental profession. The nuts and bolts of implant dentistry tends to lend itself more readily to the digital revolution of dentistry in the UK and now globally. Many practitioners opposed to or reluctant to embrace it are actually being influenced by it through shifting workflows in dental laboratories, even where more traditional clinical practices are followed chairside. Quite often, wet impressions are poured and stone models are scanned to produce STL files for laboratories to process during crown and bridge unit manufacturing.

As an implant clinician, one does not have to invest in a CT scanner or chairside intraoral scanner—there are ways that other centers and laboratories can provide these services. However, having these tools at one’s disposal greatly increases one’s efficiency and means one is not reliant on external services for one’s patients.

So how do we begin the implant digital workflow? Successful implant treatment begins with thorough case assessment and planning of the proposed restoration. This is important for all cases, not just what we deem the complex ones. Even the most experienced implant clinician can miss a potential treatment planning hazard, especially during a busy day. Accurate study model casts are an essential part of this; however, we can now use intraoral scans preoperatively to begin the digital workflow. We take a scan rather than impressions to form digital models. Our laboratory can then use these to create digital wax-ups of proposed treatment outcomes.

We are routinely used to 2-D radiographic imaging techniques in dentistry, but with the availability and access to CBCT scanning devices now, we are able to assess bone quantity and quality of proposed implant surgical sites. With ever-reducing doses of 3-D imaging and improving accuracy, we are able to use CBCT scans, combined with clever software packages such as coDiagnostiX (Dental Wings), to plan safe and accurate implant placement and restoration. We are able to preoperatively plan precise implant placement with safe surgical margins away from important anatomical structures, such as the inferior alveolar nerve or maxillary sinus. From this, we are then able to design and either mill or print a surgical guide to use for precise implant placement.
Even with assisted surgery or guided surgery, there are sometimes certain restrictions that prevent us from achieving the most ideal implant placement, such as this case shown where posterior access in the second molar region was reduced, so achieving the perfect parallel was extremely difficult.

There are fully guided systems available that allow for absolutely precise implant placement, but these are fraught with complexities and should be reserved for experienced clinicians. The accuracy of surgical guides should not be used to make up for a lack of surgical competency however.

If soft tissue-supported, mobility completely negates any accuracy of the guide, so it should only be used for a pilot drill and then a more conventional surgical protocol adopted.

If bone-supported, raising of a very large surgical flap is likely.

- it is very difficult to ensure accurate full seating of a bone-supported guide in the precise planned position and this relies upon external fixation.

Once the implants are placed in situ and fully integrated, we then have a choice of conventional wet impression techniques versus digital intraoral scanning. For the majority of cases, intraoral scanning is extremely predictable and reliable—more so than conventional techniques—particularly across the arch—so we need to exercise caution and be aware of its limitations. We have used composite flow stuck to the soft tissue to increase reference points for our scanners, increasing their ability to stitch images more accurately together. With this in mind, we cannot assume the scan is accurate and any framework fabricated would be non-passive; therefore, we must use other methods to verify the scan’s accuracy. We have found looking temporary abutments within a composite framework introrally the easiest and most reproducible way to do this. It then allows us to design and mill a truly passive framework by Createch and a temporary acrylic bridge.

Conclusion

There are many opportunities to opt in and out of using technology regarding the digital implant workflow. For anyone considering capital investment, the most important question to ask is, how will or can this improve the outcomes I provide to my patients, and then determine whether that warrants the expenditure. Too often are we subjected to sales pitches of the next biggest thing by company sales representatives and gadgets and gizmos end up by the wayside.

Acknowledgements

To Andy Morton and Ian Murch, the fantastic laboratory technicians at Borough Crown and Bridge that I work closely with.

Editorial note:

This article was published in the 2/2018 issue of CAD/CAM International magazine of digital dentistry.
Astra Tech Implant System and Atlantis Case report

By Prof. Clark M. Stanford, USA & Ass. Prof. Gustavo Avila-Ortiz, USA

Single tooth immediate placement using the Astra Tech Implant System EV and Atlantis Abutment. The patient presented with a fractured maxillary right lateral incisor (#12) with a dislodged endodontic post. Due to crown-to-root ratio and short remaining root, extraction and immediate implant placement was elected. Care was provided with an OsseoSpeed EV 3.6-diameter implant placed towards the palate following the 3x2 rule. Following eight weeks of healing, stage-II was performed and the final restoration completed within six weeks using an Atlantis Abutment in gold-shaded titanium with concave emergence shape selected. The final crown was an all-ceramic zirconia crown.

Fig. 1: Clinical pre-treatment situation. Root fracture on maxillary right lateral incisor.

Fig. 2: Radiographic image of the pre-treatment situation.

Fig. 3: Immediate implant placement after tooth extraction starting with the Twist Drill EV Ø1.9.

Fig. 4: Direction Indicator EV showing the forthcoming position of the implant.

Fig. 5: Implant placement using Implant Driver EV 3.6.

Fig. 6: OsseoSpeed EV 3.6 S x13mm placed in the correct position.

Fig. 7: Radiographic image after implant placement showing the OsseoSpeed EV 3.6 S x13mm placed epicrestally with a Cover Screw EV 3.6.

Fig. 8: Stage-II was performed after eight weeks of healing. A triangular HealDesign EV 3.6 Ø5-3.5mm is placed in the implant.

Fig. 9: The triangular design pre-shapes an esthetic profile for the final restoration.

Fig. 10: The self-guiding Implant Pick-Up EV 3.6 is used for impression taking.

Fig. 11: Implant Replica EV 3.6 is connected to the Implant Pick-Up in the impression material.

Fig. 12: An Atlantis Abutment in gold-shaded titanium is ordered through Atlantis WebOrder.

Fig. 13: Atlantis Abutment in situ after six weeks of additional healing. The one-position-only indexing feature simplifies the abutment placement.

Fig. 14: Radiographic image after placement of the Atlantis Abutment and the crown.

Fig. 15: All-ceramic crown (ZrO2) after three months.

Fig. 16: Anterior incisal plane and final clinical appearance three months after installation.
Astra Tech Implant System®

Simplicity without compromise

The design philosophy of the Astra Tech Implant System EV is based on the natural dentition and supported by flexible surgical protocol and a simple prosthetic workflow for increased confidence and satisfaction for all members of the treatment team.

- Unique interface with one-position-only placement for Atlantis patient-specific abutments
- Self-guiding impression components
- Versatile implant designs
- Flexible drilling protocol

The foundation of this evolutionary step remains the unique Astra Tech Implant System BioManagement Complex.

www.dentsplysirona.com
New study: 7 percent of children in orthodontic care at risk for sleep disorders

By DII

CLEVELAND, Ohio, U.S.: Researchers at Case Western Reserve University’s School of Dental Medicine have found that about 7 percent of children between ages 9 and 17 in orthodontic care are at a high risk for sleep-disordered breathing. This disorder can lead to restlessness, hyperactivity and concentration problems.

For the study, 903 children or their parents completed a questionnaire about sleep and symptoms. About 7 percent responded with enough “yes” answers to put them at a high risk for sleep-disordered breathing.

“The rate is higher than we expected,” said Prof. J. Martin Palomo, a professor in the Department of Orthodontics at the dental school, and senior author of the study. The researchers note that sleep-disordered breathing in children may be under-recognized and underreported. They also suggest that the same portion of adolescents in orthodontic care in the general population could similarly be at risk.

However, according to Palomo, orthodontists are well-positioned to help affected patients because they see children whose facial development or jaw alignment has been impacted by breathing problems. When spotting a potential problem, they can make a referral to a sleep specialist.

“Sleep is a tightly regulated and well-organized biologic process affecting daily functioning as well as physical and mental health,” Palomo said. “Sleep, or lack of sleep, affects adults and children differently.”

Sleep-disordered breathing describes several conditions—including apneas—characterized by abnormal breathing patterns.

When adults get tired, they typically show signs of sleepiness: yawning, heavy eyelids and sitting down to rest. In contrast, children tend to get hyperactive. They also might snore, breathe through the mouth during the day, awake with dry mouth or become easily distracted. Palomo hopes the study will help educate both the public and orthodontists.

“The rate is higher than we expected,” he added. “I think it’s important to rule out sleep disorders before a patient is medicated for ADHD,” he added.

The study, titled “Sleep disordered breathing in children seeking orthodontic care”, was published in the July 2018 issue of the American Journal of Orthodontics and Dentofacial Orthopedics.

For more information, please contact:
marketing.emeai@ormco.com

For hotels, visa and other registration information, please contact:
ormco2018@ormco.com
+971 50 879 9035
Insignia Resolves Adult Open Bite with Straight-Wire Finishing

Case study

By Dr. David González Zamora, Spain

Pretreatment Diagnosis
Adult female, mesofacial, skeletal class I, open bite. Patient suffered from frequent headaches.

Treatment Plan Objectives
Close her open bite while maintaining vertical relationship of upper anterior incisors.

Appliance Used
Insignia SL

Treatment plan notes submitted with this case:
• Insignia Archform
• Laterals should be shorter than centrals
• Align marginal ridges
• 3mm of overbite
• Expansion through molars and premolars
• IPR between premolars

TREATMENT SEQUENCE

<table>
<thead>
<tr>
<th>Appointment</th>
<th>Archwire</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>U: .014 Damon CuNi-Ti* L: .014 Damon CuNi-Ti*</td>
<td>Bonding</td>
</tr>
<tr>
<td></td>
<td>U: .014 x .025 CuNi-Ti L: .014 x .025 CuNi-Ti</td>
<td>Triangle elastics</td>
</tr>
<tr>
<td>2</td>
<td>U: .018 x .025 CuNi-Ti L: .018 x .025 CuNi-Ti</td>
<td>Triangle elastics</td>
</tr>
<tr>
<td>3</td>
<td>U: .019 x .025 SS L: .019 x .025 SS</td>
<td>Anterior box elastics</td>
</tr>
<tr>
<td>4</td>
<td>U: .019 x .025 SS L: .019 x .025 SS</td>
<td>Anterior box elastics</td>
</tr>
<tr>
<td>5</td>
<td>U: .019 x .025 SS L: .019 x .025 SS</td>
<td>Anterior box elastics</td>
</tr>
<tr>
<td>6</td>
<td>U: .019 x .025 SS L: .019 x .025 SS</td>
<td>Anterior box elastics</td>
</tr>
<tr>
<td>7</td>
<td>U: .019 x .025 SS L: .019 x .025 SS</td>
<td>Anterior box elastics</td>
</tr>
<tr>
<td>8</td>
<td>U: .019 x .025 SS L: .019 x .025 SS</td>
<td>Anterior box elastics</td>
</tr>
<tr>
<td>9</td>
<td>U: .019 x .025 SS L: .019 x .025 SS</td>
<td>Anterior box elastics</td>
</tr>
<tr>
<td>10</td>
<td>U: .019 x .025 SS L: .019 x .025 SS</td>
<td>Anterior box elastics</td>
</tr>
<tr>
<td>11</td>
<td>U: .019 x .025 SS L: .019 x .025 SS</td>
<td>Anterior box elastics</td>
</tr>
<tr>
<td>12</td>
<td>U: .019 x .025 SS L: .019 x .025 SS</td>
<td>Anterior box elastics</td>
</tr>
</tbody>
</table>

Treatment Discussion
The patient had a complete open bite due to the habit of atypical swallowing.

To perform a bite closure, it is necessary to achieve perfect alignment and leveling of the teeth as well as obtaining accurate torque. Only then can we face the upper and lower occlusal planes. In addition, the two arches have been expanded at premolars and molars. The key to making a bite close quickly and easily is applying forces mesial to the arcade center of resistance, just so get a rotation of both occlusal planes.

Despite using an extrusive mechanics with previous elastics, you can see in the photo finish smile that the relationship of the upper incisors has not worsened, thanks to the relative position of the brackets at the time of cementation. The patient also followed a rehabilitation treatment neuromuscular speech pathologist, to ensure the future stability of the case.

Finishing Notes
No debonds, no wire bends. Just occlusal adjustment.

APPONITMENT 3 | 2 WEEKS

FINAL 62 WEEKS

APPONITMENT 7 | 57 WEEKS

APPONITMENT 5 | 57 WEEKS

INITIAL

FINAL
Use of diode laser in the treatment of gingival enlargement during orthodontic treatment

Case report

By Prof. Carlo Fornaini, Drs Aldo Oppici, Luigi Cella & Elisabetta Merigo, Italy

Introduction

In recent decades, we have witnessed the substantial development and expansion of the use of fixed orthodontic appliances. While their application has many advantages, several problems related to the health of the soft tissue may sometimes appear during treatment. In fact, the use of fixed orthodontic appliances may provoke labial desquamation, erythema multiforme, gingivitis and gingival enlargement.

Gingival enlargement is a very common complication during orthodontic treatment, but fortunately, it seems to be transient and generally resolves after orthodontic therapy, even if sometimes incompletely. Gingival overgrowth induced by orthodontic treatment shows a specific fibrous and thickened gingival appearance, different from fragile gingiva with marginal gingival redness common in allergic or inflammatory gingival lesions.

Several clinical studies suggest that orthodontic treatment may be associated with a decrease in periodontal health, causing a hypertrophic form of gingivitis. However, the actual aetiology of gingival enlargement is not yet completely understood, although probably involves increased production by fibroblasts of amorphous ground substance with a high level of glycosaminoglycans. Increased in mRNA expression of Type I collagen and up-regulation of keratinocyte growth factor receptor could play an important role in excessive proliferation of epithelial cells and increased development of gingival enlargement, on the basis of some studies, in cases of poor oral hygiene status. However, there is no clear definition on its aetiology, although it is probably associated with the inflammatory response induced by the corrosion of orthodontic appliances, particularly those of nickel, linked to an inflammatory response considered a Type IV hypersensitivity and manifested as nickel-induced allergic contact stomatitis, even if its aetiology has not yet clearly been defined.

The treatment of these conditions is surgical. Histological and histochemical studies have demonstrated that the removal of the gingival papilla can promote the formation of normal connective tissue. Because the classic intervention performed by scalpel has some disadvantages, mainly linked to the discomfort for the patient (e.g. anaesthesia by injection and sutures), there has been great interest in the utilisation of laser technology.

Case report

A 14-year-old female patient was referred to our department by the orthodontics unit because, at the end of fixed orthodontic treatment, she had developed gingival enlargement in the upper arch (Fig. 1), probably related to the fast closure of the spaces associated with very poor oral hygiene due to bleeding during toothbrushing. Just after the removal of the appliance, a topical anaesthetic (EMLA, AstraZeneca) was applied to the gingiva (Fig. 2) and a gingivectomy was performed using a diode laser (30 × 20 α, Fotona) according to the technique of removal of the interdental papillae (Fig. 3). The parameters used were as follows: a wave-length of 808 nm, 3 W in continuous mode, 10 Hz, a 320 μm fibre, and chopped mode. Based on our experience, we can confirm that this technology may represent a new approach to the resolution of gingival enlargement during orthodontic treatment, with better comfort for the patient during and after surgery.

Diodes, the last generation of laser used in dentistry, have several advantages, such as reduced cost and size, and offer the operator the possibility to work both in continuous and chopped mode. Based on our clinical experience, we can confirm that this technology may represent a new approach to the resolution of gingival enlargement during orthodontic treatment, with better comfort for the patient during and after surgery.

Several diode laser systems have been recently developed and are now commercially available. They are primarily used in the pulsed mode, but continuous diode lasers are now available. Their main advantages are low cost and the absence of the need for special safety precautions. One prominent continuous diode laser is the 980 nm diode laser system, which is used for the treatment of periodontal disease.

In conclusion, the use of diode lasers in the treatment of gingival enlargement during orthodontic treatment is effective, comfortable and well-tolerated by the patient.
save the date
Digital Orthodontics Symposium
12-13 April 2019

Joint meeting with
14th CAD/CAM & Digital Dentistry Conference & Exhibition
Madinat Jumeirah Conference Centre | Dubai | UAE

www.cappmea.com