13th CAD/CAM attendance record over 2,500 delegates

Scientific Conference & Digital Orthodontics Symposium & Dental Technicians Int’l Meeting focuses on digital revolution in dentistry

By Dental Tribune MEA / CAPPmea

Centre for Advanced Professional Practices (CAPP) Events recently concluded the 13th edition of the CAD/CAM Conference and Exhibition. Over 3,000 dental professionals, trade visitors, VIPs and students from the MENA region, America, Asia, Australia and Europe congregated at the Madinat Jumeirah Conference Centre in Dubai from 4 to 5 May to share in the latest developments, innovations and ideas that have transformed the field of dentistry. The event was held in conjunction with the Digital Orthodontics Symposium (4 May) and the Dental Technician International Meeting (5 May) and featured various activities, including the scientific conference (4-5 May), multidisciplinary pre- and post-event hands-on training courses (2-12 May), round table training and an exhibition (4-5 May) with 26 free continuing medical education (CME) training sessions in special training zones.

The scientific programme, chaired by Dr Munir Silwadi, provided speakers with a platform to discuss advancements in digital dentistry, the digital workflow and innovative practices, while sharing their cases and research with over 2,500 attendees at the conference. Topics covered the digital workflow, CAD/CAM chairside and in-laboratory applications, digital and conventional impressions (intra-oral, laboratory and face scanners, new materials in digital dentistry and 3D printing), laboratory and clinical options, digital and conventional restorations, digital imaging, computer-guided implantology, practice software, one-day restorations and CAD/CAM software. The main aim of the conference is to provide a practical overview of digital dentistry, to be a stimulus for improved adoption of the areas that have been proven and to aid the integration of new technologies that benefit dental professionals.

One of the main highlights of the event was that it provided dental professionals with the opportunity to earn up to 84 CME credit hours over the course of 11 days. The CME accreditations provided for these courses included Dubai Health Authority, Health Authority Abu Dhabi and CAPP, which is recognised by the American Dental Association Continuing Education Recognition Program (ADA CERP) as a provider of CE credits. Apart from this, visitors had the opportunity to attend free CME training sessions that were conducted by sponsors and exhibitors during the exhibition, thereby facilitating networking, and the exchange of ideas and providing exhibitors with the opportunity to showcase their latest technological advancements and innovative solutions in digital dentistry.

CAPP has always been committed to encouraging innovative research and advancements in the field of dentistry that not only revolutionize dentistry, but also advance patient health. Therefore, according to tradition, dental professionals and students from across the world were invited to present their outstanding research and findings to be reviewed by academics and industry experts at the poster presentations event.

The plethora of innovations and a multidisciplinary approach have always played a key role in ensuring that CAPP’s conferences, scientific programmes and courses are among the most sought-after learning opportunities for dental professionals. Dr Dobrina Mollova, founder and Managing Director of CAPP, said: “Such events encourage the implementation of best practices, the integration of new technologies and the adaptation of the latest innovations in dentistry due to continuous research and development in close collaboration with dentists and input from across the dental profession, as they are delivered by some of the world’s most renowned dental experts in a quest to contribute positively to maintaining and improving patient health.”
Agreement between Ajman University and CAPP Training Institute signed

By Dental Tribune MEA / CAPPmea

Agreement for Continuing Education and Professional Development Programs was signed between Ajman University (AU) and CAPP Training Institute. The ceremony was held in Ajman University, UAE on 19th of April 2018. The contract was signed by Prof. Salem Abu Fanas, Dean – College of Dentistry on behalf of Ajman University and Dr. Dobrina Mollova, Founder and Managing Director of CAPP Events and CAPP Training Institute.

The focus of the agreement is the utilization of Ajman University premises with regards to the live-patient treatment clinical days on the “Clinical Implantology Certificate and Professional Development” program. The British Academy of Dental Implantology (BADI) and British Academy of Restorative Dentistry (BARD) will lead the program from Sweden and Italy, respectively. The program is accredited by the UAE Ministry of Education since opening in 2018. AU has graduated more than 35,000 students who hail from 84 nations. Working in a variety of professions – from dentistry to information technology, pharmacy to law; mass communication to business administration – AU alumni now comprise 14 alumni congresses across the globe.
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Following a simpler path from prep to crown

A case study by Dr. Carlos Eduardo Sabrosa, DDS, MSD, DScD featuring 3M™ RelyX™ U200 Self-Adhesive Resin Cement

Introduction

Indirect restorative procedures can be time-consuming and complicated, involving many different processes from impression taking to cementation. These procedures are carried out in the dental office, and in each of them, different strategies may lead to success. However, some of the available materials and techniques will involve a lot of effort, while others enable users to proceed quickly and simplify the complete procedure. A simplified workflow from prep to crown that really makes life easier for the dental practitioner is described below.

Comments

The described patient case shows that it is possible to significantly reduce the number of working steps in an indirect restorative procedure. In this way, potential sources of error are eliminated and chair-time is decreased. Key to success is the use of innovative, high-quality materials that offer ease of use and lead to increased efficiency in the dental office. There include the above-mentioned monophase impression material, the bulk fill composite, the tempomation material that does not require polishing and the self-adhesive resin cement all offered by a single manufacturer.

Before using the products described, please refer to the instructions for use provided with the product packaging. The featured 3M product may be known with an alternative name in different regions.

Fig. 1: Initial situation. The failed composite restoration covering a large part of the left mandibular first molar’s occlusal surface needs to be re-placed.

Fig. 2: Due to the size of the restoration, the amount of remaining tooth structure might not be sufficient to ensure the required fidelity for a direct composite restoration.

Fig. 3: Upon removal of the old filling, it becomes clear that a crown is needed to ensure the required stability. The tooth is built up with 3M™ Filtek™ Bulk Fill Posterior Restorative, which may be placed in conjunction with 3M™ Single Bond Universal Adhesive and in increments of up to 5 mm.

Fig. 4: Following tooth preparation, a temporary crown is produced chairside with 3M™ Protemp™ 4 Temporization Material this material exhibits a high strength and a natural gloss without polishing.

Fig. 5: One week after the preparation procedure, healthy soft tissue conditions are obtained. They lay the foundation for a high-quality precision impression.

Fig. 6: In order to allow for a detailed capture of the preparation margin, the gingival tissues are retracted using the double-cord technique. Alternatively, a single cord may be applied in combination with 3M™ Astringent Retraction Paste.

Fig. 7: Monophase impression taken with 3M™ Impregum™ Penta™ Soft Medium Body Polyether Impression Material. A very detailed reproduction of the preparation margin is obtained with this simple technique.

Fig. 8: Situation at intraoral try-in of the crown. It is made of a 3M™ Lava™ Zirconia coping and an IPS e.max® Ceram (Ivoclar Vivadent) porcelain-fused-to-metal veneer. Ideal intraoral conditions (smooth margins, healthy tissues) are visible.

Fig. 9: Sandblasting of the crown’s intaglio surface to create a micromatte surface structure that is beneficial for cementation. This procedure is recommended for oxide ceramic materials.

Fig. 10: Situation after crown placement, removal of the excess cement and thorough cleaning. The crown blends in nicely with the surrounding tooth structure.

Fig. 11: At the check-up several days after crown placement, a great overall picture is obtained. The patient is happy with the final restoration in terms of aesthetics and function.

Dr. Carlos Eduardo Sabrosa, Brazil

Dr. Sabrosa is an Associate Professor at the State University of Rio de Janeiro Dental School. He received his DDS in 1992 from the State University of Rio de Janeiro Dental School and the Clinical Advanced Graduate Studies (CAGS) in Prosthodontics from Boston University Goldman School of Dental Medicine in 1996. He received the Steven Gordon Research/Clinical Award in 1995 and 1996 and the Silvyn Research Grant Award in 1999 from the American College of Prosthodontics. Dr. Sabrosa also received his MSD and DScD in Prosthodontics/Biomaterials from Boston University Goldman School of Dental Medicine in 1997 and 1999 consecutively. He has a private practice, focused in Oral Rehabilitation and Implantology, in Lelion, Rio de Janeiro, Brazil.

Dr. Sabrosa has received an honorarium from 3M Oral Care.
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Futudent announces dentistry’s first miniature 4K Camera, and a new super-lightweight POV Camera

By Futudent

Helsinki, Finland: On March 29th 2018, Futudent tripled its product portfolio by introducing two new cameras: the microCam and proCam. These newest innovations represent Futudent’s continued commitment to bringing the benefits of video to every dental professional. Video helps dental care providers explain and document more easily than ever before. This in turn helps patients retain fear with understanding and informs better decision making for their treatment.

The new proCam is the world’s first miniature 4K (3840x2160@30 fps/1080p30) dental camera and can be mounted on loupes or chair lights. It captures stunning video and high-quality photography without interrupting the procedure, keeping the doctors focus on the patient.

The new microCam is a super-lightweight 18 grams camera, designed for easy loupe-mounted POV filming. It delivers clear full HD (1080p) images from its professional Sony IMX sensor. These two new products join the eduCam to set the new state-of-the-art standard in dental video technology. Futudent founder, Lars Kåhre says, “We are very proud to once again be changing the game and innovating new and powerful ways to help dentists communicate and document better than ever before. Globally, videos are becoming more and more popular for educating patients, communicating with treatment teams, and is a superior tool for documentation. Futudent is dedicated to improving the dental experience for doctors and patients alike, and the proCam and microCam fits seamlessly into everyday dental workflow in all practices.”

Benefits of video
Video is already an integral part of dental education today. Educators and learners use video to demonstrate techniques, evaluate, document and present in universities, CE and private training. Futudent supports these applications, and extends the same benefits to private practice. Video helps dentists visually document and explain cases and treatments to patients and colleagues more easily than a mirror and a still camera. Dentists know that patients who understand their treatment plans are much more likely to accept the new procedure. Video is the easiest way to review treatments with patients and even send visual advice home straight to their smart phones.

Ease-of-use
All Futudent’s cameras are designed to be used on either loupes, chair lights, or a flexible arm, with each having different advantages depending on the application. At 18 grams the microCam is optimised for all day loupe mounting. The 26 gram proCam can also be worn on the loupe, but it’s high 4K resolution means that digital zooming can be used to capture clear, unpixelated close-up video and photographs from the chair light. The eduCam offers a good compromise of both price and performance.

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Making the move to 3D digital imaging easy

By Carestream

3D digital imaging is particularly valuable in dental practices when high quality and detailed images are needed, such as when offering dental implants or orthodontic treatments.

The CS 8100 3D system by Carestream Dental makes the move to 3D digital imaging easy because it provides the benefits of 3D technology in one versatile system. As it is ultra-compact, it can easily fit into tight spaces within almost any practice. Plus, it is accessible to all users and requires minimal training.

This system is ideal for daily use and it can capture accurate images in as little as seven seconds. The CAD/CAM abilities make it suitable for a range of tasks, from traditional panoramic examinations to endodontics, implant planning, oral surgeries and orthodontic applications. To find out how to incorporate 3D digital imaging into your practice, contact Carestream Dental today.

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With popularity of the television show “Mad Men,” 1960s’ themes such as war, racism and sexism are memorialized, as are once-common habits such as smoking. Women were marketed in the 1960s with their own cigarette brand that had the catchphrase “You’ve come a long way, baby.” Following release of Smoking and Health: Report of the Advisory Committee to the Surgeon General of the United States, all smoking-related advertising was banned from TV in 1971.

Sit-down dentistry also evolved in the 1960s. “You’ve come a long way, baby” is gone from advertising, but it remains an accurate slogan when it comes to ergonomics in dentistry. We have come a long way, but for many dental professionals, that’s still not far enough.

In 1937, pilots developed the concept of the checklist after planes began crashing. Dental professionals may not be crashing in the literal sense, but many clinicians have been forced into early retirement because of musculoskeletal disorders (MSD) or they continue to try to work through them. By incorporating a checklist concept similar to that used by war, racism and sexism are more successful, productive — and able to practice without pain.

Pain in dentistry

Pain of dentistry is a common fear that keeps patients away from the dental office. Pain in dentistry is controlled, but nothing to do with the patient. The individuals having pain in dentistry are the practitioners. It is estimated that more than half of practitioners have some kind of painful musculoskeletal disorder that is work-related.

In 2007, the Center for Health Workforce, funded by the American Dental Hygienists’ Association (ADHA), conducted a sample survey of licensed dental hygienists about a hand-me-down mentality in many dental offices.

For the safest flight, pilots use many checklists. In dentistry, a one-size-fits-all checklist is not enough to evaluate how we do things because of the wide variety of body types, shapes and preferred work styles. This article will develop checklists for dental-operator seating, just one of the many parts creating a healthy ergonomic environment.

Checklists help find the way

In the days of early aviation, pilots were crashing because they could not reach the controls. Investigation found it was pilot error. Pilot error doesn’t necessarily mean the pilot did something wrong; it can mean the pilot wasn’t familiar with the equipment or the equipment didn’t match the pilot. For those who work in a temporary dental situation at multiple offices, ergonomic challenges are huge. When such practitioners walk into a new office, trying to match their individual needs to the available equipment is nearly impossible. Pilot checklists were developed to match the steps needed for the job, making sure that everything is done and nothing is overlooked. Checklists have become fundamental to the aviation industry. In a similar way, checklists should become fundamental to the dental industry.

Two books: The Checklist Manifesto: How to Get Things Right” by Dr. Atul Gawande, a surgeon, and “Safe Patients, Smart Hospitals” by Dr. Peter Pronovost, discuss checklists as an effective way to reduce medical errors. These books are not just about the checklists, they are about the culture of medicine and how the checklist can foster better teamwork. Checklists are starting to become commonplace in dentistry, but not nearly common enough. It takes a change of culture to adopt something that on the surface can seem so simple — as a core strategy for everyday practice.

A recent success story illustrates the difference checklists can make in medicine. The intensive care unit (ICU) at a hospital is a crucial part of health care delivery and one of the most complex and expensive. The Centers for Disease Control (CDC) reported that a very patient admitted to an ICU experiences some type of complication during his or her stay. Checklists were used in the Michigan Keystone Project to make patient care safer in more than 100 ICUs in Michigan. The project targeted the expensive and potentially lethal catheter-related blood stream infections that cost $18,000 when a patient contracts one and causes 24,000 deaths per year. The Keystone team made a checklist, measured infection rates — and changed hospital culture. There was a 66 percent reduction in this type of infection statewide, saving more than 1,500 lives and $200 million in the first 18 months of the program. It was the combination of checklists and the culture of teamwork that made the difference.

Race car drivers and race car can race can be quite a bit different. Both physically and mechanically. Like pilots, car drivers need these same types of checklists to use. The teamwork of a pit crew during a race is art to watch that is fostered by checklists. Steve Knight, a professional Le Mans car race driver (Figs. 2 and 3) and business turnaround specialist, has seen in many industries, the value of checklists.

Seating risk factor checklist

Before Knight got into a Le Mans car there were many considerations to be addressed. An impression of the body’s driver is taken to ensure a perfect fit into the seat of the car for optimal performance. This melding created: proper leg-stretch to reach the clutch, accelerator and brake; comfort in reaching and holding the steering wheel; and most important, the ability to sit comfortably for long periods of time while driving around the race course. Success for a top-level race car driver is driven by a strict regimen for eating, exercise and nearly all activities of daily life so they can be in top shape physically. It is the total package, including the racing team and pit crew all using checklists, which creates this success.

The idea of a form-fitting chair for your body is not new. It is practical, yet think of the possibilities. These same ideas can be brought into the dental operatory room and the culture of teamwork that is “Seating Risk Assessment Checklist” shown in Table 1. This checklist helps to evaluate overall balance. Many professionals have damaged themselves by repeatedly sitting, leaning, stretching and twisting for so many years. As Cindy Purdy, RDH, BS, consulting with Crown Seating recently said to an online group, “Changing stools alone will not treat medical issues, but it can certainly offer benefits for the future.”

Recline/incline seating

Passengers are required to sit upright at take-off and landing on any plane (Fig. 4). Most passengers can’t wait to hear the announcement that the cruising altitude has been reached so the seats can be leaned back for more comfort. Unfortunately, dental professionals tend to sit in this upright position all day. When seated in this position for long periods of time, practitioners both elongate and shorten different muscle groups in the legs. In a human body, the hips sit completely upright and especially not for a long day in the office. A more comfortable sitting position for most is in a reclined position (Fig. 5). Think of your comfortable recliner in front of the television, after a long day of work or the experience sitting in a first-class seat on a plane. Reclining is so very comfortable. This is the way race car drivers sit, but it’s not very practical for treating dental patients.

Now that reclined position and rotate the torso left axis to create the inerose position, called an incline position (Fig. 6). Incline is the automatic position created when sitting on a horse or a saddle stool. It is a more balanced position. This balance helps preserve the hips and spine in the proper position. It is desirable to be in an open back position that is more comfortable, less harmful and allows for proper lumbar cur-
Goldilocks theory of seating

Chairs are often inherited from someone else who first bought it in a different place. Steve King’s Goldilocks™ theory is like the old story, sometimes it’s too short and no matter how much it is adjusted, it is still just not just right. Not getting just the right position will lead to pain and other issues. Many companies can exchange the cylinder, a part in the seat, for different heights to make it just right. Checking with the supplier and sitting in the chair will help. The bottom line is, don’t just try to live with it, it hurts the practitioner, the patients and eventually, the practice bottom line. Considering alternative seating may be the best choice. Creating a checklist for buying a new chair (Ta- 11 ble 2) can help you find the best one for your needs. A chair may be needed because some chairs can’t be jerry-rigged enough to fit. Other issues also play a part. Some chairs are extremely wide, or our patients can be very broad. This can make it impossible to work close enough when seated in a traditional stool. The appropriate stool allows much closer access to the patient, so tasks like scaling and operating become more comfortable. The professional should not have to reach more than 15 inches. The light, instruments on the bracket tray, the handpiece, the computer, or anything needed for patient care should be available without arm-ach strain. Straining for items stresses the muscles in the neck and shoulder. The biggest culprit is the overhead light. A light attached to loups is no longer necessary. This is a necessary part of a healthy ergonomic armamentarium.

Checklists and the culture of teamwork

Hospital checklists are saving lives and money. Pilots use several different checklists for every flight and money. Dentistry can use checklists to great benefit as well. We’ve come a long way, yet dentistry still has a way to go. If you adjust more than 20 percent of the chair move and strain on the back, neck and shoulder muscles. A slight in- clinometer of the seat back (Fig. 1) may be the best choice. If you adjust more than 20 percent out of a neutral position for less than an extended period of time, muscle imbalance- ans are created, which means the muscles become a nylon-pigmenting shortened on one side and elongating on the other. This results in misalignment of the spine and joints, and in this case, the hip joint. When a person sits properly on a saddle seat, the pelvis is properly positioned and stabilized, so the body naturally and automati- cally assumes the least stressful po- sition.

Static vs. dynamic seating

For sitting positions, there are two more checklist considerations. In tra- ditional chairs, the practitioner sits in a static position that does not pro- vide much movement or stimu- lation. Getting that just right position has been given to some of the advanced- design chairs: dynamic seating. The dynamic chair offers the option of movement, allowing the muscles to both contract and relax while one sits. Prolonged muscle contraction results in increased pressure in the seat and may create, creating a decreased blood flow through the muscle. Blood flow eventually nourishes and heals the muscles by delivering oxygen to the muscle and removing waste prod- ucts in the muscle that might other- wise cause localized, intense pain (ischemia). A dynamic chair allows a patient to move, with some it’s the seatback, with others it’s the seatpan. The seatback dynamic chair offers the option of changing the position of the muscles. A new term has been coined to describe this movement: isometric and isokinetic movements. A chair will not help. It is imperative to make it just right. Checking with the supplier and sitting in the chair will help. The bottom line is, don’t just try to live with it, it hurts the practitioner, the patients and eventually, the practice bottom line. With simple ergonomic seating checklists professionals can be more successful at managing pain in a pain-free environment.

References
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Table 2. Checklist for buying a new chair

<table>
<thead>
<tr>
<th>Question to ask</th>
<th>Possible answers</th>
<th>Action to take</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does the stool suit your height?</td>
<td>Check the height of the stool.</td>
<td>Order a higher stool.</td>
</tr>
<tr>
<td>What kind of back support does it have?</td>
<td>Check the height of the stool.</td>
<td>Order a higher stool.</td>
</tr>
<tr>
<td>What kind of weight is it resistant to?</td>
<td>Check if the stool is stable.</td>
<td>Order a stable stool.</td>
</tr>
<tr>
<td>What kind of back support does it have?</td>
<td>Check the height of the stool.</td>
<td>Order a higher stool.</td>
</tr>
<tr>
<td>Is the stool adjustable?</td>
<td>Check if the stool is adjustable.</td>
<td>Order an adjustable stool.</td>
</tr>
<tr>
<td>What kind of armrests does it have?</td>
<td>Check the height of the stool.</td>
<td>Order a higher stool.</td>
</tr>
<tr>
<td>What kind of back support does it have?</td>
<td>Check the height of the stool.</td>
<td>Order a higher stool.</td>
</tr>
<tr>
<td>Is there enough legroom for your needs?</td>
<td>Check the height of the stool.</td>
<td>Order a higher stool.</td>
</tr>
<tr>
<td>What kind of back support does it have?</td>
<td>Check the height of the stool.</td>
<td>Order a higher stool.</td>
</tr>
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<td>Is the stool adjustable?</td>
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</tr>
</tbody>
</table>
Long-term clinical success in the management of compromised intertooth spaces utilizing small-diameter implants

By Paul S. Petrungaro, DDS, MS

Management of edentulous sites in the oral cavity with dental implants has been well documented in dental literature during the past 25 plus years.1-3 Patients seeking tooth replacement for partial or totally edentulous situations have been able to enjoy natural appearing and functioning prostheses that are fixed, stable, and, in some cases, so natural it’s difficult to ascertain a dental implant restoration from a tooth restoration. Using dental implants to replace the natural tooth system in the edentulous 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,4-7 achieving natural soft tissue esthetics around dental implants can be predictable and successful. However, certain clinical situations can complicate or negate the procedure altogether.

One of these complications is insufficient intertooth spacing between natural teeth and, most commonly, with congenitally missing lateral incisors following orthodontic treatment.8 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.9

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.10 This is also very important when choosing dental implants for natural tooth replacement. Wallace, Michal and Salama, et al.11-13 stated that for a normal two-piece implant, the implant should be placed at least 15 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 3.0 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 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 root tooth damage, crestal bone loss and unnatural-appearing gingival tissues and papillae.

Small-diameter, or mini, 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 placement.14-15 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 intertooth spaces.16-17

Implants are available from 1.8 mm diameter to 2.8 mm diameter and offer a fixed permanent tooth replacement option for patients who otherwise would not have been able to have implants placed and restored. Their ease of use and atrumatic 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 small-diameter implant chosen, a 1.8 mm x 14 mm Dentatus ANEW Implant was then placed after a single coring of the site with a 1.4 mm needlepoint CERs to Full depth, within the sculpted tissue emergence profile previously created (Fig. 4). Conversion to an esthetic provisional restoration was completed by placing an abutment coping with a delton retention screw (Dentatus USA, Ltd, New York, NY) implant for the management of the compromised, congenitally missing lateral space in a 17-year old young woman with 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 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 5.0 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 anesthetic, 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 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 young woman with a 10-year clinical follow up.

Fig. 1. Pretreatment clinical view (Photo/Provided by Dr Paul S. Petrungaro)

Fig. 2. Preoperative periapical radiograph.

Fig. 3. Ovate pontic type defect created

Fig. 4. Dentatus ANEW implant seated minimally invasive protocol

Conclusion
The management of compromised intertooth spaces presents a challenge for the contemporary dental implant team. These spaces have limitations on how much bone can be obtained and require implants 3.0 mm wide or less, as was demonstrated in the text of this article. Availability of smaller-diameter implants allows patients who normally would have to proceed with a fixed bridge, or resin-bonded bridge, the luxury of dental implants with no preparation and/or reduction to the adjacent natural dentition.

Proper placement procedures and restorative techniques can lead to very esthetic results, allowing for natural tissue contours and emergence profile formation, reminiscent of the natural tooth.

Acknowledgement
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References

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Fig. 5. Immediate postoperative periapical view in Fig. 3. The immediate postoperative periapical view is seen in Fig. 6.

The patient then went through the three-month healing and observation phase prior to construction of a lab-provided provisional restoration (Fig. 7). One year later, the patient underwent final impression fabrication at the left lateral incisor site. A 10-year postoperative clinical examination was performed, and a 10-year postoperative CT scan of the implant in Fig. 9.

Please note the beautiful soft-tissue esthetic result obtained and excellent maintenance of the crest and lateral contours.

Fig. 6. Ovate pontic type defect created

Fig. 7. Conversion to an esthetic provisional crown was then followed out and restored to the abutment coping with flowable composite. The margins of the provisional were corrected and polished prior to the removal of the provisional restoration. The restoration was polished and seated with the set screw from the palatal aspect. The immediate postoperative clinical view is seen in Fig. 5. The immediate postoperative periapical view is seen in Fig. 6.

Fig. 8. Conversion to an esthetic provisional crown was then followed out and restored to the abutment coping with flowable composite. The margins of the provisional were corrected and polished prior to the removal of the provisional restoration. The restoration was polished and seated with the set screw from the palatal aspect. The immediate postoperative clinical view is seen in Fig. 5. The immediate postoperative periapical view is seen in Fig. 6.

Fig. 9. Ovate pontic type defect created

Fig. 10. Conversion to an esthetic provisional crown was then followed out and restored to the abutment coping with flowable composite. The margins of the provisional were corrected and polished prior to the removal of the provisional restoration. The restoration was polished and seated with the set screw from the palatal aspect. The immediate postoperative clinical view is seen in Fig. 5. The immediate postoperative periapical view is seen in Fig. 6.

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Paul S. Petrungaro, DDS, MS, FICD, FACD, DICOI. He is internationally recognized for his educational and clinical contributions to modern dentistry. He graduated from Loyola University Dental School in 1986, where he completed an independent study certificate at the Welsh National Dental School in Wales, U.K. He completed his residency in periodontics and has a specialty certificate in addition to a master’s of science degree in periodontics from Northwestern University Dental School. He is the former coordinator of implantology, Graduate Department of Periodontics, Northwestern University Dental School. Petrungaro has been in the private practice of periodontology and implantology since 1986 and holds a license in both Illinois and Minnesota.

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Beverly Hills Formula Black Toothpastes Proven to Give the Whitest Smile

Beverly Hills Formula Black toothpaste range ranks highest in stain removal after 5 minutes of treatment against other leading brands

By Beverly Hills Formula

Having a beautiful white smile is something most people aspire to achieve through the use of advanced whitening products and treatments, and more and more people are looking for inexpensive, safe and reliable products to help them acquire a cleaner, brighter smile for home use.

Beverly Hills Formula (BHF) is a brand synonymous with that perfect ‘Hollywood smile’. In existence for over 20 years, the company has dedicated itself to giving customers healthy and effective oral hygiene products which actually do the job of making teeth whiter through the use of its powerful stain removal ingredients.

Recent independent research has indicated just how effective Beverly Hills Formula products are at stain removal with several of its leading ‘black’ whitening products rated highest in stain removal compared with other brands; SEE CHART

A game changer for the oral hygiene market, the introduction of Beverly Hills Formula Perfect White Black Toothpaste in 2013 was the first ever black whitening toothpaste to hit UK shelves. Scientifically formulated with Activated Charcoal which is known for its love of tannins – a compound found in coffee, tea, wine, berries and spices, all of which stain your teeth. This toothpaste also helps eliminate bacteria which causes bad breath and neutralises remaining odours, leaving breath feeling fresh all day long. Most importantly, Beverly Hills Formula’s products are designed to provide maximum stain removal without damaging enamel, by using hydrated silica combined with Activated Charcoal it offers a high-performance whitening boost that is safe for daily use.

Following the overwhelming success of Perfect White Black, Perfect White Black Sensitive was launched and also scored highly for its stain removal properties. Designed specifically for teeth with extra sensitivity this stain removal toothpaste combines the advanced hydrated silica for high performance whitening and potassium citrate for rapid sensitivity action. So, Perfect White Black Sensitive toothpaste allows people to enjoy rich, acidic foods and drinks while leaving teeth looking whiter and brighter.

Beverly Hills Formula then ventured into new territory when they created the first black mouthwash. The ‘shake to activate’ charcoal mouthwash keeps breath fresh for up to 12 hours, whilst removing stains. Perfect White Black mouthwash was acknowledged at the Grocer Magazine Awards as the Best New Personal Care product in 2016. The highly prestigious Grocer Awards celebrates and rewards outstanding innovation in the UK’s Fast Moving Consumer Goods sector in non-food and food categories.

New Professional White

The recently launched Professional White range that was showcased at this year’s International Dental Conference and Arab Dental Exhibition (MIDEA) in Dubai, also came out on top of the chart for stain removal. Incorporating their latest black toothpaste, Black Pearl, the new products have been in development for two years and aim to provide premium professional oral hygiene products that offer superior results. The new Beverly Hills Formula Professional White range includes, Black Pearl whitening toothpaste, Pink Pearl Sensitive whitening toothpaste, Precious Pearl Enamel remineralising toothpaste and Fresh Pearl mouthwash containing chlorhexidine and xylitol to combat bad breath and neutralise the bacteria. In addition, is there first Professional White teeth whitening kit consisting of strips and a whitening pen which will help people achieve a white smile, safely and easily in their own home using proven whitening ingredients.

Chris Dodd, CEO of Beverly Hills Formula, which is based in Ireland and distributed in over 30 countries, said: “We are very excited about our new Professional White range which has taken over two years in development, but it’s been well worth it because we believe we’ve created the best teeth whitening products which aren’t harmful to enamel and are aimed at consumers who expect superior results from a whitening toothpaste.”

Professional Range chart
Fluoride varnish in primary dentition positively affects caries prevention

By DTI

COLOGNE, Germany: Whereas caries in adults and adolescents in Germany is declining, research has found that about 14 per cent of 3-year-olds in the country have cavities in their primary dentition. According to a report by the Institute for Quality and Efficiency in Health Care (IQWiG), fluoride varnish is effective in remineralisation of the tooth surface and prevents the development and progression of caries.

Permanent teeth may be affected by cavities at an early stage in the case of caries-affected primary teeth, as the enamel has not yet fully hardened. Because oral hygiene and caries prevention can be challenging in young children, the use of fluoride varnish can be beneficial.

For this reason, the IQWiG researchers investigated whether the application of fluoride varnish to primary dentition has advantages in comparison with standard care without fluoride application by comparing the findings of 15 randomised controlled trials. In these, a total of 5,002 children were treated with fluoride varnish, and 4,705 children received no such treatment, being the control group. Children aged up to 6 years with or without caries of their primary teeth were included in the research.

In several of the studies, further measures for caries prevention in addition to the application of fluoride varnish were offered. These included training on oral hygiene, instruction on the correct toothbrushing technique, and the provision of toothbrushes and fluoridated toothpaste. The follow-up observation period was mostly two years.

The development of caries was investigated in all 15 studies; side-effects were investigated in nearly all of the studies. However, owing to a lack of conclusive data, it is unclear whether fluoride application also has advantages regarding further patient-relevant outcomes, such as tooth preservation, toothache or dental abscesses. There was no data on oral health-related quality of life.

A clear advantage of fluoride varnish was determined despite the very heterogeneous study results. After the application of fluoride varnish, caries in primary teeth was less frequent. More precisely, the fluoride treatment could completely prevent caries in approximately every tenth child and would at least reduce progression of caries in further children. Apparently, whether the children already had caries or whether their teeth were completely intact made no difference regarding the benefit of fluoride varnish application.

The report, titled “Assessment of the application of fluoride varnish on milk teeth to prevent the development and progression of initial caries or new carious lesions”, was published online by IQWiG on 26 April 2018.
Core Build-Up using Dentsply Sirona’s SDR® Plus

By Dentsply Sirona

The SDR® technology from Dentsply Sirona provides an unmatched combination of flowable consistency, excellent cavity adaptation, unique self-leveling and minimal shrinkage stress. With more than 50 million applications and superior performance in 5 and 6-year clinical studies, the SDR® Plus flowable material is the world’s most researched and clinically proven bulk-fill flowable technology.

Dentists can bulk-fill up to 4mm deep to perform faster, easier Class I and II procedures without affecting the durability and longevity of the restoration. The handling properties of SDR® technology in SDR® Plus also make it ideal for several indications including core build-up. With three additional shades (A1, A2, and A3) simplifying aesthetic matching and enhanced wear resistance with a modified glass filler package that significantly increases durability, it is no surprise that SDR® Plus is clinically proven for indirect crown restorations.

Case Study

This case below shows a posterior tooth with an endodontic treatment followed by an indirect crown restoration. SDR® Plus is used as a core build-up material before the crown was seated.

Conclusion

This case involves the use of SDR® Plus composite as a core build-up material. The outstanding flowability of SDR® Plus composite allows complete filling of the pulp cavity, even in the smallest recesses, the composite was placed in two stages to ensure thorough polymerisation. The periphery of the tooth was then prepared, preserving a layer of enamel at the preparation margin to ensure effective bonding of an all-ceramic crown. This was bonded with the Calibra® system. This protocol thus avoids iatrogenic mechanical strains on the tooth roots during core build-up. This treatment, involving a tooth/restoration monoblock with SDR® Plus composite and crown using only adhesive techniques, provides for outstanding biomechanical and aesthetic results.

For more information or to request a demo, please contact your local Dentsply Sirona representative.
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**Target Group:** Dentists, Dental Team, Dental Students, Dental Industry

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Investing in better dentistry

Tony Beale of Optident advises young dentists to use their limited equipment budgets wisely, suggesting to put personalised loupes at the top of any wish list.

By Young Dentist

Perhaps one of the most difficult decisions that students and newly qualified dentists have to make before and upon venturing into dental practice is to prioritise their buying requirements. As budgets will be extremely tight, they will obviously need to be very cautious, not wishing to invest in any dental items that are anything less than practical.

It is sensible, therefore, to consider instrumentation that they can use literally every day, and for many varied procedures. Ideally, items should not be expendible, and should have a relatively long service life.

Loupes are a product that definitely fall into this category, and for dental students and the newly qualified practitioner, they can prove to be a very worthwhile investment.

Essential kit

Loupes can now be regarded as an essential piece of kit. They are invaluable in many ways, not only as an aid to enhance the user’s visionary requirements, but to combat poor or incorrect working posture, thus reducing the chances of inducing acute back, neck and shoulder pain, and ensuing a more comfortable and efficient way of working.

However, loupes have never been regarded as cheap! But having said this, ‘cheap’ can often turn out to be costly! Although low-cost loupes can be purchased off the shelf, there really is no substitute for loupes that are custom made to suit the users exact requirements.

After all, why would you buy a pair of ready-made spectacles in the hope that your eyeg傤sight will adjust to them when you can have a detailed and concise optical prescription for loupes to suit you? Personalised loupes will take into account and accommodate the correct magnification, lens, angle of working, interpupillary distance, style of frame and colour, together with the option of upgrading at a later date.

The Optident Vision Boutique offers all young dentists the opportunity to invest in loupes that will be tailored to suit the individual’s prescription, but at reasonable cost. The Univet range of loupes offers the best choice for young dentists with ‘cool’ Italian designer frames made from lightweight, but tough, carbon fibre materials at affordable prices

For further information or to purchase loupes, please contact SWAN info@swanmedsupply.com or visit www.swanmedsupply.com

Ivoclar Vivadent launches new product portal to round off its online services

By Ivoclar Vivadent AG

Ivoclar Vivadent has announced the go-live of a new portal. Under the heading of ‘Highlights’, the portal offers dental professionals and laboratory professionals the latest news about the company’s products.

The new online portal is now operational. It complements the well-established and successful Dentist and Dental Technician blogs, which focus on topics and issues concerning everyday work in the dental practice and the dental lab.

Available in five languages

Similarly to the existing blogs, the new product portal will be available in the following five languages: English, German, Italian, French and Spanish. The portal features two sections, which are in line with the company’s relevant target groups. One section is dedicated to dentists, the other one to laboratory technicians. Both target groups will thus be supplied with relevant information to their profession.
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THE ONLY ZIRCONIA THAT CAN BE CALLED IPS e.max®!
Large MODL Class II restoration with ceram.x® SphereTEC one, Palodent® V3 and SDR® Plus

By Dr. Clarence Tam, New Zealand

A 43 year old female came to my practice with a history of non-attendance. She was concerned about generalised sensitivity with her heavily-restored dentition, many teeth of which featured extensive composite restorations with recurrent cavities detectable both clinically and radiographically. Certain teeth with extreme structural compromise were planned for bonded porcelain restorations, however, restorations like this large MODL were planned to be restored with direct composite due to financial constraints.

Conclusion and references

Following the total etch bonding technique, Dentsply Sirona’s SDR® Plus was placed against the base of the proximal box floor as liner in very thin layers and cured, in an effort to ensure hybridisation and marginal integrity in this sensitive area before building the marginal ridge.

The body composite chosen, Dentsply Sirona’s ceram.x® SphereTEC™ one, features SphereTEC™ technology using spray granulation to produce spheres with a mean size of 15 µm out of primary submicron filler glass. These spheres minimise frictional forces when under stress. On the other side, the irregularly shaped primary particles ensure high slump resistance, thus leading to excellent sculptability. The Cloud Shading Concept adopted by Dentsply Sirona’s ceram.x® SphereTEC™ one allows a single shade to umbrella a cluster of shades, by its distinct chameleon effect, permitting a minimised armamentarium.

The Palodent® V3 matrix permitted efficient reconstruction and placement of initial layers in the extended proximal box situation, obviating the need to free-hand sculpt line angles prior to placement of the sectional matrix assembly.

All in all, the Class II Solution™ offered by Dentsply Sirona is elegant, efficient and precise, three features I strive to achieve in every restoration.
Digital technology in dentistry

By Dental Tribune MEA / CAPPmea

Dental Tribune MEA / CAPPmea: Would you please introduce yourself?

Martin Serck: I am Martin Serck, I am based here in Dubai—a resident of the Emirates. For 30 years, I worked for Sylvenen Kerr in the consumables business. Six years ago, I switched to Carestream due to my passion to know more about equipment, and, in particular, specialised radiology equipment and now today, also scanning cameras, which is the opening to the digital world for us.

Tell us more about Carestream.

Carestream was formerly known as Kodak and the medical and the dental divisions were sold to Carestream in a consolidation of Trophy and Kodak to form a new company. Their speciality is radiology and scanning camera devices for scanning and for taking impressions digitally.

And, obviously this is the perfect event for you. Here, we’re talking about digital dentistry at the 13th edition of the CAD/CAM & Digital Dentistry Conference & Exhibition.

I have been impressed, because the size of this congress is an important volume and concentration of dentists who are introduced to a wide range of aspects that can be applied to their daily practice. You have the workshops, you have two ballrooms—it’s a nice way to approach dentistry. And, we get a lot of customers visiting us to get more appropriate details when something was missed during the workshop sessions.

Are you finding that the people that are coming to this event are more cutting-edge? That they want to adopt new technology?

I need to congratulate the organisers of the event, because it really is very hard work, first of all to get all the lectures and the audience together and to ensure that it works so perfectly and runs smoothly. Everything, including the entertainment, the lunches, everything is very well organised.

You’ve mentioned briefly, you’ve moved into scanners now as well. Tell me why your scanner is better than everybody else’s?

Well, this will of course be a debate and each manufacturer will tell his own story, but for us, it is a matter of precision. Laboratories that are providing final work to the dentist need to give the guarantee that, time after time, the scan is a precise one. Not that you take one scan and the second time you take the same scan, you have different results. It’s our focus to have a constant, high-precision scan.

And do you think that digital technology in the dentistry world is completely changing everything?

I think it’s the dental practice, in a general way, that is changing. We saw some lectures this morning with beautiful images showing how dentistry is changing from an analogue matter to a digital matter and this facilitates the dental practice on a daily basis. And yes, there is a continuation from that. Manufacturers are working permanently on research for software and we develop the software in a sense that they can offer real support in easing the practice of dentistry.

Do you find that the dentists that are at this event are a small minority or do you think this is the way the industry is now? Certainly, the intention and the attention for the future is big and I think from all the customers and dentists that we can see in the field—they all consider it. Of course, the cost towards a more modern, digital practice is great for some doctors. Not all of them decide immediately or can decide to make purchase, but we see that all practices, according to their size and their needs, are moving in that direction.

Thank you for your time and we’ll see you at the next event.
A Dentsply Sirona Predominant Practice
CEREC and Single-Visit Dentistry

"For me, CEREC is like the iPhone – it’s the leader in its industry."

By Dr. Hubert de Gruyff, UAE

Dr. Roze and Associates Dental Clinic is located in Jumeriah 3, Dubai. The clinic comprises of predominately Dentsply Sirona equipment as part of their commitment to offer the best possible service to their patients, with CAD/CAM technology at the heart of their practice. Dr. Hubert has been working at Dr. Roze for a years, specialising in CEREC. We caught up with him to find out how CEREC has benefited his workflow, his patients and the practice.

Please briefly explain your background in digital dentistry.

My university in the South of France, Montpellier first introduced me to digital dentistry. They had a CEREC BlueCam machine which they allowed students to practice on and discover the workflow. As soon as I used this machine, I believed that CAD/CAM technology would be the future of dentistry – and now it’s everywhere! In order to stay relevant in the market, you have to keep up-to-date with the latest technology otherwise you will fall behind your competitors. We want to offer our patients the best, and CEREC is the best.

Why did you choose CEREC over other CAD/CAM systems?

I chose CEREC naturally as this is what we had at the university and were taught with. But even when I had the chance to discover other systems, I felt more comfortable with the CEREC workflow. Everything is so smooth, well synced, and works well together. So why would we need to use a different system other than CEREC? For me, CEREC is like the iPhone – it’s the leader in its industry. This is because of the quality and the intuitive relationship that the customer has with the CEREC machine.

Can you explain your experience with the support you receive from Dentsply Sirona?

We have strong support from Dentsply Sirona from A-Z. Our clinic is actually predominately Dentsply Sirona – treatment chairs, imaging units, CEREC, and consumables. Our service engineers and our CAD/CAM consumables sales representative Joseph Magny really help to ensure a smooth and easy life with CEREC.

How do you find the CEREC workflow?

Honestly it’s perfect. It does take more time than the regular process - for one restoration it can take around an hour and a half, or two hours if it’s highly aesthetic. But the end result is worth it – I’m happier as I deliver a better result and the patient is happier as everything is completed within a single session.

What are the types of cases you do with CEREC?

Everyone in our practice uses the Omnicam for scanning the teeth, especially our 2 orthodontists. Some of our patients request for creating in-house immediate temporary crowns. We also get a better colour by working chairside.

What would you say are the advantages to your workflow and the practice by using CEREC?

It changes your way of working definitely. If you don’t have the CAD/CAM technology in house, usually you see one patient every 30 minutes but now with the CEREC I have fewer patients but bigger sessions. So I can take more time to perfect my work and have less stress - no patients waiting in the waiting room. At the end of the day it’s beneficial to everyone.

How has CEREC, and single-visit dentistry, affected the satisfaction of your patients?

It’s very good as the patient sees the whole process from start to finish, even the chairside workings. It’s nice to share what we are doing with the patients when they are in the chair, they love it. They enjoy seeing the milling machine working – this is why we keep it in the patient waiting room so they can take pictures!

By doing everything in one session we avoid using multiple anaesthesia and temporary crowns. We also get more accuracy with digital impressions as CEREC trims us to do good prep. Aesthetically, we can achieve a better colour by working chairside with the patient. If I use a lab, I have to send pictures to my technician – the quality of the pictures is never as good as in real life.

In your opinion, can you achieve a high return on investment with CEREC?

I am not involved directly in the figures but I know that there are 6 doctors here using the equipment – 2 orthodontists and 4 general dentists. There is a huge demand for another Omnicam machine now! In terms of the full CEREC system, I know that in the long term we are reducing our lab costs overall.

What would you say was your goal with CEREC, and would you say you have achieved this yet?

First and foremost my goal was to deliver highly aesthetically pleasing restorations to my patients. I have only reached my goal because of CEREC.

When I work with the labs either in France or Dubai there is always something that needs changing with the restorations. With the CEREC machine it allows us to design the tooth ourselves, so we can create the shape, colour and details that we want.

There’s no comparison – why send the work to the lab when we don’t know how we work or what we want.
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By Tipton Training

Time To Differentiate

Young dental professionals that want to reach the pinnacle of the industry must act to differentiate themselves in an increasingly competitive jobs market.

That’s the message from Tipton Training, a dental training centre that has fast-tracked the careers of many ambitious dentists.

“I think it’s important that newly qualified dentists recognise that they’ve just been taught the basics,” explains Professor Paul Tipton, Clinical Director at Tipton Training.

“University is there to get dentists qualified. But it’s important that they differentiate themselves – and think creatively about a career path that will make them stand out.”

Real-world Knowledge Gaps

Conor O’Loughlin is one young dentist that Tipton Training has helped. Inspired by his father to enter the world of dentistry, Conor opted to study the field at university.

“I had always wanted to follow in my father’s footsteps as a dentist. He was passionate about dentistry, but my lack of self-confidence held me back,” explains Conor.

“It wasn’t until my mid-20’s when I had a burning desire to take action and send myself off to university. When I finished my studies, I thought I had all the tools under my belt to make a real impact in my chosen profession.

“But this wasn’t the case. I felt my fundamentals were somehow not refined enough, simply because I was seeing dental work fail I then decided to speak to the professionals and find out where things were going wrong and how I could correct them.”

Investing In Training

This led to Conor enquiring and registering for a series of Tipton Training courses. Specifically, Conor enrolled onto The Restorative Course in 2016.

“I wanted a solid grounding in restoring teeth. Where better than The Restorative Course? I soon realised how naive I had been in my early years. Professor Paul Tipton opened my eyes to occlusion and how the mouth works as a whole,” says Conor.

“Most newly qualified dentists are unfamiliar with the concept because universities don’t tend to teach it. However, occlusion is the major factor which determines whether restorations succeed or fail. It’s this kind of learning that helps many dentists, just like Conor, start to deliver treatments that exceed expectations.”

Further Practical Learning

After successfully completing The Restorative Course, Conor wanted a means of testing his knowledge in a practical environment.

“We made the decision, enroled onto The Phantom Head Course in 2017. The course consists of six units delivered over 14 days, delegates learn through a combination of practical sessions, lectures and demonstrations.

“The most important topic we cover on The Restorative Course is occlusion,” adds Professor Paul Tipton.

“Most newly qualified dentists are unfamiliar with the concept, universities don’t tend to teach it. However, occlusion is the major factor which determines whether restorations succeed or fail. It’s this kind of learning that helps many dentists, just like Conor, start to deliver treatments that exceed expectations.”

Improved Confidence & Treatment Delivery

Conor has found that the ability to take on more complex cases has more than covered his original course fees.

“I would recommend Tipton courses - 110%. My courses, one year later, have paid for themselves,” says Conor.

“Of course, revenue is important, but now I can go to work and really look forward to more challenging cases.”

“Within months, I was producing beautiful restorative work from various crowns, onlays/ilioys, veneers and many variations in bridgework. Literally days after a course, I was able to apply my new-found knowledge to everyday problems.”

What’s more, Conor has found that courses have provided him with a source of revenue.

“I’ve had several makeover cases where I’ve combined veneers with crowns, implants and bridgework - and patients have cried in happiness!”

The skills Conor learnt on The Phantom Head Course concern two-handed tooth preparation, a skill which Professor Paul Tipton views as essential.

“Most dentists don’t know how to prepare to prepare. I know that may sound trivial, but most dentists don’t know the best means to prepare teeth.”

“For example, I see a lot of dentists prepare with just one hand. Tipton Training teaches two-handed tooth preparation, which involves holding the turbine in both hands.”

Conor has found that the ability to take on more complex cases has more than covered his original course fees.

“The Phantom Head Course also explores how to use the speed increasing handpiece, select the right type of burs, correctly use a mirror and adequately prepare a dental nerve.”

Successful completion leads to Master’s level National Vocational Qualification (known as a Level 7 qualification), which can help dentists stand out in a competitive jobs market.

Plus, these enhanced CPTO compliant qualifications give dentists the skills to provide first-class treatments to patients, maximising their earning potential.

Dentists who want to establish a clear career path should consider registering for one of Tipton Training’s Postgraduate Certificate or Diploma courses.
Certificate & Diploma in Restorative Aesthetic Dentistry

From British Academy of Restorative Dentistry

DUBAI 2018-2020

Certificate  |  4 Modules  |  15 Days

Module 1  |  04-06 October 2018  |  Prof. Paul Tipton, Dr. Adam Toft & Dr. Ash Rayeral
Treatment Planning in Advanced Restorative Dentistry | The Principles of Occlusion in Advanced Restorative Dentistry | Tooth Preparation in Advanced Restorative Dentistry with Prof. Paul Tipton, Dr. Adam Toft & Dr. Ash Rayeral

Module 2  |  14-17 November 2018  |  Prof. Paul Tipton & Dr. Adam Toft & Dr. Matthew Holyoak & Dr. Ash Rayeral
Minimally Invasive Veneer Preparations | Master the Art of Composites Part 1 - Adhesion Composites & Anterior Composite Restorations | Master the Art of Composites Part 2 - Composite Veneers | Master the Art Composites Part 3 - Posterior Composites

Module 3  |  20-23 February 2019  |  Prof. Paul Tipton & Prof. James Prichard & Dr. Adam Toft & Dr. Ash Rayeral
Enhance Your Expertise in Endo Part 1 & Part 2 | Occlusal Examination | Emax & Zirconia Anterior Restorations

Module 4  |  04-07 April 2019  |  Prof. Paul Tipton & Dr. Malcolm Riley & Dr. Adam Toft & Dr. Ash Rayeral
Bridge Design | Aesthetic Perio Connective Tissue Grafting | Aesthetic Perio Crown Lengthening | Modern Post and Core Techniques

Diploma  |  4 Modules  |  15 Days

Module 5  |  September 2019  |  Prof. Paul Tipton & Dr. James Russell & Dr. Adam Toft & Dr. Ash Rayeral
Bridge Preparation Techniques | Articulator selection in Restorative Dentistry | Porcelain Inlays & Onlays | Veneer Cementation Techniques Practical

Module 6  |  November 2019  |  Prof. Paul Tipton, Prof. Goran Urde & Mr. Gary Jenkinson & Dr. Adam Toft

Module 7  |  February 2020  |  Prof. Paul Tipton & Prof. Edward Lynch & Dr. Adam Toft & Dr. Ash Rayeral
TMD, It’s Diagnosis and Treatment | Gold and Zirconia Posterior Crown and Partial Crown Prep Techniques | Minimally Invasive Dentistry | Adhesive Bridge Preparation Techniques

Module 8  |  May 2020  |  Prof. Paul Tipton & Dr. James Russell & Dr. Adam Toft & Dr. Ash Rayeral
Digital Dentistry Workflow | Orthodontics and Restorative Interface | AM: Occlusion 3 Seminar, Treatment of the Worn Dentition, Vertical Dimension and Facial Aesthetics Lectures | PM: Exams

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**Interview**

**Futudent at CAD/CAM and Digital Dentistry Conference: New cameras and partnership**

By Dental Tribune MEA / CAPPmea

**Dental Tribune MEA / CAPPmea: Please would you introduce yourself.**

By Dental Tribune MEA / CAPPmea

Brian Forth, Head of Sales and Marketing at Futudent. I am Brian Forth, I’m the Head of Sales and Marketing at Futudent. We are the global leader in dental video technology and we’re very happy to be here at the 13th CAD/CAM & Digital Dentistry Conference in Dubai. Thank you for having us. We were very proud to donate one of our cameras for this event. Also, we were very excited about a lot of new things that we did at this show. We donated a camera, we have previewed two brand new cameras that we have just launched, here at your event. And then we also began working with our new partner, SWAN, here in the UAE. So, we had a lot of new and exciting things happening over the last two days.

Could you tell us a little bit more about the two new cameras that you have launched? What are their main advantages compared to the previous generation?

The two cameras that we launched are the proCam and the microCam. The proCam is the first 4K camera in dentistry, a miniature 4K camera. It can be used either on the loupes or on the light to film dental work in amazing detail. So, we’re very excited about that product. And, at the same time, we launched a product called the microCam. Now, the microCam is the smallest loup-mounted dental camera. It’s only 12g. It feels like almost nothing, because doctors already have a lot of weight on the bridge of their nose, with their loupes and their light, so if you want to add another camera, you want to keep the weight as low as possible. So, the microCam is a great camera for filming from the loupes to get that perfect shot from the point of view of the doctor, but without adding too much extra weight.

**What is the main advantage for a dentist to actually make a video of the procedures?**

And, what is the main advantage for patients themselves?

That’s a great question. So, we’ve been doing this for a long time. We started seven years ago and we’ve seen the evolution of the use of video in general dentistry. It began as a technology that was primarily used by academics and key opinion leaders who needed to get great videos of their procedures for education to be able to show people in their presentations what they’re doing. But, what we’ve done, since we started this, is we’ve taken those tools of video and we found ways to make it useful for a general practitioner. So, a corner doctor, even hygienists are able to film their work and show their patients and their colleagues in different cases. So, one of the most interesting uses for our video is really patient education—helping the patient see and understand the dental work that’s being done. It helps with treatment acceptance and then of course, within the team as well, to be able to share difficult cases. You can do a certain amount of still photography, but a video is so much richer, you can do a lot more with video. So, we’re seeing more and more applications for video all the time and we’re very excited to be sitting at the front of that wave.

**Brian, what do you think about the 13th edition of the CAD/CAM and Digital Dentistry Conference and Exhibition and about your partnership with SWAN, who is now your local distributor here in the UAE?**

Well, I can say this has been a fantastic two days. We’ve had a lot of very exciting conversations in our little booth around the corner. I spend my life travelling around to dental shows—a lot of big ones—and this show was just very focused. So, the doctors who came here to talk about digital dentistry, they’re already in the right headspace, they’re technological savvy, they’re interested in using digital technology to enhance the way they communicate; the way they document their cases and they’re looking to do that with CAD/CAM and other technologies as well.

We just offer another and unique advantage for patients. That’s a great question. So, we’ve been doing this for a long time. We started seven years ago and we’ve seen the evolution of the use of video in general dentistry. It began as a technology that was primarily used by academics and key opinion leaders who needed to get great videos of their procedures for education to be able to show people in their presentations what they’re doing. But, what we’ve done, since we started this, is we’ve taken those tools of video and we found ways to make it useful for a general practitioner. So, a corner doctor, even hygienists are able to film their work and show their patients and their colleagues in different cases. So, one of the most interesting uses for our video is really patient education—helping the patient see and understand the dental work that’s being done. It helps with treatment acceptance and then of course, within the team as well, to be able to share difficult cases. You can do a certain amount of still photography, but a video is so much richer, you can do a lot more with video. So, we’re seeing more and more applications for video all the time and we’re very excited to be sitting at the front of that wave.

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**Prof. Daniel Wismeijer on the importance of 3-D printing in dentistry**

By Dental Tribune MEA / CAPPmea

We’re here at the 13th CAD/CAM Conference in Dubai. This is the second time I’m here, the first time I was here was about three years ago at the tenth edition. The CAD/CAM Conference is focusing on the digital workflow in dentistry. And what is interesting about the digital workflow is, it’s showing us how dentistry is going to be changing in the coming years. What we see is that we’re getting away from what we’re looking around here at this conference. And, then we also keep the weight as low as possible. So, the microCam is a great camera for filming from the loupes to get that perfect shot from the point of view of the doctor, but without adding too much extra weight.

**What is the main advantage for a dentist to actually make a video of the procedures?**

And, what is the main advantage for patients themselves?

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**Prof. Daniel Wismeijer from the Netherlands during the 13th CAD/CAM & Digital Dentistry Conference in Dubai on the importance of 3-D printing in dentistry**

By Dental Tribune MEA / CAPPmea

My advice is; be humble, be prepared to learn, be prepared to unlearn everything that you have learnt in the past and relearn the new technologies that they all have in portfolio.

One of the problems however is that these technologies are all in verticals. The technologies are not horizontally connected together. So, what we’re looking for is a horizontal connection between all these vertical technologies to get the digital workflow to really work for dentists.

Questions are directed to me all the time: “How are we going to do this?” “Could you explain how I can integrate this into my workflow?” But, if you don’t have the proper software and you haven’t learnt how to use it, then you’re going to get into trouble when you try to implement it. So, the credo here is that you have to learn, you have to understand what’s happening in digital dentistry. Today, I gave a presentation on 3-D printing in dentistry. Some of the questions that were posed to me after my presentation told me that people do not fully understand yet what 3-D printing actually is. And they’re asking me: “Can I use that printer for printing metals?” No, you can’t. “What can I read to learn more about digital dentistry?” Well, my idea would be to get a book on 3-D printing. This can be a very easy and simple book to help you understand the technologies behind 3-D printing. When you understand the technologies, then you can find a way of implementing these technologies into the workflow. It’s not just plug and play. It’s not “here you have a machine and now you can get to work.” No, you have to understand the role the machine plays in the total digital workflow in dentistry.

You have to understand which machines you need to make the digital workflow work for you. So, it’s not just about reading up on the end solutions; it’s also reading up on the basics, the technology itself, and learning about subjects that you need to first understand i.e., what digital dentistry is and what 3-D printing is. If you don’t understand the basics, it’s going to be very difficult to understand the final execution of all these technologies in your workflow.

My advice is: be humble, be prepared to learn, be prepared to unlearn everything that you have learnt in the past and relearn the new technologies to be able to function properly in the new digital workflow.
**Conference Preliminary Programme**

**Dr. Christian Makary, Lebanon**  
Advanced piezosurgery techniques: A clinical and scientific rationale

**Prof. Andrea Mombelli, Switzerland**  
Periodontics in the implant era: An efficient, evidence-based treatment concept for patients with periodontal disease

**Dr. Stefan Koubi, France**  
From dogma to everyday day dentistry in the aesthetic zone: ingredients and recipes

**Prof. Ross Hobson, UK**  
ABBY - From the Simple to the Interceptive Restorative

**Dr. Adam Toft, UK**  
Theatre Presentation: Integrating Ethical Aesthetic Dentistry into your Practice

**Dr. Matthew Holyoak, UK**  
Composite Artistry: Mastering the Art of Composite Veneers

**Dr. Mahmoud Ezzat Ghazi, Egypt**  
Dento-Facial Smile Design

**Dr. Stefan Koubi, France**  
Worn dentition in the everyday practice: the full mock up concept

**Dr. Carlos Sabrosa, Brazil**  
Simple and reliable procedures in modern restorative dentistry

**Dr. Riccardo Ammannato, Italy**  
Advances in Composite Restoration

**Prof. Paul Tipton, UK**  
Influence of Vertical Dimension on Facial Aesthetics

**Dr. Ash Rayeral, UK**  
Theatre Presentation: Integrating Ethical Aesthetic Dentistry into your Practice

**Dr. Shankar Iyer, USA**  
Management of Complications and Implant Failures

**Dr. Sylvia Rahm, Germany**  
Coming soon

**Dr. Raman S Aulakh, UK**  
Coming soon
Cliton and Irreversible Inflammatornical Management of a First Upper Molar with Invasive Cervical Resorpy Pulpitis

By Prof. Dr. Leandro A. P. Pereira

External cervical tooth resorption is characterized by an irreversible loss of dentin tissue due to the action of odontoclasts (Patek et al 2007). It may also be called invasive cervical resorption (ICR). It is an inflammation of the tissues supporting the tooth. Initially, there is no pulp involvement (Mavridou AM, Pyka G, Kerckhofs G, et al 2016). Generally, this type of resorption begins immediately below the union epithelium in the cervical region of the tooth. While there is no bacterial invasion in the pulp cavity, the pulp’s vitality is maintained. Thus, the pre-dentin layer will be present. The ICR does not progress into the pulp cavity possibly due to the presence of inhibitory factors in this pre-dentin layer (Wedenberg 1987, Mavridou AM, et al 2016, Mavridou AM, Pyka G, Kerckhofs G, et al 2016). Its diagnosis and treatment are not always easy and the prognosis depends on the location and degree of severity of the lesion when diagnosed.

Several etiological factors may be involved in ICR. These include the following:
- Physical: dental trauma, surgical procedures, orthodontic movements, periodontal scaling and bruxism (Heithersay 1999).
- Chemical: internal bleeding agents, especially in cases of heating and high concentrations of hydrogen peroxide (Harrington & Natkin 1979, Cvek & Lindvall 1985).
- Anatomical variation: the type of cementoenamel junction seems to play a key role in external cervical resorption. In 10% of teeth, there is no juxtaposition of the sealing to the enamel (Schröeder & Scherlie 1988). Thus, the pulp of the root has no sealing or enamel (Cvek & Lindvall 1985, Neuvald and Consolaro 2000). This dentin exposure is a risk factor for the development of ICR (Neuvald and Consolaro 2000).

In cases where the cementoenamel junction is not continuous, physical and/or chemical irritants can cause damage to the bone and dentin. This aggression may lead to biochemical changes in the affected tissues. These include formation of multinucleated giant cells. These cells are elastic cells. In these clinical situations, they may act by resorbing the teeth in the resorption process, monocytes and macrophages are present, as well as complex enzymatic and hormonal events.

Cervical resorption begins on the outer surface of the root and progresses toward the pulp. However, when it still presents vitality, the pre-dentin layer is maintained, and the ICR does not invade the pulp cavity. Predentin, which is a non-mineralized tissue, changes the direction of resorption progression by making it settle circumferentially to the pulp cavity (Fig. 4-7).

The diagnosis of ICR can be performed by clinical examination followed by its direct visualization. Generally, at the beginning of the process, the tooth condition is asymptomatic since no pulp pathologies are involved. These cases can be diagnosed by image in the most effective method. For this reason, direct visual clinical diagnosis is not possible in the early stages. Imaging examinations such as periapical radiographs and/or CT scans are efficient methods of diagnosis. Among these, the conical beam tomography is more accurate than the periapical radiography (Patek et al 2016, Vaz de Souza D et al 2017).

The treatment of ICR aims to protect the affected dentin from exposure to the patient’s immune system. For this, cleaning the affected area and restoring the cavity with bio-compatible materials is the indicated treatment. As these areas are in direct contact with tissue and saliva fluids, they are wet and irregular due to the destructive aspect of the resorption process. Therefore, the material of choice for the closure of this cavity, besides being biocompatible, must be able to fill irregular cavities and have good physico-chemical behavior in a wet environment.

Throughout the history of dentistry, several materials such as resins, amalgam, resin-modified glass ionomers, hydroxyapatite and endodontic sealers were used for this purpose. However, none of these presented desirable characteristics and results. Only bioerodable materials have the desirable characteristics for this purpose. Among bioerodable materials, MTA is the most used material and has the highest scientific evidence of its results (Pitt Ford et al 1996, Torabinejad & Partrokh M, Torabinejad 2010).

**Clinical Case**
A 52-year-old female patient, ASA I, came to the clinic with complaints of spontaneous pain exacerbated by hot and cold foods in the right maxilla. On clinical examination, tooth 16 responded to thermal tests with high intensity, pulsating pain and taking long to cease. She did not present positive responses to lateral and vertical percussion tests, nor to apical palpation. The clinical diagnosis was symptomatic irreversible pulpal resorption with peripheral apex. In addition, a radiolucent image was visualized on the radiographic examination involving the cervical and coronal region of tooth 16, leading to the suspicion of a Cervical Invasive Resorption (Fig. 1-3). In order to have a confirmation of the diagnosis and assess the extent of the lesion, a concomitant computed tomography scan was performed.

In the tomography, we could observe the three-dimensional extension of the ICR around the pulp cavity. As previously described, the ICR does not invade the pulp cavity when the pulp is alive due to the presence of the pre-dentin layer. This imaging characteristic is present in cases of external dental resorption where the pulp is still alive with consequent preservation of the pre-dentin non-mineralized layer (Fig. 4-7).

The endodontic treatment was performed according to the pulpal diagnosis. However, a complementary approach was required in the resorption area (Fig. 8). The marked curvature of the mesial root led to the selection of a reciprocating nickel-titanium instrument with shape memory control (Reciproc Blue -VDW) for mechanical preparation.

After accessing the pulp chamber, 5 ml of sodium hypochlorite were used for initial irrigation (Fig. 9). Afterwards, a Reciproc Blue 25 instrument was progressively introduced into each of the canals, in cycles of 3 slight incoming and outgoing movements in the canals followed by irrigation of 1 ml Hypochloharde between each cycle, until they reached 2/3 of the radiographic length of the tooth. At this time, the actual working length was established using an electronic file. Subsequently, the Reciproc Blue 25 instrument was taken to the working length. With a Reciproc Blue 40 instrument, the diameter of the apical preparations was increased (Fig. 10, Figs.
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 | 12-15 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.

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the resorption region, an intra-coronal (non-surgical) sealing approach was chosen. This choice was made due to the small extent of the area of communication, between the resorption and the external dental surface (FIGURE 19). For sealing the resorption area including the communication between the external/internal surface, the material of choice was MTA-HP and not the conventional MTA. As the conventional MTA contains Bismuth Oxide as radiopacity, it may lead to a darkening of the tooth crown when used near the cervical or in the dental crown. Bismuth Oxide may react with the dentin collagen, causing a graying of the dental structure (Marciano MA et al 2014). This color alteration may also occur due to the interaction between Bismuth Oxide and Sodium Hydroxide (Camilleri et al 2014). Thus, using bioceramic materials containing Bismuth Oxide as a radiopacity should be avoided.

With the concern for preserving the aesthetics of the clinical cases treated with bioceramic materials, new formulations of these materials have been proposed by the industry. As an example, MTA HP Angelus has Calcium Tungstate as radiopacity. This new formulation does not lead to changes in tooth color. Hence, this is the most suitable material for sealing these areas of resorption.

References
Daniel Vaz de Souza, Elia Schirru, Francisco Mondelli, Raúl Paretik, Sharon Patel. External Resorptions: A Comparison of the
Mastership Programme
Lasers in Dentistry
Certification Course

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

Prof. Dr. med. dent. Norbert Guttermann DDS, MS, PhD Germany
Dr. Dimitros Stathas DDS, MS, PhD Greece
Dr. Miguel Rodrigues Martins DDS, MS, PhD Portugal

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)

**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)

**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.

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A practice of firsts and high standards in Kuwait

Eschmann exploring infection control in different countries

By Dr Praveen Chandra L.P, Kuwait

When Maidan Clinic – Sharq branch opened in 1987 in the central business district, it was the first private dental practice in Kuwait. The aim was to provide a first-class dental experience to patients by meeting the highest standards and using the latest technology and innovations. Now, there are six other centres that belong to the Maidan group, though Sharq remains the biggest, both in tandem and physical size (the centre is spread over roughly 10,000 square feet). Maidan Clinic – Sharq branch is very popular with VIP patients.

Including me there are 10 dentists in the Sharq branch, 16 dental assistants, 5 infection control specialists, 4 hygienists and 4 receptionists that work across 12 surgeries in shifts between 0900 and 2000. Together, we are able to provide a comprehensive list of treatments from general dentistry to implants, orthodontics, sedation dentistry and more thanks to the broad skill set of the team and variety of qualifications. I specialise in conservative dentistry and endodontics, but my scope of practice also includes placing implants and minimally invasive anterior alignment using the Invisalign appliance (though only in select cases). I was instrumental in arranging the first certification programme for Invisalign in Kuwait, an honour that was observed by the then United States Ambassador to Kuwait, Matthew H. Tueller.

As part of our service, we also offer a state of the art mobile dental clinic designed especially for corporations, private senior management consultancies, schools and to treat patients with additional needs that are unable to attend the practice for treatment. This service is usually offered around twice a month, but at peak times of the year it can be as many as four.

Altogether, our patients receive a high standard of care across all aspects of dentistry, not only with treatments but infection prevention and control too, which is regulated by the Ministry of Health. As well as our personal benchmark that we set, there are specifications that we’re required to meet in line with ‘Infection Control Guidelines in Dental Practice’. The instructions include information on all aspects of infection control from hand hygiene to the use of personal protective equipment, surface disinfection and equipment asepsis, waste disposal, and instrument decontamination. On top of that we follow both OSHA standards (Occupational Safety and Health Administration) and Universal Precautions, which along with our state-of-the-art infection control department ensures complete compliance and patient safety.

We have two rooms – one for the dirty, used instruments and cleaning and disinfection, and one for sterilisation, packing and storage, which are interconnected by a batch to minimise recontamination. Equipment wise we use an ultrasonic cleaner before the instruments are packed, sealed and sterilised using either dry heat sterilisation or steam under pressure (autoclave). For best results all loads have either dry heat or steam indicator tape to distinguish between processed and unprocessed, biological monitoring indicators to confirm the eradication of spores, and with the vacuum sterilisers, Bowser-Dick test packs to verify steam penetration.

Ultimately, it is the expert team of infection control specialists that are responsible for ensuring all protocols are followed to the letter, but I am very passionate about the infection prevention and control within our practice, as it ensures we are able to provide a quality level of care. Not only is it a legal requirement, but our patients trust us to provide an excellent service, and it’s what they deserve to receive.

To ensure I stay up to date with all the latest regulations, techniques, equipment and so on I regularly attend conferences and workshops all over the world such as the Midwinter Meeting in Chicago, the IBD Cologne and AACD (American Academy of Cosmetic Dentistry) event. Any new changes or innovations that I come across I always take back to my practice, and where possible we always try to incorporate to make our service that little bit better.

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Study finds acupuncture could help with dental anxiety

By DTI

YORK, UK: Fear of the dentist is something some people suffer from more than others. With multiple reasons for dental anxiety and its effects, there is however limited research on its impact and possible treatment methods. In an effort to look deeper into the topic, researchers from the University of York have recently reviewed a number of studies on treating dental anxiety with acupuncture, and the results show it could be a helpful tool.

For the systematic review and meta-analysis, six trials with a total of 800 patients were chosen from almost 130 eligible trials. The researchers used a points scale to measure anxiety, and in the studies included, anxiety was shown to be reduced by eight points when dental patients were given acupuncture as a treatment. According to the researchers, this level of reduction is considered to be clinically relevant, indicating that acupuncture could be a possibility for treating dental anxiety.

Co-author Dr Hugh MacPherson, Professor of Acupuncture Research at the University of York’s Department of Health Sciences, said: “There is increasing scientific interest in the effectiveness of acupuncture either as a standalone treatment or as an accompanying treatment to more traditional medications.”

Of the six studies, those that compared anxiety levels between patients that received acupuncture and those that did not show a significant difference in anxiety scores during dental treatment. However, the researchers noted that no conclusions could be drawn between patients that received acupuncture as an intervention and those that received placebo treatment, and suggested that larger controlled trials are needed to increase the robustness of the findings.

“If acupuncture is to be integrated into dental practices, or for use in other cases of extreme anxiety, then there needs to be more high-quality research that demonstrates that it can have a lasting impact on the patient. Early indications look positive, but there is still more work to be done,” said MacPherson.

The study, titled “Acupuncture for anxiety in dental patients: Systematic review and meta-analysis”, was published in the June 2018 issue of the European Journal of Integrative Medicine.
Sipping hot fruit teas and snacking can lead to tooth erosion

By King's College London

An acidic diet has long been associ- ated with enamel wear. However, some people who consume dietary acids develop erosive tooth wear and some do not.

Scientists at King's College London have examined the risk factors and damaging habits associated with the consumption of acidic foods that result in the loss of tooth enamel and dentine.

Drawing on a previous study at Guy's Hospital, London, that compared the diet of 490 people with severe erosive tooth wear and 300 people without, researchers identified how different behaviours increased the risk of developing the condition that affects more than 30% of adults in Europe.

The King's team found that eating and drinking acidic food and drinks, particularly between meals, carried the greatest risk. Those who consumed acidic drinks, including water, over long periods and multiple times a day, while long distance drivers or video gamers may sip acidic drinks or hold wine in their mouths for pro- longed periods and multiple times a day, were more than 11 times more likely to have moderate or severe tooth erosion. This figure was halved when drinks were consumed with meals.

The research, reviewed in the British Dental Journal, also identified a range of foods, drinks and medica- tions that have the potential to be erosive. Drinks with added fruit or fruit flavourings were dominant and massively increased the erosive potential of the drink, putting them on a par with cola drinks.

Researchers found that sipping, holding or rinsing drinks in the mouth prior to swallowing increases the risk of tooth erosion, as these habits increase the duration and/or force of the contact between the acidic drink and surface of the teeth. Wine tasters, for example, swirl and hold wine in their mouths for pro- longed periods and multiple times a day, while long distance drivers or video gamers may sip acidic drinks over long periods of time.

The study also found:
- Sugar-free soft drinks are as erosive as sugar-sweetened ones.
- Fruit flavoured teas and fruit flav- oured sweets, lozenges or medica- tions have large erosive potential when consumed regularly.
- The increase in patients with tooth erosion may be linked to changing patterns of eating, such as increased snacking in both children and adults.
- Drinks are more likely to cause tooth erosion when served hot.
- Vinegars and pickled products can also lead to tooth erosion.

Lead author, Dr Saoirse O'Toole said: "It is well known that an acidic diet is associated with erosive tooth wear, however our study has shown the impact of the way in which acidic food and drinks are consumed. With the prevalence of erosive tooth wear increasing, it is vitally important that we address this preventable aspect of tooth wear. Reducing dietary acid intake can be key to delaying progression of tooth erosion. While behaviour change can be difficult to achieve, specific, targeted behav- ioural interventions may prove suc- cessful."


12th annual Senior Dental Leaders programme held in London

By King’s College London

Another cohort of accomplished delegates gathered in London in March for the 12th annual Senior Dental Leaders programme (SDL), an international conference designed to develop high-level leadership and management capabilities in oral health leaders from around the globe. Over 100 participants from over 43 countries now count themselves as part of the highly connect ed senior dental leader network.

First conceptualised by Professor Raman Bedi in 2007 at King’s Col lege London, the SDL programme is organised by the Global Child Dental Fund, King’s College London Dental Institute and the Harvard School of Dental Medicine, and is co- sponsored by Henry Schein, Inc. and Colgate-Palmolive.

The intensive multi-day confer ence brought together dental policy makers, national Chief Dental Office rs, representatives from NGOs and members of clinical and academic communities, who work to forge an international collaborative network with the goal of advancing the mis sion of a cavity-free world for chil dren.

Speakers included Professor Mike Curtis, Dean of King’s College London Dental Institute; Dr Bruce Donoff, Dean of the Harvard School of Dental Medicine; Dr Mansha But ler, Vice President of Oral Health and Professional Relations, Colgate-Pal moivre; and Mr Stanley M Bergman, Chairman & Chief Executive Officer, Henry Schein, Inc.

Professor Raman Bedi, Chairman of the Global Child Dental Fund, said: "Leadership training in oral health is just as important as gaining clini cal skills. It is not only necessary for dentists but a whole range of other health professionals such as doctors, nurses and health visitors. Leader ship development is also crucial for schoolteachers around the world to advocate for better child oral health."
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Researchers develop
drug-filled 3-D printed dentures

By DTI

NEW YORK, U.S.: It is not uncommon for denture wearers to suffer fungal infections that cause inflammation, redness and swelling in the mouth. Seeking to avoid or better treat such denture-related stomatitis, researchers from the University at Buffalo have used 3-D printing to create dentures filled with microcapsules that periodically release amphotericin B, an antifungal medication. They found that the dentures reduced fungal growth.

“ar the major impact of this innovative 3-D printing system is its potential impact on saving cost and time,” said the study’s senior author, Dr. Praveen Arany, an assistant professor in the Department of Oral Biology in the university’s School of Dental Medicine.

Using PMMA for the denture material, the researchers sought to determine if the dentures could both maintain their strength and effectively release antifungal medication contained in biodegradable, permeable microspheres. The microspheres protect the drug from the heat of the printing process and allow the release of medication as they gradually break down. With a flexural strength testing machine, the scientists found that, while the flexural strength of the 3-D printed dentures was 35 percent less than that of a conventional laboratory-fabricated denture used as a control, the printed dentures never fractured.

To examine how well the dentures could release the antifungal medication, the dentures were tested with one, five and ten layers of material to learn if additional layers would allow the dentures to hold more medication. The researchers found that the dentures with five and ten layers were impermeable and thus not effective at dispensing the medication.

With the new approach, Arany believes the antifungal application could prove invaluable among those highly susceptible to infection, such as the elderly and hospitalized or disabled patients. Additionally, unlike current treatment options, such as antiseptic mouthwashes, baking soda and microwave disinfection, the new means of controlled drug release can help prevent infection while the dentures are in use.

Arany and his colleagues are now looking to further research how to reinforce the 3-D printed dentures with glass fibers and carbon nanotubes to achieve greater mechanical strength and to focus on denture retining.

The study, titled “Functionalyzed prosthetic interfaces using 3-D printing: Generating denture neutralizing prostheses in dentistry,” was published in the June 2018 issue of Materials Today Communications.
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“No Anaesthesia” endodontics in children

By Dr. Imneet Madan, UAE

“Laser Popping Sound” in dentistry for children is one of the best approaches that can help us to overcome the initial fear of the unknown when it comes to first treatment appointments in children. Its uniqueness lies in the fact that the need for numbing is completely exempted. Today’s children like technology playing at its best. Lasers definitely meet that perception of technology.

The first visit appointments are usually not a concern as children do not anticipate any intervention. When they are not in pain, their mindset of approach is not defensive. Rather when there is no pre-biased opinion or fear, there is a pleasant sense of adaptation that allows the smooth flow of the appointment. Any different kind of behavioural exhibit occurs only when kids are anticipating an intervention, when they had been in pain or when in general they come fatigued.

The discussion of needles is considered to be the most common subject just prior to the visit to the dentist. This discussion can become even more intense when there is already a perceived treatment need. Very young children can have the fear of the unknown, anxiety with strange and new places.

The older ones develop extreme fear by talking to peers who have been to the dentist before. Some of them might have had good and some others not so good experience. Sometimes, past unpleasant parental experience can distort the child’s adaptability to the dental appointment. They enter the clinic with the preformed image of the dentist which is not very convincing and helpful to the child. These external experiences can lay the foundation of the child’s coping ability in the dental chair.

How can lasers help?

Since laser is not commonly available at all practices, there could be a possibility that there had been no real discussion on the use of lasers in the treatment. Another possibility of having a good experience with lasers can change the perception of the child who is in for the first time. When laser is introduced to the parents, they are informed about details on the functioning of laser and its benefits. While explaining euphemisms to the child, the laser is shown as “Popping Light”. There is a significant number of children who go awe-inspired to come back and get their teeth fixed.

The whole mindset of the child changes when they are told that treatments do not involve any needles approach.

“No Anaesthesia” Procedures that can be done without anaesthesia are:

– Restorations: Decays involving occlusal, labial, palatal, buccal or proximal surfaces of the teeth.
– Deep restorations on teeth with decays close to the pulp.
– Pulpotomies in primary teeth.
– Pulpectomies in primary teeth.
– Pulpectomies in primary teeth with abscess, fistula or swellings.

The term “No Anaesthesia” is a misnomer as the procedure is accom-
plished with few drops of anaesthetic in between, especially when endodontics is involved. The “No Anaesthesia” approach for enamel dentine restorations is the erbium laser Prep mode for restorative dentistry. MX7, 3.75 W, 25 Hz, air, water. There are two commercial settings that can be followed for the most acceptable cavity preparation:

- Rapid Prep: MX7, 5 W, 20 Hz, air 80, water 50;
- Comfort Prep: MX7, 3.75 W, 25 Hz, air 60, water 50.

This setting is usually used for enamel caries removal as water content is lesser. Since there is less water in the enamel, higher power is needed for appropriate absorption of laser.

- Comfort Prep: MX7, 375 W, 25 Hz, air 60, water 50. Following this step, the tooth is isolated and restored with composite.

Pulpectomy procedure with erbium laser

When the carious decay is found deep and in close proximity to pulp, excavation is attempted. This step is followed with Bond Prep: MX7, 3.75 W, 50 Hz, air, water 30. Following this step, the tooth is isolated and restored with composite. (Figs 1 & 2)

Pulpectomy procedure

Deep caries are excavated with pre-adjusted rapid prep settings: MX7, 5 W, 20 Hz, air 80, water 50; and then comfort prep settings: MX7, 375 W, 25 Hz, air 60, water 30. These settings are used followed by complete laser access opening.

After removing the carious pulp contents, the chamber is irrigated and dried followed by diode laser sterilisation and coronal pulp filling with zinc oxide eugenol. The tooth is then filled with base Fuji IX and final restoration is done with composite or stainless steel crown.

Pulpectomy procedure with erbium laser

Teeth that have chronic profound caries, active signs and symptoms, and radiographical signs of pulp involvement, are indicated for Pulpectomy. Pulpectomy involves the removal of both coronal and radicular pulp contents.

When the tooth is indicated for pulpectomy or root canal procedure, deep caries are excavated with pre-adjusted rapid prep settings: MX7, 5 W, 20 Hz, air 80, water 50, and then comfort prep settings: MX7, 375 W, 25 Hz, air 60, water 30. These steps are followed by complete laser access opening.

Until the point that canals are found completely dry, obturation is deferred. Usually it takes one or two visits to complete the final steps of obturation in teeth with abscesses or fistula. The entire treatment is completed with intrapulpal drops of anaesthetic when required. No infillations or blocks are used in the entire procedure.

This procedure has been practiced as an alternate to pre-times extraction of primary teeth that has to be then replaced with a space maintainer. Most of the parents prefer this approach when compared to extraction, as they do understand that having the natural tooth as the space maintainer is indeed the best approach.

Benefits of “No Anaesthesia” dentistry

- No risk of children having traumatic bite after the procedure is completed. The times when anaesthesia in children was a common practice, it was imperative to let the child and parents know about the numbing effect that would stay for few hours after the procedure. Cotton roll is given to bite on so that it serves as a reminder for the child.
- Despite all these precautions, children may still land up in biting there lip or cheek. Once there is a traumat-ic bite, there is nothing much that can be done as the traumatized tissue has to self-heal. This can be quite painful for the child, thereby defeating the entire purpose of pain free dental approach.
- Multi-quadrant dentistry can be practiced on the same day, same appointment.
- There is actual saving of chairside time, as there is no waiting period for local anaesthesia to work.
- Children can eat a few minutes after the procedure, which is not the case with the local anaesthesia.

Conclusion

Practicing contemporary dentistry in children with the appropriate usage of technology and the key tools, is the way forward. The benefits of the “No Anaesthesia” erbium approach far outweighs the existing alternatives. This kind of professional approach can certainly become the gold standard for dentistry in children in the very near future.
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Root canal therapy and coronectomy

Fig. 1: Partially erupted third molar and inflammation of the gingiva distally.

Fig. 2: Pre-op radiograph showing a hook-like curve of the mesial root, as well as the relationship between the pulp chamber position and the bone level.

Fig. 3: CBCT scan showing the root migration above the nerve, allowing for safe extraction.

Fig. 4: File in a mental canal showing the abrupt curvature.

Fig. 5: A complete root canal therapy was performed.

Fig. 6: Bitewing radiograph taken during the surgical procedure, showing the level of the surrounding bone and the remaining part of the tooth.

Fig. 7: A small field of view CBCT scan confirmed the outcomes of the surgical procedure and root canal therapy.

Fig. 8: Two-year follow-up radiograph.

Fig. 9: CBCT scans showing the root migration above the nerve, allowing for safe extraction to be performed.

Fig. 10: Comparison of the immediate post-op situation and the situation at the two-year follow-up.

By Drs Mirna Hobeika, Ali Hajj Has-san, Edgard Jabbour & Philippe Sleiman, Lebanon

Coronectomy is a procedure that generally spars the vital coronal pulp and is performed to avoid the risk of damaging the inferior alveolar nerve (IAN) during the surgical procedure when extraction of mandibular third molars is indicated or needed. Coronectomy is the removal of the crown of the mandibular third molar without exposing the pulp. The coronectomy procedure is performed only on the third molar crown, leaving the roots in the socket. This procedure is now known for its benefits and success rate, in contrast to the contemporary belief that the roots left behind will be a source of problems. Risk factors for nerve injury include root proximity, the surgeon’s experience, surgical procedures, the patient’s age and pre-existing disease. Several studies have shown that coronectomy significantly decreases the risk of iatrogenic injury to the IAN and lowers the complication rate. Coronectomy has been associated with a low incidence of complications in terms of IAN injury (0–0.3%), lingual nerve injury (0.0–3%) and pulp disease (0.0–5%) in addition to other rare events, such as swelling, fever, alveolitis, pulps and root exposure.

Coronectomy to prevent IAN damage was first proposed by Luyer and Debien in 1984, and it remained controversial owing to the possibility of infection and other pathologies arising from the roots left behind. Potential complications include deep dry sockets, local postoperative infections, postoperative pain, pulpal, root canal necrosis and infection, and an increased risk of IAN infection, which is known as failed IAN.

The point of discussion is whether it is necessary to perform root canal therapy simultaneously with coronectomy if the pulp is going to be exposed during the surgical procedure. A new method combining coronectomy with root canal therapy is used. It involves performing endodontic treatment of the teeth, and IAN injury to the IAN and lowers the complication rate.3 Coronectomy significantly decreases the risk of iatrogenic injury to the IAN and lowers the complication rate.

Case presentation

A female patient in her mid-twenties was suffering from typical partially erupted third molar complications (Fig. 1). Extraction was advised in order to decrease the risk of infection, pain and other complications. Extraction was performed (i-CAT), as is advised prior to any surgery (Fig. 3). The cross sections revealed an intimate relation between the mesial root and the nerve, and thus indicated that any surgery at this point could cause some trauma to the nerve. The situation was explained to the patient, who was very concerned about the potential injury to the IAN. However, the patient presented with acute pain, which would require treatment, possibly antibiotic therapy, which in the future would be her go-to in case of a flare-up.

Two years after the treatment, the patient returned to the clinic complaining of some pressure sensations in the area. A CBCT scan was performed to investigate the situation, and it revealed a pleasant surprise: the tooth had migrated coronally and gone above the nerve (Figs. 8 & 9). We explained to the patient that the remaining part of the tooth had moved towards the gingival level, which was why she was feeling pressure, and now it would be safe to remove the remaining tooth. The surgeon performed the intervention. Figure 10 shows how much the tooth had migrated over the two years and demonstrates the absence of any infection under the roots.

Illustration note: A list of references is available from the publisher.

Dr Philippe Sleiman

is an assistant professor at the Faculty of Dentistry of the Lebanese University in Beirut, Lebanon. He can be contacted at profsleiman@gmail.com.

From this discussion with the surgeon and studying carefully the radiographs and CBCT data, it was clear that it was necessary to cut the crown below bone level, pulp exposure and partial pulpectomy were inevitable. Therefore, in order to minimize postoperative complications, the decision was made to perform a root canal therapy on the third molar to reduce the risk of pulpitis or infection in the apical part. The patient agreed to this solution.

Endodontic treatment was performed using the TF Adaptive SM (small/medium) procedure pack (Kerr) for root canal shaping. During the treatment, one perapical radiograph was taken (Fig. 4) and it showed the curve on the mesial roots. Irrigation was performed very safely with the EndoVac unit (Kerr), as any extrusion of sodium hypochlorite could have severe consequences for the nerve and the apical area. The root canal therapy was completed in a single visit (Fig. 5), following which the surgeon performed the coronectomy. A bitewing radiograph was taken to check the level of the crownal part after the extraction and confirm that it was complete or the bone level (Fig. 6). A reinforced glass ionomer was used to seal the roots, and sutures were placed and left for one week. A small field of view CBCT was taken to check the postoperative outcome of the procedure (Fig. 7).
When an idea turns into innovation

By Marc Chalupsy, DTI

Although the headquarters of COLTENE are in Switzerland, its endodontics plant is in southern Germany. At the factory, located in Langenau, a town between Stuttgart and Munich, 155 employees produce treatment auxiliaries and endodontic equipment in a fully automated and camera- and laser-controlled process. The German location houses an impressive logistics department thanks to the office’s central location. Dental Tribune was invited to learn more about the company’s endodontic products.

A now well-known expert in endodontics, Dr Barbara Müller has been responsible for the company’s endodontics business unit for over 20 years. She takes pride in the company’s achievements. Today, COLTENE is an international leader in the development and manufacture of dental consumables and solutions for a variety of applications. The company operates worldwide, with subsidiaries and distributors in over 120 countries. With the 1990 introduction of the ParaPost X System, COLTENE came to be known as a provider of endodontic solutions. This position has been further entrenched in recent years as the company’s portfolio of endodontic products has continued to grow.

An impressive endodontic range

The CanalPro line, for example, features a cordless endodontic motor, a fully automated electronic apex locator and a variety of rinsing solutions, which are colour-coded for procedural safety. ROEKO and HYGENIC paper points are sterile and highly absorbent, and being non-adhesive, allow for reliable and easy drying of the root canal. Fast and safe obturation can be conducted with GuttaFlow bioseal, a bioactive three-in-one obturation material that combines cold free-flow gutta-percha with a sealer and bioceramic in one outstanding filling system and with HYGENIC and ROEKO gutta-percha points. Recent studies have evaluated the in vitro toxicity of endodontic sealers such as GuttaFlow bioseal and GuttaFlow 2, as well as Angelus’s MTA-FILLAPEX and Dent...
Root canal treatments with the Endo-System by VDW – Peace of mind included

By VDM

MUNICH, Germany: Deliver root canal treatments with an opt-mally integrated concept from a single source. This claim is be-hind the tradition of endodontics. For almost 120 years, many is one of the most well-known manufacturers working in the dental field of endodontics. For almost 120 years, VDW has been a pioneer in shaping the evolution of root canal treatment significantly. VDW focus-es on offering the dentist a holistic solution covering the entire endoen-dodontic treatment process including preparation, irrigation, obturation and post-endodontic care as well as service and training.

For more information about the products, please visit www.vdw-dental.com/en/

Root canal treatments with the Endo-System by VDW – Peace of mind included

Fig. 7

Fig. 8

Fig. 9


Root canal treatments with the Endo-System by VDW – Peace of mind included

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Materials and systems for all ceramic CAD/CAM restorations

By Drs. Christian Brenes, Ibrahim Duqum & Gustavo Mendonza, USA

Dental crowns have been used for decades to restore compromised, heavily restored teeth, and for aesthetic improvements. New Computer Aided Design/Computer Aided Manufacturing (CAD/CAM) materials and systems have been developed and evolved in the last decade for fabrication of all-ceramic restorations. Dental CAD/CAM technology is gaining popularity because of its benefits in terms of time consuming, materials savings, standardisation of the fabrication process, and predictability of the restorations.

The number of steps required for fabrication of a restoration is less compared to traditional methods (Fig. 1). Another benefit of CAD/CAM dentistry includes the use of new materials and data acquisition, which represents a non-destructive method of saving impressions, restorations and information that is saved in a computer and constitutes an extraordinary communication tool for evaluation.

The incorporation of dental technology has not only brought a new range of manufacturing methods and material options, but also some concerns about the processes involve...
partially sintered zirconia puck. Fig. 4: Full arch implant supported prosthesis milled from a matrix and used for single unit restorations; monolithic blocks require layering or slabbing to achieve good aesthetic results. Different in vitro studies that evaluate the marginal accuracy of milled lithium disilicate reveal that these restorations could be as accurate as ±0.15 to 0.16 mm.

According to the manufacturer specifications, the design principles for lithium disilicate are produced by default in the design software, but in full-all-ceramic crowns structures the minimum thickness must be respected in the preparation design (Table I).

During the crystallisation process, the ceramic is converted from a lithium metasilicate crystal phase to lithium disilicate. Some commercial types of ceramics are Empress CAD (Ivoclar Vivadent) and IPS E-Max. The first one is a leucite based glass ceramic with a composition similar to Empress ceramic. IPS E-Max was introduced in 2006 as a material with a flexural strength of 360 to 400 MPa (two to three times stronger than glass ceramics), the blocks are blue in the partially crystallized state but achieves the final shade after it is submitted to the firing process in a porcelain oven for 20 to 25 minutes to complete the crystallisation; the final result is a glass ceramic with a flexural strength of approximately 15 MPa and 70 percent volume crystallinity incorporated in a glass matrix.

In 2014, Vivident released Suprinity, the first ceramic milled with zirconia (±0.05 percent weight), this material is a zirconia reinforced lithium silicate ceramic (ZLS) available in a precrystallized or fully crystallized (Suprinity FC) state indicated for all kinds of single all-ceramic restorations.

Zirconia
Zirconia has been used in dentistry as a biomaterial for crown and bridge fabrications since 2004; it has been useful in the most posterior areas of the mouth where high occlusal forces are applied and there is limited interocclusal space.

Zirconia is a polymorphic material that can have three different forms depending on the temperature-monoclinic at room temperature, tetragonal above 1170 °C, and cubic above 2370 °C. The tetragonal form, which is the most stable phase above 1470 °C and 20.0°C and cooled, a volume shrinkage of 23 to 35 percent can occur that could affect marginal fit or passiveness of the restorations. This feature limited the use of pure zirconia until 1997 when Bierh and Gupta developed the yttria-stabilised zirconia (YTZP) containing a 2 to 3 percent mol-yttria in order to minimize this effect.

One of the most interesting properties of zirconia is transformation toughening. This phenomenon happens when a fracture takes place by the extension of an already existing defect in the material structure, with the tetragonal grain size and stabilizer, the stress concentration at the tip of the crack constitutes an energy source able to trigger the transformation of tetragonal lattice into the monoclinic phase. This process dissipates part of the energy that promotes progression of cracks in the restoration, thus allowing a further expansion of around 5.5 percent that increases the energy that opposes the crack propagation.

Zirconia restorations can be fabricated from fully sintered zirconium oxide or partially sintered zirconium oxide blanks (green-state). Proposals for marginal fit or passiveness of the restorations is better because it avoid volumetric changes during the fabrication process. On the other hand, the partially sintered zirconia blocks have a higher density and faster to mill and proponents of milling partially sintered blocks claim that more cracks can be controlled during the restoration during the milling process and it also requires more time and intensive milling processes; this micro defects or surface flaws can affect the final strength of the final restoration and could potentially chip the marginal area, however further research is needed about this topic.

One of the first systems that used zirconia was Ceram.Zirconia(Vident), which is a modification of the In-Ceram Alumina but with the advantage of partially stabilised zirconium oxide to the composition. Recently many companies have integrated zirconia into their CAD/CAM workflow due to their mechanical properties, which are attractive for restorative dentistry; some of these properties are high mechanical strength, fracture toughness, radiopacity for marginal integrit injury evaluation, and relatively low esthetic risk.

Different manufacturers are using zirconia as one of their main materials such as: Ceramill Zolid (Amann Girrbach), Procera (Denstenly, Bruus(zer (Caldedew Laboratories), IPS ZIRCAD (Ivoclar Vivadent), Zirconost (Ivoclar Vivadent), inCorts ZI (Ivoclar Dental), VITA In-Ceram (Vivadent), among others. Companies have introduced materials that are in combination with zirconia to improve its mechanical properties in different clinical situations. Lava Plus, for example, is a combination of these materials using CAD/CAM systems that generally consist of a scanner,
Table 2: Most popular dental CAD systems available for 2015.

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<th>Manufacturer</th>
<th>File output</th>
<th>Milling materials</th>
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<tbody>
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<td>Denzir</td>
<td>Nobel Biocare</td>
<td>Zirconia, wax, PMMA</td>
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<tr>
<td>Chrome Cobalt, PMMA, wax, titanium</td>
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<tr>
<td>BruxZir Mill</td>
<td>Glidewell</td>
<td>Zirconia, glass ceramic, ceramic resins, Lithium Disilicate, CeramTec, Lava, wax, titanium</td>
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<tr>
<td>CeraMill</td>
<td>3Shape</td>
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design, computer and a milling ma- chine or 3-D printer. Laboratory dental are able to receive digital impression files from dentists or use a scanner to create digital models that are used for restorations designing or CAD. Dental scanners vary in speed and accuracy. Milling machines vary in size, speed, axes, and also in which restorative materials can be milled; in this category milling machines could be classified as wet or dry de- pending if the materials require ir- rigation.

The development of dental CAD/ CAM systems occurred around 1980 with the introduction of the Sophia system developed by Dr. Francesco Durlet. A few years after that event, Dr. Werner Momma and an engineering technical engineer Marco Brandestini de- veloped the CEREC’s system in 1983, thus began the digital dental systems de- signed to allow dentists to design and fabricate in-office restorations. Since then, the continuous evolution of systems dedicated to this field has continued and has exponentially in- creased in the last decade.4

CEREC systems has evolved into CEREC Bluecam scanner accuracy as close as 17 microns for a single tooth have been reported by using this system. Recently CEREC systems has implemented true colour digital impressions with- out the need of a contrast medium.

In a recent study by Neves et al. (2011) on the marginal fit of CAD/CAM restorations fabricated with CEREC Bluecam in comparison with the same restoration fabricated with digital impressions, dentists were able to detect marginal gaps below 10 microns in less than 10 seconds. The system duplicated an acrylic resin pattern replica of a res- toration. Zirkonzahn developed a similar system called the Zirkograph in 2005, which was able to copy-mill zirconia prostheses and restorations out of a replica of the restoration. Some years after, the Cerec system (DENTSPLY CereCAD) was able to de- sign and mill zirconia restorations using a wax pattern.5

Almost at the same time that these companies developed the first copy dental milled prototypes, Lava (3M ESPE) was introduced in 2002 in the fabrication of yttria-tetragonal zirconia polycrystal (Y-TZP) crowns and frameworks for all ceramic restorations. With the Lava system, the die is displaced by an optical process, the CAD software designs and enlarges the restoration or framework that is milled from the pro- sintered blank. Studies on mar- ginal adaptability suggest that Lava restorations have a marginal lip that can be as low as 21 microns.4 Some other systems that were able to mill zirconia were DCS (Zirkonzahn/Dental TEC- nology) and Denzir.

In the last decade, companies have decided to differentiate their products by having a full CAD/CAM platform or being able to scan a specific area of expertise like CAD software, digital scanners; these compa- nies claim to be open platforms that allow their systems to allow to export universal files such as STL or OBJ to be used with the majority of nest- softwares and milling machines and therefore be able to import them.

Defenders of closed plat- forms claim that the inte- gration of the CAD/CAM systems does not allow for a good integration between parts and clinics, leading to the incremental fabrication of CAD/CAM restorations with the materials recommendation and capabilities.

Some of the main concerns from cli- nicians on the marginal fit of CAD/ CAM systems is the accuracy of the marginal adaptation.4 Some research about systems integra- tion is available. Table II shows some of the most used CAD systems with their material recommenda- tions and capabilities.

The Procura system, introduced in 1993, was the first system to provide fabrication of a restoration using the network architecture. According to research, data the average ranges of marginal fit of these restorations are from 5 to 14 microns.4 A computer integrated crown reconstruction system, known as LavaMill by Denzir et al. in 1999 included a rapid custom fabricate of high-strength alumina coping and seminished crowns to be delivered to dental laboratories for porcelain layering and finishing.4

Another system that was developed years ago was the Celay system, which was fabricated integrated crowns restora- tions through a copy-milling process. The system is described by an acrylic resin pattern replica of a res- toration. Zirkonzahn developed a similar system called the Zirkograph in 2005, which was able to copy-mill zirconia prostheses and restorations out of a replica of the restoration. Some years after, the Cerec system (DENTSPLY CereCAD) was able to de- sign and mill zirconia restorations using a wax pattern.4

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www.dental-tribune.com
By Dr. Shiamaa Al-Mashhadani

The World Health Organisation (WHO) considers caries, periodontal diseases, loss of teeth, oral cancers and trauma as major causes of health burdens. Dental cavities can be found in 60-90 per cent of children of school-going age. Not only is there an alarmingly high prevalence of dental disorders worldwide, but there is also sufficient evidence to suggest that the benefits of the current interventions aimed at reducing these burdens are not reaching the populations at risk.

In similarity with the global trend, surveys in the United Arab Emirates (UAE) have also revealed a startlingly high prevalence of various dental diseases. Surveys have revealed that 93 per cent of children aged five years are affected by caries, and 32 per cent have four or more decayed, missing or filled teeth (DMFT). In a study conducted in Abu Dhabi, an Emirate within the UAE, the mean DMFT score was recorded at 8.4, 8.6, and 5.7 for children aged five years in various regions of the Emirate. The latest study focusing on the Emirate of Dubai shows similar high numbers, with caries prevalent in 65 per cent of five-year-old children. Ten per cent of these children have more than five teeth with untreated caries. Data from these studies highly suggests that there is an urgent need for action to counter the widespread dental diseases in the UAE. The WHO has suggested a number of cost-effective and holistic interventions to counter the increasing prevalence of dental diseases.

Preschools and schools provide an important base to promote oral health as they reach large numbers of students who pass on these messages to their families. Schools can make substantial contributions to students’ health and well-being. This has been increasingly recognised by many international initiatives including those from the World Health Organisation (WHO), UNICEF and UNESCO. This means that the oral health messages reinforced in schools will eventually reach the whole community.

The New York University Abu Dhabi Public Health Think Tank (PHITT) is a collaborative, interdisciplinary and locally engaged initiative designed to catalyse public health innovation in and beyond the United Arab Emirates. This year, the PHITT concentrated on oral health in an immersive, two-day event where delegates planned an oral health intervention alongside students from across the UAE and received lectures and guidance from leading public health professionals.

The winning team (Team Ras Al Khaimah) proposed a project with the aim to decrease the prevalence of caries in children across the UAE by increasing oral health awareness and constant reinforcement through the incorporation of oral health into the moral education curriculum within public schools. To implement this intervention, a pilot study will be conducted on schoolchildren from Grade 1 until they reach Grade 6 from 2018 to 2020. The group chosen will be educated each year within the pilot program on multiple levels of dental health awareness, and the results of their decayed, missing and filled teeth (DMFT) will be collected after six years. When comparing these results to the DMFT data of previous sixth graders who were not exposed to the oral health education program, an improvement is expected, which will prove the effectiveness of the intervention. The oral health program will then hopefully be implemented into the moral education curriculum in schools across the UAE.

To catalyse public health innovation and make substantial contributions to students’ health and well-being, the students’ health and well-being. This means that the oral health messages reinforced in schools will eventually reach the whole community. The early years of a child’s life are the most influential in reinforcing habits and attitudes, therefore teaching the students at this age about proper oral health habits will have a lifelong effect. They will be healthier and more productive individuals in their community, having better quality of life with a potential to long-term cost saving. To eliminate dental problems, one must follow a tripod approach of education, prevention and availability of oral health care.

Interdental brushes of all sizes and range are available for the CPS perio secondary prophylaxis. The probe is the right size further supports the patient in performing optimal secondary prophylaxis. The probe is now also available for the CPS perio range. The chairside box contains CPS perio and probes for the precise measurement of interdental spaces. The holders can be reused if required.

Secondary prophylaxis with CPS perio

As soon as the active treatment phase has been concluded, the patient follows a specific periodontal care protocol that takes into account his or her oral health status, for example if the patient’s papillae are badly injured or if there are black triangles. Regardless of the treatment, the work by the practice team constitutes only 30 per cent of the success. The remaining 70 per cent is up to the patient himself or herself.

Most interdental brushes do not completely fill the interdental space and are much too hard and their use thus leads to pain. The CPS perio is especially suited to periodontitis patients. This interdental brush is sufficiently rigid to give a really efficient clean, but soft enough to avoid pain. The wire used in the CPS perio is stronger than that in the CPS prime, to keep the brush sturdy. The extra-long and fine bristles of the CPS perio effectively and carefully clean the large gaps of bridges, crowns or fillings.

The practice team’s use of a calibrated CURAPROX interdental brush probe to choose interdental brushes of the right size further supports the patient in performing optimal secondary prophylaxis. The probe is now also available for the CPS perio range. The chairside box contains CPS perio and probes for the precise measurement of interdental spaces. The holders can be reused if required and the probes can be autoclaved. Interdental brushes of all sizes and
Erythritol functional roles in oral-systemic health

By P. de Cock

Oral health functionality of Erythritol

Makinen et al. 2005 demonstrated that in comparison to other sugar alcohols like sorbitol and xylitol, erythritol can decrease dental plaque mass and acids associated. Erythritol has the potential to reduce streptococcus mutans in saliva hence minimizing the risk of dental caries. Falony et al 2018 concluded that the erythritol group had significantly fewer tooth surfaces with enamel or dentin caries in comparison with sorbitol. In addition, the time of enamel or dentin caries lesions to progress and delay and prevent the development and progression of caries.

Permanent teeth may be affected by caries at an early stage in the case of caries-affected primary teeth, as the enamel has not yet fully hardened. Because oral hygiene and caries prevention can be challenging in young children, the use of fluoride varnish can be beneficial.

For this reason, the IQWiG researchers investigated whether the application of fluoride varnish to primary dentition has advantages in comparison with standard care with out fluoride application by comparing the findings of 15 randomised controlled trials. In these, a total of 5,002 children were treated with fluoride varnish, and 4,705 children received no such treatment, being the control group. Children aged up to 6 years with or without caries of their primary teeth were included in the research.

In several of the studies, further measures for caries prevention in addition to the application of fluoride varnish were offered. These included training on oral hygiene, instruction on the correct toothbrushing technique, and the provision of toothbrushes and fluoridated toothpaste. The follow-up observation period was mostly two years.

The development of caries was investigated in all 15 studies; side effects were investigated in nearly all of the studies. However, owing to a lack of conclusive data, it is unclear whether fluoride application also has advantages regarding further patient relevant outcomes, such as tooth preservation, toothache or dental abscesses. There was no data on oral health related quality of life.

Erythritol was the most effective agent to reduce P. gingivalis accumulation on S. gordonii substrata compared to xylitol and sorbitol.

Systemic health effects

Erythritol is noncaloric, nonosmotic, and nonglycemic besides being well tolerated. It has a very high bioavailability, showing potential to provide cardiovascular benefits due to its capability to act as an antioxidant systemically.

Effects of Erythritol on the Gastrointestinal Tract

Munns et al 1998 reported the fact that erythritol due to its small molecular size is rapidly absorbed through passive diffusion. Approximately 90% of the ingested dose is absorbed from the small intestine and excreted in the urine unchanged. European Food Safety Authority also confirmed that young children tolerate erythritol equally well as adults on a body weight basis.

Effects of Erythritol on Cardiovascular Health

Boelen et al. 2019 in a research confirmed that in endodontial cells, erythritol could shift a variety of damage and dysfunction parameters to a safer side, thereby reversing the damaging effects of hyperglycaemic conditions.

Conclusion & Sales arguments

- Erythritol as an antioxidant improves the endothelial function and their vascular health status in people with type 2 diabetes.
- Erythritol provides healthier tooth protection than sorbitol and xylitol, in children and teenagers.
- Erythritol’s importance not only in oral care or dietary-based preventive strategy but also to help maintain oral and cardiovascular health besides supporting weight management benefits when replacing sugar.

Erythritol is not just an AIR FLOW powder, but a complete efficient and safe one step solution for dental prophylaxis with additional supportive action as an antioxidant.

Fluoride varnish in primary dentition positively affects caries prevention

By DTI

COLOGNE, Germany: Whereas caries in children increases in Germany is declining, research has found that about 12 per cent of 5-year-olds in the country have cavities in their primary dentition. According to a report by the Institute for Quality and Efficiency in Health Care (IQWiG), fluoride varnish is effective in remineralisation of the tooth surface and prevents the development and progression of caries.

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A clear advantage of fluoride varnish was determined despite the very heterogeneous study results. After the application of fluoride varnish, caries in primary teeth was less frequent. More precisely, the fluoride treatment could completely prevent caries in approximately every tenth child and would at least reduce progression of caries in further children.

Apparently, whether the children already had caries or whether their teeth were completely intact made no difference regarding the benefit of fluoride varnish applications.

The report titled “Assessment of the application of fluoride varnish on milk teeth to prevent the development and progression of initial caries or new cavities”, was published online by IQWiG on 26 April 2018.

EFP set to celebrate European Gum Health Day 2018

By DTI

LEIPZIG, Germany: On 12 May, the European Federation of Periodontology (EFP) and 29 of its affiliated national societies will participate in European Gum Health Day 2018. With the slogan “Health begins with healthy gums”, the day seeks to raise awareness of periodontal disease’s deleterious effects through a range of informative and engaging activities.

Coordinated by Dr Xavier Struiklos, an elected member of the EFP executive committee, European Gum Health Day 2018 aims to build upon the success of last year’s in-augural event. Through television and radio interviews, press releases, press conferences and individually produced video content, many of the participating national societies will be seeking to widely communicate and emphasise the importance of periodontal health for general health. Dentists and other dental professionals are also invited to sign the EFP Manifesto, a call to action for the prevention, early detection, and early treatment of gum disease.

National societies of periodontology from Austria, Azerbaijan, Belgium, Croatia, Denmark, Finland, France, Germany, Greece, Hungary, Italy, Israel, Ireland, Lithuania, Morocco, the Netherlands, Norway, Poland, Portugal, Romania, Russia, Serbia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine and the United Kingdom will be actively involved in the day. All of these societies have employed the logos, posters, info-graphics and templates provided by the EFP to convey a shared message that transcends borders.

In addition, an agreement with the BeniPanamericano Federation of Periodontology (PFP) will see PFP’s eight Caribbean and South American member associations, as well as the national periodontology societies of Colombia and Panama, also taking part in European Gum Health Day 2018.

“We are very excited that the Latin American peri societies are for the first time joining European Gum Health Day 2018 and that they are helping us to convey the awareness message ‘Health begins with healthy gums’,” said Struiklos.

“European Gum Health Day 2018 aims to remind people that—even if still often overlooked—gum health is a key factor for general health throughout life, and that gum disease is a relevant public health concern because it is linked to very serious conditions, including heart disease and cerebrovascular disease,” he added. “Gum health can help us to save many lives, to detect or prevent many severe conditions, and to save billions in medical costs.”

Anton Sculean, president of the EFP, added: “Gum disease’s prevalence and gravity increase with age and as a result of contributing factors such as smoking and obesity, but it can be prevented and successfully treated, especially if diagnosed early. That is why, as our motto says, ‘Health begins with healthy gums’, and we have an opportunity to take action.”
World Oral Health Day 2018 celebrated across Dubai

By Dental Tribune MEA/CAPPmea

Philips Sonicare is an official global partner of World Oral Health Day (WOHD), which takes place every year on March 20th, organized by FDI World Dental Federation. This year, the campaign ‘Say Ahh. Think Mouth. Think Health’ encourages people to make the connection between oral health and general health and well-being. World Oral Health Day is committed to educating consumers and dental professionals on the importance of developing good oral healthcare habits at an early age and increasing education on the impact oral health can have on general health conditions.

It’s a day full of activities that make everyone laugh, sing and smile!

The Dubai Health Authority (DHA) in cooperation with Philips Sonicare organized an exciting schedule for everyone by inviting The Singing Dentist, Dr. Milad Shadrook, to join in celebrating WOHD in Dubai. The schedule of activities for WOHD was very exciting. It all started on 11 March on the Claghto radio, where a competition for children under the age of 16 years was held. The competition task was to rap or sing a song related to oral health. The winner would receive a chance to make a recording with The Singing Dentist himself for the following day’s Breakfast Show. The DHA and Philips were present at the Dubai Modern Education School, (DMES) where the students were to have a happy and healthy community and that of the Dental Services Department at the DHA.

On 20th March, The Singing Dentist, Dr. Shiamaa Shihab al-Mashhadani, head of the DMES, Michael Ciptiano Principal of DMES, head of the American section, and respected academic and medical staff from the school for accommodating this festival of oral health awareness and the celebration of WOHD that is organised by the FDI World Dental Federation, as well as the inauguration of the second edition of the “My Smile” oral health school programme, of which Dr. Shihamf Shihab al-Mashhadani from the DHA is a leader. Additionally, thanks went to the DHA’s strategic partner, Philips Sonicare, for their continuous support of the Dental Services Department, and to the Knowledge and Human Development Unit and the Educational Institutes Unit in the DHA.

The main attraction of the day was that, in the end, the primary goal was to have a happy and healthy school for everyone participating, was, of course, The Singing Dentist. He performed several of his “hit” songs, during which the entire audience sang along. He also met the students who had won the competition on oral health benefits. At the same time, several stations were placed along the room with different oral health activities in which the students participated. The DHA, together with the Emirates Dental Hygienist Club, educated the youngest in a fun manner about oral health care.

The DHA hopes that the students benefited from the programme and that, in the end, the primary goal was achieved, which was to have every student of Dubai be healthy and happy.
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CAPP’s Clinical Implantology Programme live surgical treatment performed in Ajman University

By Dental Tribune MEA / CAPPmea

CAPP-Tipton Dental Academy, British Academy of Dental Implantology (BADI) and the British Academy of Restorative Dentistry (BARD) have launched the Clinical Implantology Certificate and Diploma programme in Dubai, UAE. Group 1 started in January 2018. Group 2 will be starting on 17 October 2018. The same programme has been happening in the UK since 1992 and is now offered in Dubai.

Several weeks ago the delegates completed Module 2 of the programme where they performed a live-patient treatment hands-on training. The hands-on part of the programme took place in Ajman University so the delegates had access to professionally equipped clinical. The course is ideal for dentists with little or no experience in placing implants and oral surgery but also for dentists who are looking to further enhance their clinical skills by placing implants in real-life situations. As delegates work towards placing implants under supervision, they will be able to practice these skills by treating patients, not only delivering results but knowing the reasons why the results were delivered.

The programme covers the key aspects of dental implantology to provide evidence based, safe and predictable treatment of participants’ own cases. As a live patient course there is significant focus on patient selection, identifying suitable implant patients and how to create an optimum treatment plan using checklists and digital treatment planning tools. Delegates will grasp an in-depth knowledge of all the adjacent therapies and diagnostic tools to ensure that planning stages are comprehensive and thorough enabling the patient journey is smooth and predictable.

This is the third programme that CAPP-Tipton Dental Academy and British Academy of Restorative Dentistry (BARD) have started in Dubai, UAE. There are over 170 delegates already participating in the Restorative & Aesthetic Dentistry Diploma and Clinical Endodontics Diploma.

The Certificate consists of 3 modules which take place every 2 to 3 months. Each module is 4 days long. The course offers the participants the chance to obtain a Certificate in Clinical Implantology from the British Academy of Dental Implantology (BADI) and the British Academy of Restorative Dentistry (BARD).

After a successful completion of the Certificate course, the participants will have the chance to sign up for the Diploma course which will lead to Post-Graduate Diploma in Clinical Implantology from the British Academy of Dental Implantology (BADI) and the British Academy of Restorative Dentistry (BARD). The Diploma consists of additional 3 modules which take place every 2 to 3 months. Each module is 4 days long. The entire programme (Certificate and Diploma) is 14 months long, 6 modules totaling 24 days.

CAPP-Tipton Dental Academy offers 3 Diploma programmes in Dubai UAE, namely:

For more information visit the above mentioned websites or Call/Whatsapp +971528423659 or e-mail p.mollov@cappmea.com

Live-patient surgical treatment hands-on training

Prof. Göran Urde from Sweden explaining the radiograph to the delegates
Considerations for Long Term Success

Implants are Never Forever!

By Dr. Shankar Iyer, USA

This article will emphasize the importance of factors to consider before treatment planning, for full arches with implants. It is not uncommon to make misleading promises when introducing implants as an option with unfounded claims of 98% success rates. Most of the success is attributed to the patient rather than the system if something goes wrong. The implants are the hardware and the system is the interface. If this interface isn’t up to par then we are looking at a catastrophic failure.

In the decades of the past, the understanding of cell biology may be limited but it is common knowledge that behavior of cells cannot be treated because the mitotic cycle for the DNA takes the programmed time period for turnover. Only in disease this rapid uncontrolled proliferation takes place. If this normal cycle is upset then we are looking at metaplastic or anaplastic changes according to the turnover rate. Claims made by certain companies that, bone heals faster with their implants is a misconception. Bone levels are maintained with their surface unique modification is also far from the truth. I have used over 16 different implant systems in my practice over the years and in my training programs and I have found that the osteoclasts are notoriously unbiased. There is bone loss with every system and modifying the surface or creating morphological shifts does not predictably deter bone loss.

In the courses I teach, I recommend waiting for a period of three years after any new feature or biological product is introduced into implant dentistry. There is no room for the latest or newest in clinical practice. If a company is constantly introducing new product lines and changing their designs, there is only one conclusion – they are having trouble and hence they have to change. A robust system that works seldom needs modification for getting predictable results. Aspirin can never be deemed as a cure but bone healing cannot be predicted for its efficacy, being stable and durable. The original Branemark external hex (now made of titanium but designed in 1965) is still very functional and a work horse for hybrid prostheses. The surfaces have improved much but its basic design and biomechanical considerations will be valid for another 50 years. Premature adoption of technology or materials is fraught with shortcomings and unknown consequences. Classical examples of potential catastrophic failures include the TSFs coatings, HA surface modifications, sintered surfaces, flapless surgeries, guided surgeries, immediate loading, costly BMPs and the list goes on.

The message is very simple – one crawl before they walk and you must learn to walk before you can run. The same is true for implant dentistry. The novice today has a wide choice – you can become a complete arch implant specialist with 4 implants and guided surgery over a weekend or spend a year learning the basics and judiciously treatment plan cases with customized solutions. Half of the participants of our Maxicourses that we run in the U.S. have placed hundreds of implants and got their training through corporate education. One does not become a musician by buying a piano or a musical instrument, nor can you become a pilot by buying a plane. Training in implant dentistry has become a fad. Most courses are offered through companies and the company’s sole interest is to sell their systems. There is a whole world of treat ment plan that is out there before the system can be utilized. Let’s not place the cart before the horse. The voice is very apparent the time is now for implementing judicious treatment plans. Let’s serve our patients with what they need and not what we want them to have.

Iyer’s Top 10 Guidelines for Predictable Implantology

1. Diagnose the problem first and don’t treat because you have a tool that you can use.
2. Measure the disease and provide the therapy, don’t sell concepts.
3. Leave what’s new and latest to the risk takers, stick with proven and tried systems.
4. Implants are the last resort in treatment planning – exhaust all conservative modalities.
5. Implants should replace missing teeth not replace teeth.
6. Expensive implants don’t mean success rates are better, cheaper does not mean everything works – you get what you pay for. There is no substitute for evidence based practice.
7. Consider every implant as a failing system.

Fig 1
Pre-op Patient Presentation

Fig 2
Radiographs of the Missing Maxillary Implant Reconstruction

Fig 3
Removal of implant FPD

Fig 4
Tissue Remnants After Removal of Prosthesis and Implants

Fig 5
4 week post op - after tissue conditioning

Fig 6
Starch/contrast Models after Scan

Fig 7
Bladder Sinus Lift and Implant Placement

Fig 8
Stage II Impression for Abutment selection

Fig 9
Universal Modified abutments for tissue level connection

Fig 10
Verification Jigs
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entity and the trick is to do the best you can to maintain it as long as you can.

8. Select the system that does not change its product line every year. There are no short cuts or faster way to get success in life and implants are no different.

10. The success rates of implants are inversely proportional to the number of years you practice implants.

Case Report

This case reports will provide a rationale for a sound sequential treatment plan in the management of long term failure of dental implants.

Judicious use of implants and their treatment planning should have long term considerations. I used to perform subperiosteal implants and blade implants in the past. One of the reasons for not using them now is not because they fail, but because in the long term, in the event of a failure, it can have some irreversible consequences. This case underscores the importance of over engineering cases from the beginning so that when patients live into their 90s they don’t become incapacitated, not being able to chew their food properly and lose the benefits of implants that they enjoyed for a long period of time.

A 78 year old Caucasian female presented to my practice for rehabilitation and management of a failing maxillary implant reconstruction. She reported having some implants 27 years ago and it has been troubling her with symptoms of sinus infections and movement of the entire maxillary prosthesis (Fig 9). Radiograph revealed bone loss around the unilateral subperiosteal implants and the blade implants in the anterior sextant (Fig 10). A verification jig was utilized to check for passivity and accuracy of the positions of the abutments (Fig 10). The metal frame was indexed, cast and tried in (Fig 11, 12). Face bow transfer record was obtained for orientation relationship. (Fig 13) Porcelain overlay for an FPD prosthesis was processed and inserted (Fig 14, 15). A mutually protected occlusal scheme was designed (Fig 16). The patient’s vertical was maintained. The post op radiograph reveals a stable outcome. (Fig 17) The anterior cantilevered crowns provide for optimal esthetics in the extremely resorbed anterior maxilla. The post operative outcome provided an esthetic and functional rehabilitation of the failing implant FPD (Fig 18). The provision of pontics enhanced the outcome in the esthetic zone and in this case it favored the design due to the atrophy that precluded implant placement in the premaxilla. The case has been in function for over 5 years and the patient has been on re care every 4 months.

The Faculty are as follows:

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The 2016-2017 Program Accredited by Health Authority Abu Dhabi for 228.5 CME Hours.

Digital Orthodontics Symposium addresses progressive topics

By Dental Tribune MEA / CAPPmea

DUBAI, UAE: CAPP (Centre for Advanced Professional Practices) held its first Digital Orthodontics Symposium. The event evolved around digital orthodontics in present dentistry and its importance for the future of orthodontics. From 04-05 May, around 122 orthodontists attended the event, which was held at the famous Madinat Jumeirah Conference Centre, Dubai.

The event gathered Top Key opinion Leaders from the dental field with a focus on the latest trends and developments in digital orthodontics. Digital dentistry can assist us in many ways, by assessing space and measuring the amount of crowding in cases, predicting treatment outcomes, assisting patients’ communication but also storing models digitally and treatment planning. With the introduction of 3D Printing in dentistry, the opportunities in orthodontics have expanded from digital impression taking, to developing virtual treatment plans and 3D printing of dental models. The Digital Orthodontics Symposium illustrated the necessity for orthodontists to look into and highly consider digitalizing their working ways to save time, money and provide more efficient and effective treatments for the patients.

Kicking off the symposium’s scientific program, Dr Naif Almosa, Assistant Professor at the Division of Orthodontics, and Consultant in Orthodontics welcomed warmly all present orthodontists at the event with his opening speech.

The symposium provided as exclusive opportunity to learn more about relevant topics from the experts in orthodontics.

Keynote speaker, Dr Francesco Garino from Italy focused on the digital revolution with intraoral scanners in orthodontics.

For hotels, visa and other registration information, please contact:
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PALAZZO VERSACE

A new paradigm in orthodontic bracket bonding

By King’s College London

Orthodontic treatment is widely-used in preventing and correcting irregularities of the teeth and jaws, by the use of braces. A novel method in orthodontic bracket bonding, developed by the Deb group from the Tissue Engineering & BioPhotonics Division at King’s College London, could eliminate enamel damage. This is a frequent occurrence on debonding including white spot lesion formation and chipping or cracking of enamel during bracket removal after orthodontic treatment. Introducing the PER system in orthodontics, which embodies the basic principles of the widely-used acid-etch technique which is designed to enable orthodontists to use metal brackets, and which now addresses the need to meet growing preference for ceramic brackets that are clear and provide an invisible appearance, which usually results in more enamel damage on removal of the brackets at the end of the treatment.

An international patent has been published on this know-how, which is expected to provide a revolutionary leap in orthodontic bracket bonding. The study was conducted in the Deb laboratories by Ali Ibrahiem, an orthodontist and a PhD student at the Dental Institute at King’s with support from Professor Van Thompson. Professor Sanjukta Deb explained ‘Orthodontists will embrace the technique since there are less clinical steps, no specialist training involved and in fact, due to no adhesive remnants left on enamel, this will eliminate the need for enamel polishing after bracket removal.’

King’s College London
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scanner and clinical applications of intraoral scanners in orthodontics. Another speaker Dr. Amar Benaddi from France spoke about a New 3D Concept in Vestibular Orthodontic Treatment, Prof. Ross Hobson from UK spoke about improving planning and predictability using digital workflows in ortho-restorative cases. After the break the stage took Dr. Khalid Hazem Atta from Egypt and his lecture “The Role of CBCT in Evaluating Carriere® Motion Appliance”. The event was concluded by Dr. Jaswinder Gill from UK explaining how to increase case acceptance with the digital workflow.

During the second day there were four various tables where the hands-on trainings took place. The tables operated simultaneously with a rotation of several groups for each table. The trainings were held in small groups (no seats available per session) in order to have the highest impact. Outstanding orthodontists presented various topics of a great interest. The participants had an opportunity to interact immediately and ask their personal questions. The practical demonstrations, at the same time, provided inspiration and offer means of troubleshooting.

The next Digital Orthodontics Symposium will take place from 12-13 April 2019 in Madinat Jumeirah Conference Centre, Dubai.
A retrospective study to evaluate the intra-arch dimensional changes in moderate crowding cases treated non-extraction with a passive self-ligation appliance

By Vishal Bharadwaj, Gurkeerat Singh, Sridhar Kanna, Raj Kumar Singh, Ashish Gupta, Gaurav Gupta, and Abhishek Goyal

Background
Irregularly spaced front teeth is one of the most frequently encountered chief complaint in day to day orthodontic practice. The etiology for which may be tooth size-arch length deficiency (3). This condition can be treated, either by reducing tooth size and/or by increasing arch width and/or arch depth (5-7). In other words, Orthodontists can gain space by expanding the arch anteropositively or transversely along with other conventional means, depending on the treatment plan.

Non-extraction treatment protocols are better accepted by patients as well as clinicians. Among the techniques and mechanics with the potential to facilitate nonextraction treatment includes higgeaux, fixed sagittal correction, transverse expansion screws and self-ligating systems. Although each of these approaches necessitates an increase in arch length to facilitate alignment without extraction, it has been purported that passive self-ligating brackets can induce specific, uniquely stable arch dimensional changes when used with thermalloy archwires (8).

Self-ligating brackets (SLB) are not new in orthodontics. They were introduced to the specialty nearly a century ago, with the Russell Lock (9) edgewise attachment being described in 1913. The Damon SL bracket (20) were introduced in 1996 and have been modified over the years. In the past two decades, there has been an increase in the manufacturing and release of self-ligating brackets with active or passive ligation modes. The basic advantage of these brackets involves the elimination of certain utilities or materials such as elastomeric modules along with the process or tools associated with their application. This is supposed to bring about several favorable features to the treatment including, the elimination of potential crosscontamination with elastic ligatures, consistently full engagement without the undesirable force relaxation of elastomeric modules, reduced risk for enamel decalcification from the elimination of the retentive size for plaque accumulation, reduced friction in sliding mechanics, and assumed low magnitude forces resulting in fewer side effects (10).

By Vishal Bharadwaj, Gurkeerat Singh, Sridhar Kanna, Raj Kumar Singh, Ashish Gupta, Gaurav Gupta, and Abhishek Goyal

Objectives
The objective was to retrospectively evaluate the intraarch dimensional changes in moderate crowding cases treated non-extraction with a passive self-ligating (Damon & M) appliance by assessing the pre-treatment and post-treatment digitized models and lateral cephalograms.

The study was formulated as a double blinded study.

Methods
A total of 20 patients between the age group of 15 - 18 years who had undergone non extraction orthodontic treatment with the Damon & M (Ormco, San Diego, Calif) appliance were selected. Patients with a full complement of teeth up to erupation were treated with the Damon appliance with a minimum period of 2 months for a minimum period of 2 months.

Followed by a 0.016” x 0.025” Cu Ni Ti for a minimum period of 2 months. A 0.017” x 0.025” Cu Ni Ti for a minimum period of 2 months.

Titanium Molybdenum alloy (TMA) was in place for 2 - 4 months.

Intermolar width (M1) of maxilla and mandible, Inter-1st premolar width (PM1) of maxilla and mandible; Arch depth of maxilla and mandible, Mandibular incisor inclination and Mandibular incisor inclination (Figures 1 - 4). Inter-canine width. Measurements were made from the cusp tips of the right and left first premolars. Inter-first premolar width. Measurements were made between the buccal cusp tips of right and left first premolars.

Parameters undertaken for study were measured digitally on the computer in millimeters which included intercanine width (C) of maxilla and mandible, Inter-first premolar width (PM1) of maxilla and mandible; Inter-second premolar width (PM2) of maxilla and mandible, Inter-molar width (M1) of maxilla and mandible.

The study was evaluated using Intra-oral radiographs and lateral cephalograms.

In the past two decades, there has been an increase in the manufacturing and release of self-ligating brackets with active or passive ligation modes. The basic advantage of these brackets involves the elimination of certain utilities or materials such as elastomeric modules along with the process or tools associated with their application. This is supposed to bring about several favorable features to the treatment including, the elimination of potential crosscontamination with elastic ligatures, consistently full engagement without the undesirable force relaxation of elastomeric modules, reduced risk for enamel decalcification from the elimination of the retentive size for plaque accumulation, reduced friction in sliding mechanics, and assumed low magnitude forces resulting in fewer side effects (10).

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The study was evaluated using Intra-oral radiographs and lateral cephalograms.
buccal cusp tips of right and left second premolars.

Inter first molar width: Measurements were made between the mesiobuccal cusp tips of right and left first molars.

3.1 Arch Depth
First line is drawn connecting the central fossa of first molars on the right and left sides. A second line was drawn perpendicular to the first, passing through the contact point between the central incisors.

Cephalometric tracings were performed using digital cephalometrics (Nemo Cepho, version 6.0, Spain). Pre-treatment and post-treatment readings of each patient were evaluated from the software and pre-treatment arch-to-treatment superimposition was also carried out.

3.2 Upper Incisor Inclination
Ut to SN plane angle: It is the inferior inside angle formed between the long axis of the upper incisor and Sella-nasion line. Ut to Palatal plane angle: It is the inferior inside angle formed by the intersection of the long axis of the lower incisor with the palatal plane. Ut to L1 (Angular): It is the angle formed by the intersection of the long axis of the lower incisor with the line joining the nasion to point A.

Ut to Mandibular plane angle: It is the angle formed by the intersection of the long axis of the lower incisor with the mandibular plane. It indicates the inclination of the lower incisors.

Ut to Occlusal plane angle: It is the inferior inside angle formed by the intersection of the long axis of the lower incisor with the occlusal plane. This angle is read as a positive or negative deviation from the right angle.

Ut to L1 (Angular): It is the angle formed by the intersection of the long axis of the lower incisor with the occlusal plane. The angle formed by the intersection of the line joining the nasion to point A and the occlusal plane is also considered to be the inclination of the lower incisors.

The P-value was significant when less than 0.05 (P < 0.05) and confidence interval of 95% was taken.

The following results were obtained after the statistical analysis.

### Discussion
Self-ligation appliances required very little intervention after the early concerns because of the apparent advantages which were claimed such as increased patient comfort, better oral hygiene, increased patient cooperation, less chair time, shorter treatment time, greater patient acceptance, expansion, and less dental extractions (10, 12, 13). Self-ligation appliances achieved significant amount of expansion with no apical root resorption and with increase in buccal bone thickness. Self-ligation appliances also offer precise control of tooth during transition, reduce overall anchorage demands, rapid alignment and more certain space closure.

Alleviating dental crowding without extractions requires an increase in arch perimeter or interproximal re-duction to attain good teeth alignment (14). In the absence of distalization, the changes in arch dimensions involve transverse expansion and increased proclination of teeth.

### References


