DENTAL TRIBUNE

The World's Dental Newspaper • Pakistan Edition

PUBLISHED IN PAKISTAN | www.dental-tribune.com.pk | NOVEMBER, 2015 - Issue No. 06 Vol.2

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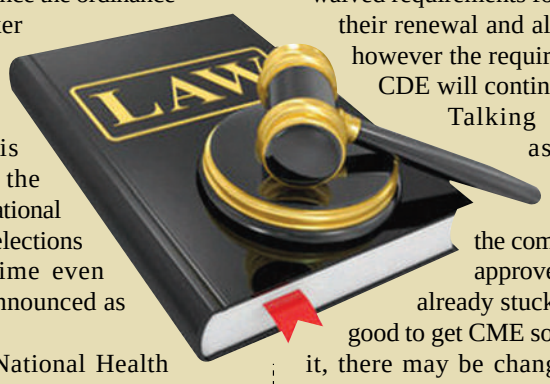
CME TO CONTINUE

PM&DC still in a fix, ordinance yet to pass

DT Pakistan Report

ISLAMABAD - The fate of Pakistan Medical and Dental Council (PMDC) still hangs in balance since the ordinance through which the caretaker set-up assumed charge is yet to be tabled in the assembly. According to reports the PMDC bill is expected to be tabled in the upcoming sessions of the National Assembly, and the council elections would also be held on time even though nothing has been announced as yet.



So far the Ministry of National Health Services (NHS) has failed to take measures to pass a presidential ordinance through parliament and PMDC council elections which are yet to be announced may also be announced immediately.

After a two-year tug of war between the PMDC and the ministry, President Mamnoon Hussain on August 28 promulgated the 'Pakistan Medical and Dental Council Amendment Ordinance 2015' after which the PMDC executive council was dissolved. A new management committee was constituted which also included retired Maj-Gen Azhar Kiyani, Prof Abid Farooqi and Prof Nadeem Rizvi. The committee was advised to hold the executive council elections within 120 days.

At present PMDC interim set-up is more inclined to carry the day to day affairs since they do not have the constitutional power to make any fundamental changes. They have waived requirements for the 1500 doctors awaiting their renewal and also for other till December, however the requirement of getting CME and CDE will continue to be there.

Talking to Dental News on the assurance of anonymity, PMDC official said that in order to provide relief to the community the waiver has been approved till December and for the already stuck up cases. He said that it is good to get CME so why would PM&DC scrap it, there may be changes to better facilitate the community, he added.

It is pertinent to mention that even after a month, no serious effort is made to get the ordinance passed from parliament and most importantly the PMDC council elections are not yet announced which has given rise to speculations that the ministry may fail to present the ordinance within the time limit of 120 days and so, it will fail to pass in the National Assembly.

It is a lengthy process for a bill to pass: staring with tabling in the National Assembly, followed by discussion in the standing committee and after getting approval from the NA, it would go to the Senate for approval.

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Dental community may be compromised in PM&DC Elections

DT Pakistan Report

ISLAMABAD - As per the Pakistan Medical & Dental Council (PMDC) advertisement published in daily press the other day with regards to the Notice of Election for Pakistan Medical and Dental Council, the Dental Community may not get representation since the elections to be held collectively of medical and dental professionals. According to the advert published there is only one seat from every province for Dental Practitioner, no separate Dental Seats for faculty position in public and private sector have been announced putting dental community at a clear disadvantage.

The advertisement clearly states that electoral called upon for the elections to be held and even highlights the terms, conditions and requirements for being the part of election. According to the Pakistan Medical and Dental council; only a registered medical/dental practitioner with a valid license will be allowed to vote and Medical/Dental practitioner may get their license/faculty

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AKUH to host PAO International Conference in November

DT Pakistan Report

KARACHI - The preparations for holding the 4th International Conference of Pakistan Association of Orthodontics are in the final stages. The conference is being held at the prestigious Aga Khan University Hospital under the able leadership of Dr Mubassir Fida from 20-22 November.

The conference will feature state-of-the-art lecturers and workshops from world renowned academicians from around the globe as well as from Pakistan. The conference has an extensive programme with pre and post conference workshops to equip the participants with the latest in dental innovation.

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Karachi to host 4th International PPA moot

DT Pakistan Report

KARACHI - The 4th International conference of Pakistan Prosthodontics Association will be held on 11th-12th December 2015 at Pearl Continental Hotel Karachi. The theme of the conference, "Think globally Act locally", aims to inculcate the theory of bringing novel ideas within the local perspective of a diverse population. The conference provides an opportunity to specialists as well as general dental practitioners to explore the challenges encountered in daily Prosthodontics practice. This conference will provide a platform to generate new and innovative ideas through presentations from renowned national and international speakers. It will also benefit the academicians by providing prospects of discussing collaborative research ideas and exchange of knowledge through informal engagements.

The scientific program is organized in a way that will make it beneficial for specialists and general dental practitioners. A free paper session for the aspiring trainees is also part of the conference to encourage their participation. An oral poster competition will be organized for

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IT SEEMS HOCUS-POCUS

Is online sale of medicine legal in Pakistan?

DT Pakistan Report

KARACHI - At a time when CNN has, of late, reported that 45 per cent fake medicines are being sold in Pakistan, the online marketing of medicine is another issue of mind-boggling complexity in the wake of lack of pharmaceutical laws and ethics in the country.

The website which claims to be number one marketplace for online shopping in Pakistan offers wide-ranging products such as medicines - herbal medicines, painkiller capsules, vitamin tablets, skin care, cosmetics, hair care products, optimum nutrition tablets/capsules - , besides other general items, including books, electronics, watches, mobile phones, computers, etc.

However, the claims pertaining to some energy and strength providing tablets are hilarious as about one particular tablet …, meant for women, the online seller says "it is a clinically proven herbal formula that supports normal female sexual desire and vitality. It is non-hormonal and safe, supporting women as they face the lower libido level often associated with ageing." The question here arises whether this claim could be proved either scientifically or medically.

A cursory look at the products being offered for sale in Pakistan through online marketing would show that most of the sex-related medicines, including capsules, sprays, gel, etc. are either Indian products or manufactured in some other foreign countries. But, since import of such medicines is banned in Pakistan, it gives one an impression as if these medicines are either imported illegally or smuggled into the country. And in support of this contention, one may quote the WHO's recent figures which inter alia says:

"The counterfeit market was worth $431 billion in 2012, with most originating from India and China." Moreover, it also lends credence to the claims of Young Pharmacists Association (YPA) that the import of medicines had increased from $468.32 million in 2014 to $519.597m in 2015 due to flawed policies of Drug Regulatory Authority of Pakistan (DRAP).

Of late, a representative of YPA, Ms Hinna Shaukat, told a news conference in Lahore that on the one hand, import of medicine had surged manifold while, on the other, the export of medicines from Pakistan had dwindled from $200m in 2014 to $167m in 2015 as the country's pharmacists were not allowed to establish small and medium pharmaceutical manufacturing units. Yet another disturbing aspect that came to light during a visit to a website by clicking on an electronic link or advertisement on another web page was that those selling such medicines online didn't mention that these drugs have some bad side effects although, according to doctors, even simple pain killers have their side effects as they usually get deposited in kidneys. When Medical News contacted Pakistan Medical Association's (PMA) secretary general Dr Mirza Ali Azhar to seek his views on the online marketing of medicine, he replied: "Now online marketing of medicine is being introduced globally which is very beneficial as long as it works under the pharmaceutical laws and ethics." He, however, cautioned that because of lack of pharmaceutical laws and ethics in Pakistan, it (online sale of medicine) may be more harmful and detrimental to public health and patients.

Regarding CNN's report that 45 per cent fake medicines are being sold in Pakistan, Dr Azhar said that the PMA had already taken notice of it and its concern over this situation had been widely published in the press. The CNN's story, it may be pointed out, also states that though most of the fake medicines made in Pakistan are sold to Pakistanis, some of the counterfeits end up being sold online to countries in Europe and the U.S. Meanwhile, concerned citizens ask whether DRAP has allowed online marketing of medicine in the country and, if so, what would be the criteria of judging genuineness of drugs being sold online.

On the other hand, the Young Pharmacists Association (YPA) and the Tib and Alternative Medicine Association (TAMA) assert that Pharmacy Council, which is supposed to govern pharmaceutical laws in the country, is on the verge of collapse due to serious flaws in the policies of federal government.

Representatives of YPA - Dr Mohammad Ahmed and Hinna Shaukat - and TAMA president Noor Mohammad Mahar, while addressing a press conference at Lahore Press Club said: "Our profession has suffered a major blow as the authorities in the PMDC have managed to accommodate an official from medical profession as president of Pharmacy Council despite knowing the position is designated for a pharmacist only and as such the appointment of a non-pharmacist on July 31 as the head of Pharmacy Council amounts to sheer violation of Section 4 of Pharmacy Act, 1967. They also claimed that the government had also appointed a former official of Drug Regulatory Authority of Pakistan (DRAP) as the Pharmacy Council's secretary.

Continued on page 10

PM&DC announces election schedule for council members

By Our Staff Reporter

ISLAMABAD- Pakistan Medical and Dental Council (PMDC) has announced the election schedule for members of its council.

Justice Tariq Pervez, chairperson of the election committee, while talking to the media said they were trying their best to hold fair and transparent elections, and had decided to hold the polls on December 5, 2015.

He said the last date of submission of nomination papers is November 3, and the last date of filing of objection and scrutiny of nomination papers will be 9th and 10th of November, respectively. Justice Pervez said filing of appeals would be done on November 11, and decision on appeals would be made on November 13. He said the deadline for withdrawal of candidature was November 16, and the final list would be published on the 17th.

Justice Pervez said only a registered medical/dental practitioner with a valid licence would be allowed to vote, and it was mandatory for all medical/dental practitioners to get their licence/faculty registration certificates renewed to qualify for nomination as candidate for the contestable seats.

He said over 39 polling stations based in hospitals all over the country have also been decided for the elections.

DENTAL TRIBUNE
The World's Dental Newspaper · Pakistan Edition

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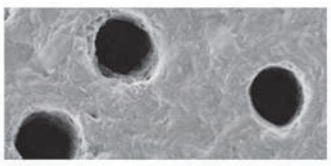

In Vitro SEM photograph of untreated dentin surface.

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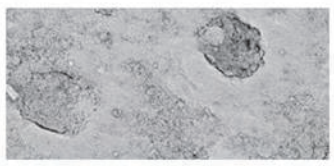

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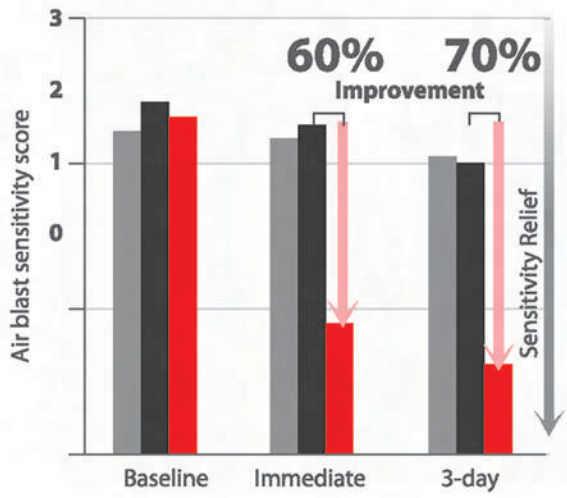

* For Instant relief, massage a small quantity directly on the sensitive tooth for one minute. For lasting relief, brush twice a day regularly.

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Scientific works cited:
1. Petrou I et al. J Clin Dent. 2009;20(Spec Iss):23-31.
2. Cummins D et al. J Clin Dent. 2009;20(Spec Iss):1-9.
3. Nathoo S et al. J Clin Dent. 2009;20(Spec Iss):123-130.

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Going (unintentionally) green: The unexpected bonus of switching to CAD/CAM and same-day dentistry

By Dr. Joel Strom, USA

With dentistry as innovative and dynamic as it is, the progress made and the exciting new trends that result are often judged in terms of the technological or financial: We can update our equipment to have a purely digital office, or we can adopt new practices and offer new procedures to our patients that bring in extra revenue.

While these accomplishments are certainly laudable, it is time for dentistry to measure its progress by different standards, ones that affect the profession and the world as a whole. In short, we can examine how our practices and procedures influence the environment and what dentistry as a profession can do to ensure this influence remains positive.

Fortunately, dental professionals no longer have to choose between advances in technology and what is considered "eco-friendly." In fact, practice owners can assure themselves of the best of both worlds by adopting digital technology, such as in-office CAD/CAM systems such as the Planmeca Planscan System (E4D Technologies). While the practical and financial benefits of CAD/CAM technology are well established, the environmental benefits — though discussed less often and perhaps not as well understood — abound.

CAD/CAM: Why dive into digital?

Though not ubiquitous, digital technologies, particularly in-office CAD/CAM systems, are making their presence known. Dental professionals who integrate these advanced technologies can offer same-day dentistry to their patients; that is, they condense the restorative process of multiple appointments over several weeks down to one appointment lasting a few short hours. Clinicians can digitally scan the patient's teeth and design the restoration(s) right then and there. Once approved, the restoration(s) can be milled and seated immediately. Essentially, in-office CAD/CAM systems are revolutionizing how restorative dentistry is practiced.

This CAD/CAM revolution provides almost innumerable benefits to patients. Multiple appointments for one restoration become nonexistent, so patients no longer need to make multiple trips to the dental office. Digital scans eliminate the need for messy, uncomfortable impressions that make patients gag and are prone to errors. Temporary restorations are no longer necessary, removing that extra step from the restorative process and ensuring that patients are not at risk for increased sensitivity or leakage while wearing sometimes uncomfortable provisionals for weeks. Finally, definitive restorations are fabricated and placed within hours of scanning and can be adjusted immediately, so patients no longer have to wait for that perfect laboratory restoration.

Switching to digital systems is beneficial not only to clinicians and patients but to the environment as well

Clinicians, too, reap several benefits. Digital scans equal easier "impressions" that enable accurate reproductions of patients' dentition. Restorations can be designed in the office without communication or transfer to a dental laboratory, eliminating back-and-forth exchanges that cause delays or less than optimal results. In fact, restorations can now be fabricated with more patient input, since intuitive CAD software enables dentists to easily design restorations on-screen while remaining chairside, providing patients with that "wow" factor as they see what digital technology is allowing dentists to do. Once designed, the restorations can be immediately milled in the office and tried in the patient's mouth, so a perfect fit and high-quality esthetics are affirmed at the same appointment.

Digital practice equal green practices

Since CAD/CAM technology was first introduced decades ago, early adopters and technology enthusiasts have encouraged integration of these systems for various practical and financial reasons. Though generally a substantial initial investment, practices that upgrade to digital technology find that streamlined procedures and happier patients lead to a significant return on investment.

But switching to a CAD/CAM system provides an unanticipated bonus, one with a far broader impact. Using an in-office CAD/CAM system is one of the most environmentally conscious upgrades a practice can make, offering both concrete and intangible benefits for dental practices, their patients and the greater community.

CAD/CAM systems add to a practice's green image with the many small changes they allow the office to implement. For example, now that impressions are taken with a digital scanner (Planscan), traditional impressions — and all their associated materials, such as disposable impression trays, impression material and the water with which it is mixed — are no longer necessary. Clinicians who thought they were only saving money (and storage space) can rest easy at night knowing they're no longer contributing to the throwaway, disposable culture in many health-care offices.

Additionally, because digital impressions can be viewed instantly with software that allows users to see potential errors, any mistakes are quickly averted with a second digital scan that requires no extra materials or waste. It is not uncommon for dentists to take a second traditional impression because of errors caused by saliva or air pockets in the impression material or to have a backup on hand in case there are problems down the road. Over time, material waste created using traditional impression methods adds up. Using digital technology not only streamlines the process but ensures that materials, time and money aren't wasted.

Moreover, because traditional impressions aren't needed with a digital workflow, equipment previously used to perform these procedures, such as a mixing gun for impression material, are also no longer necessary. While clinicians may think they are only saving themselves hassle or time by purchasing an easier-to-use piece of equipment, they're also saving energy — literally. With digital technology, impression-taking instruments no longer need to be run through a wash cycle and sterilized. This saves time, energy and water.

While it seems like saving resources, particularly water, isn't possible in dental practices, small steps such as these really add up. The Eco-Dentistry Association (EDA) (www.ecodentistry.org) estimates that dental practices use 360 gallons of water per day. This totals 57,000 gallons of water per year, per practice. In the United States alone, dental practice water usage totals approximately 9 billion gallons of water per year. This does not even include dental laboratories, which must use substantial amounts of water when mixing and pouring models in stone and cleaning their equipment.

In addition to the above in-office water issues, along with laboratories and their respective procedures that will always require water, these staggering statistics spell out the clear need for water conservation whenever possible, and in-office CAD/CAM supports this effort.

Greener materials: Using all ceramics instead of amalgam

Amalgam restorations had been the standard of care in restorative dentistry for decades. With material science advancements, however, there are new contenders for that title. In particular, the use of all-ceramic materials has significantly increased in recent years, and when coupled with in-office CAD/CAM systems, their advantages are economical and ecological, in addition to esthetic, biocompatible and functional.

The majority of the materials for same day CAD/CAM dental procedures are generally composite or all-ceramic blocks, so there is no metal involved. These metal-free restorations can often be used without reservation for various indications, including single-unit restorations, inlays and onlays.[1] While the benefits of these materials have been expounded upon (e.g., esthetics, ease of use, wear, optical properties.), they provide tangible environmental benefits as well.

For example, the longevity of all-ceramic restorations such as in-office CAD/CAM designed inlays is well documented.[2] In addition to a highly esthetic restoration, patients receive restorations that will last for many years, without the concerns associated with amalgam, such as cracks, failures or potential mercury toxicity. This potentially saves patients and clinicians time, money and wasted resources that would be spent traveling to and from the dental practice, taking more impressions and fabricating new restorations.

Perhaps of greater consequence is removing toxic metal from this equation. All-ceramic and metal-free restorations mean that dental practices no longer have to worry about amalgam disposal and its accompanying mercury toxicity.

The Environmental Protection Agency (EPA) estimates that nearly 50 percent of all mercury entering local wastewater treatment facilities originates in dental offices.

Using CAD/CAM compatible materials such as all-ceramics lessens or eliminates the contribution of your dental office to environmental mercury. It also means that dental practices needn't worry about using an amalgam separator.

Currently, the American Dental Association (ADA) does not have national regulations in place for amalgam separators, so many dental practices and laboratories aren't compelled to use them. Although designing and milling all-ceramic materials still requires energy and results in some waste materials, can they really compare with the toxic byproducts of metal-based restorations?

Crunching the numbers: CAD/CAM math

In-office CAD/CAM systems provide more than just a clear conscience about saving the environment. There are real, tangible benefits and savings that can easily be estimated to demonstrate the immense value of this digital technology.

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Digital implantology— Predictable aesthetics and functional results

By Dr Jesper Hatt, Denmark


Fig-1a

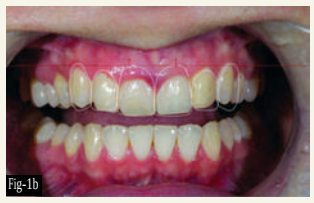
Fig-1b


Fig-1c

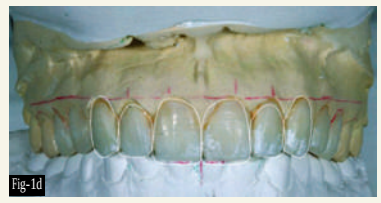
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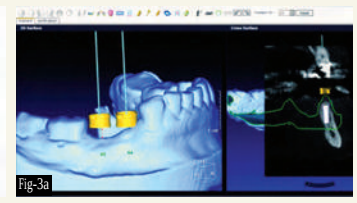
Fig-2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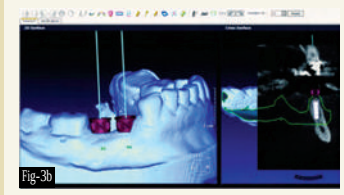
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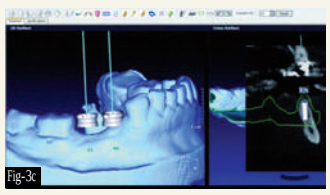
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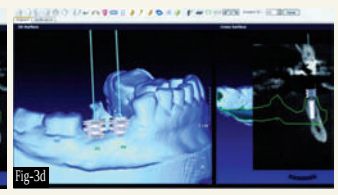
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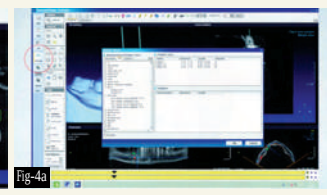
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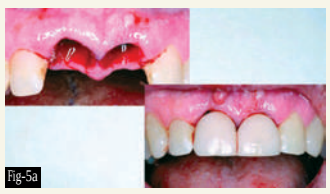
Fig-4b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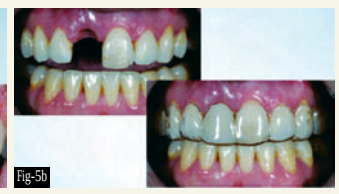


Fig-5b

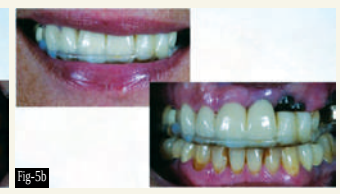


Fig-5b

Today we are standing on the verge of a digital revolution in dentistry. The digitalisation will offer a new infrastructure in the treatment of our patients.

This article will focus on the digital treatment planning that is possible in an ordinary general dental practice today. There will be some remarks about the needed hard- and software in order to get an over view of the possibilities and pitfalls before acquisition. We will look at the possibilities with tooth-borne surgical guides, since the topic regarding treatment of edentulous patients with surgical guides has been covered extensively in the past.

Before treating any patient, we need a treatment plan. In a simple composite case, a plan in the mind of the dentist might be enough. But when we move to more complex cases, the need for a thorough blueprint becomes essential. The following sequence is based on the assumption that the patient has healthy joints, relaxed muscles with a balanced occlusion in centric relation (CR). If this is not the case we recommend you take care of these issues before any final prosthetic treatment.

In order to achieve the most predictable treatment outcome, we recommend the following protocol, which can be used with and without implants.

1. Photos – extraoral and intraoral. DSD (Digital Smile Design)
2. Video (optional for emotional patient communication)
3. Models (digital or stone)
4. Facebow registration
5. CR bite registration
6. Protrusive bite registration or a digital movement analysis
7. Cone beam scan in implant cases
8. Wax-up.

It is most important to get the patient expectations in alignment with the dentist before starting detailed treatment planning. We need to know what the patient wants in order to deliver it to the patient. To be able to communicate effectively with the patient, we need to know ourselves and we need to know our clinical abilities and limitations before applying our work. In my opinion, the patient experience is essential in case presentation.

Clinical photos both extraorally and intraorally are the first step in the treatment planning process. We recommend that you start with the protocol from AACD (American Academy of Cosmetic Dentistry) or DSD (Digital Smile Design by Christian Coachman). These are well documented protocols and contain all the basic photos needed.

The photos will be used following the DSD protocol to visualise the end result to the patient and in communications with specialists and the dental lab (if needed). The DSD protocol enables a multidisciplinary treatment planning process without seeing the patient in the practice. Every step is done through a free cloud-based service. It is inexpensive, flexible and easy to do.

The data from the DSD is transferred to a model of the patient (Figs. 1a–d). This can be done on a stone model or a digital model. With the models aligned, it is possible to make an additive wax-up with the exact proportions of the DSD. With a stone model, we make a silicone stent that is carefully trimmed. We fill it with a bis-acrylic material and position it in the mouth of the patient. With a digital wax-up we need to make a composite shell that is either milled or printed on a 3-D printer. The shell can be glued into position with bis-acrylics or flowable composite.

With the try-in smile we take a series of photos. The photos will be used to verify with the patient that we are on the right track. If needed, the try-in smile can be adjusted until the wanted result is achieved. If we make any corrections, a new impression is taken for our final treatment plan.

Once the patient has accepted the treatment plan, we proceed with a functional wax-up. The functional wax-up will guide the treatment of the patient. It will enable us to visualise the final restorations. At this point we can decide exactly what will be: the ideal implant position; the ideal abutment; the ideal restorative material; the ideal shape of the restoration; the need for grafting (hard and soft tissue).

The easiest way to achieve the most precise functional setup is by using the Arcus Digma (KaVo; Fig. 2). It is the only system that enables you to make a very detailed motion analysis (10 microns) that replicates the jaw movements exactly by utilising computer technology.

Arcus digma has a bite-fork that makes it easy to position the upper jaw in the articulator. A fully adjustable articulator or a digital articulator is preferred. It is critical to get a perfect bite registration in CR. The functional wax-up can be generated semi-automatically in the CAD/CAM software by using the data gathered from the models and functional movements. Alternatively, we do it the old fashioned way by adding wax to the stone model. (Note that the precision of the wax-up will reflect the care taken to acquire the diagnostic information.)

With the wax-up approved by the dentist, the placement of the implant can be performed in the cone beam imaging software. We use the OnDemand software by Cybermed Inc. The software has a fair price. It can handle all DICOM based cone beam images. The In2Guide plugin (in OnDemand) enables you to do the implant planning with whatever guide system you prefer (i.e. Straumann, Nobel Biocare, Zimmer, etc.). Usually we use the universal drill kit developed for the In2Guide system. It gives the user the ability to place any implant on the marked with this single drill kit. The only brand specific tools needed is the implant driver and a prosthetic kit. Another advantage of the In2Guide software is that you don't have to segment the cone beam image or export it into third party software. The planning is done in the same software as where you do your diagnosis. In my opinion, this makes it easier to implement in the practice.

One note about guide sleeves. The In2Guide software enables you to choose whatever guide sleeves you want to use. There is a huge difference between the distance from the coronal implant surface and the guide sleeve among the different guide systems (Figs. 3a-d). Care should be taken not to place the guide sleeves in contact with any hard or soft tissue. It is a great feature to be able to choose the system that fits your preferences.

In order to make a tooth-retained guide, we make a cone beam image of the patient. (Note the required size of the field of view [FOV]. You need enough teeth and bone to make a guide.) A model of the soft tissue and high precision surface of the teeth is merged with the cone beam image in order to make a good fitting surgical guide. The model can be scanned by a labscanner or by the cone beam scanner. An option to make an intraoral scan is available, but currently only for treatment planning.

The intraoral model will be displayed as a green outline in the In2Guide software (Figs. 4a & b). Since we know the ideal distance from a bone level implant to the surface of the soft tissue is 3mm, we place the chosen implant type (from the In2Guide library with almost all commercially available implants) and plan the positioning in the third dimension. Now we are able to measure the distance from the implant to the surface of the soft tissue. Hereby we can achieve an ideal emergence profile. We can measure the distance from the implant to the top of the guide sleeve to verify correct depth of the implant during surgery.

At the same time, we get to know if there is sufficient bone support for the implant or if we have to graft. The ability to plan any grafting procedure in advance of the operation gives a better predictability, patient compliance and effective scheduling of the surgery.

Looking at the intraoral photos and

the planned 3-D implant position we make the decision to do open or closed surgery. If possible we will do a tissue punch because it is faster and less traumatic to the tissue and the patient. Our patients love the flapless insertion of implants. There is virtually no post operative bleeding, swelling, sutures or pain compared to raising a flap. I admit that we often have to do some type of grafting but when I am able to do a flapless procedure, I will do it. (It is a fast procedure and a great internal marketing opportunity.)

At this point we make a decision whether we want a customised Atlantis titanium abutment, a customized titanium/zirconia abutment or a screw-retained crown. We always use customised abutments for cemented solutions to make sure the risk of cement residuals is minimal. The customised abutments are designed with a preparation margin of 0.5mm, subgingivally facially and aproximally. On the oral surface, the margin is placed 1mm above the gingiva. This is impossible with stock abutments. Implant Direct has some implants that are delivered with a stock abutment. This abutment can be modified and scanned with an intraoral scanner and with CAD/CAM technology we can mill a customised zirconia abutment part that will be glued to the stock abutment. The gingiva will establish a strong hemidesmosome attachment to the zirconia and thereby create a better seal to the surrounding environment. Furthermore, it will allow us to produce every prosthetic part inhouse and save time.

Screw-retained crowns are primarily used in the posterior and only in selected cases when we think we need easy retrievability. I admit there are many different philosophies about this subject. And I admit it is harder to remove excess cement in the posterior.

We use a semi-permanent composite cement or tempbond to cement all our restorations. We want all restorations to be retrievable in case of future complications.

At this point we know how the final result will look like?the abutment design and the position of the implant. We know whether or not we need grafting and if it is going to be an open or closed procedure. We know the exact type and size of implant and what surgical kit we will be using. Now we just have to order the surgical guide. In our practice we let In2Guide design and produce our guides, since it is a laboratory at KaVo that does all the work under strict quality control. We are confident in the precision and quality of the product. It takes about 7–10 days from placing the order online until we receive the guide. We do not charge our patients extra for the surgical guides since the time we save during surgery more than covers the costs of the guide. And after the placement of the implant we always have an ideal position of the implant in regards to the final prosthetic outcome. Placing a crown in harmony with the functional occlusion has improved the aesthetic results and reduced our prosthetic failure rate, including the amount of periimplantitis. It is my belief that a lot of so-called periimplantitis we see today is related to occlusal problems rather than biofilm. But that is a totally different issue.

Before doing any surgery, we need to think about a provisional restoration. The function of the provisional is primarily to prevent tooth migrations and to shape the soft tissue. This can be a fixed or a removable solution; direct or indirect. Among the removable solutions, we have the partial denture, the Essix retainer, bite splints with teeth mounted as provisionals, etc. (Figs. 5a-c). Among the fixed solutions there is the Maryland bridge and the immediate loaded implant crown. The immediate crown is usually made directly but can be made in advance utilizing the In2Guide software and the CAD/CAM team at KaVo. It requires a scanned model of the opposing arch and a bite registration (the two models held together). Once again we can use a lab-scanner or the cone beam scanner to acquire these data. This way we receive a surgical guide and a screw-retained provisional implant crown to be placed immediately after surgery. It is tricky but doable and removes the problem with bis-acrylics in the wound.

The whole treatment planning protocol can seem a little overwhelming. But in reality it is fast and saves a lot of chair time. The implant planning in In2Guide for a single implant takes approximately five minutes once you get accustomed to the software.

In our practice, we have been working with surgical guides since 2010. They were introduced because we saw too many implants placed in a less than ideal prosthetic position. It was a problem faced with more than six different experienced surgeons. There seemed to be a paradigm among a lot of surgeons saying 'We place the implants where the bone is'. In such cases, we do not want to do the final prosthetic work because it will always be a compromise.

Every step in implant surgery has to be planned and executed exquisitely with the final prosthetic solution in mind. It is the only way to a predictable and good result for the patient.

Isn't that what it is all about?

Editorial note: This article was published in cone beam – international magazine of cone beam dentistry No. 03/2015.

Where periodontology has advanced

By Prof. Mark Bartold, Australia

This afternoon, Prof. Mark Barthold from the University of Adelaide in Australia will be presenting a paper on periodontal medicine as part of the Asia Pacific session at EuroPerio8 in London. In this editorial, written exclusively for Dental Tribune Online, he discusses some of the myriad major advances in periodontology in recent times.

Over the past 20 years, there have been some exceptional advances made in periodontology. Many of these have led to changes in our thinking and our approach to periodontal therapy. In 1999, the American Academy of Periodontology devised a new classification system for periodontal diseases. From this, some 50 different types of periodontal conditions were identified that were considered worthy of individual classification. Clearly, this was an unwieldy system and in reality it was distilled down to three main types of plaque-associated periodontal diseases: gingivitis, chronic periodontitis and aggressive periodontitis.

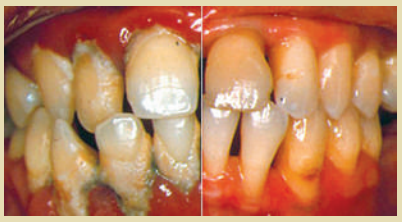
While the appropriateness of the terms "chronic" and aggressive" has been debated, they have served as a framework for both clinicians and researchers to define specific types of periodontitis with identifiable clinical parameters. They have also provided a framework for understanding management protocols and outcomes. Nonetheless, over time, it has become evident that such a classification system (chronic and aggressive) may be too simplistic because of the heterogeneity of periodontal diseases. Therefore, it may be timely to revisit such a classification system and determine whether current understanding of the epidemiology and pathology of these diseases can be used to better define them.

However, it is worth noting that in the past 25 years there have been at least ten different classification systems proposed, none of which have been fully adopted. Clearly, there remain a number of important challenges in this field. Since chronic and aggressive periodontitis are heterogeneous groups of diseases, for example, there will be unique subcategories based on their multifactorial nature on the basis of microbial, host response and environmental components. At present, apart from a plaque-associated designation, the current American Academy of Periodontology classification is not based on cause-related criteria.

Recognition that bacteria are necessary, but not sufficient for periodontitis to develop

During the 1990s, a very important conceptual advance occurred in our understanding of dental plaque and its interaction within the subgingival environment. The recognition that subgingival plaque existed as a biofilm with its own micro-regulatory and communicative properties changed our thinking of how the subgingival microbiota interacted not only with itself, but also with the host. Notwithstanding this, research through the 1990s and 2000s began to question the role of the biofilm and its component bacterial consortia in the overall process of the development of periodontitis. While it was very clear that periodontitis cannot, and will not, develop in the absence of bacteria, it was becoming increasingly obvious that clinically there were some patients who, despite the presence of considerable plaque deposits, did not develop periodontitis. Conversely, it was also evident that there were individuals who had very minor visible deposits of plaque yet developed very advanced and destructive periodontitis.

These observations led to a major paradigm shift in periodontology, in which it was agreed that, although plaque was necessary for periodontitis to develop, it was not sufficient for it to develop. Indeed, it became evident that, in addition to dental plaque, environmental and host response factors were critical for the clinical manifestation of periodontitis. With this, came a new, more informed management process for our patients that dictated that, in addition to management of oral hygiene, patients must be assessed for other factors that



would lead to the development of periodontitis and these must be controlled in order for treatments to be successful. Indeed, it is now recognised that dental plaque (and its constitutive elements) accounts for only 20% of the risk of developing periodontitis and thus the other 80% of modifying and predisposing factors must be taken into account when diagnosing and treating periodontal diseases.

Development of the subdiscipline of periodontal medicine

The term "periodontal medicine" was first proposed by Offenbacher in 1997 as "A broad term that defines a rapidly emerging branch of periodontology focusing on new data establishing a strong relationship between periodontal health or disease and systemic health or disease". It arose with the emerging evidence suggesting that a number of systemic conditions and periodontal diseases were interrelated. By 2000, the evidence that oral health and systemic health should not be separated had become very compelling. Indeed, the relevance of oral health to overall

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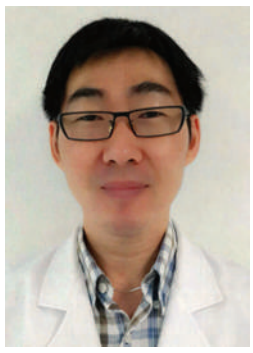

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