An interview with Dr Michael Dieter, Ivoclar Vivadent, Liechtenstein

To be held for the first time in South-East Asia, the seventh CAD/CAM & Computerized Dentistry International Conference in Singapore in October will offer a detailed overview of the latest CAD/CAM technologies that are aimed at helping dentists achieve aesthetic and long-lasting all-ceramic restorations chairside. During a presentation in Cape Town, South Africa, Dental Tribune Asia Pacific had the opportunity to speak with Ivoclar Vivadent's Dr Michael Dieter, head of the International Center for Dental Education, who will be hosting the lecture theatre together with Jörg Vogt, international CEREC trainer for Sirona.

Dental Tribune Asia Pacific: Dr Dieter, your joint presentation with Mr Vogt in Singapore will be held in form of a lecture theatre. What is behind this concept?

Dr Michael Dieter: Jörg Vogt and I developed this concept two years ago. When the organiser's managing director, Dr Dobrina Mollova, saw our performance at the sixth CAD/CAM & Computerized Dentistry International Conference in Dubai last year, she named it a "lecture theatre" because of its truly interactive nature. Jörg and I present in continuous dialogue with each other, which makes the lecture more interesting, not only for the audience but also for us.

Additionally, case demonstrations with the CEREC AC will be performed live on stage.

Primarily, our lecture is aimed at dentists who are interested in minimally invasive aesthetic treatment solutions who simply want to get into dental CAD/CAM technology. Our goal is to provide a guideline clinical treatment sequence for predictable treatment using chairside CAD/CAM technology. However, the lecture is also suitable for any dentist who is interested in all-ceramics as a modern restorative treatment option.

From my experience, I can say that many dentists still have little knowledge of what all-ceramic material they are supposed to use for various clinical situations. With our lecture theatre, we aim to demonstrate the main differences in terms of aesthetics, particularly for use in the anterior dentition, and the physical properties or strength of the various all-ceramic systems.

What do you think is the reason for this lack of knowledge?

The main indications are inlays, onlays, partial crowns, bridges and veneers. In addition, up to four-unit posterior bridges are now possible, either as a temporary solution with polymer blocks (e.g. Telio CAD, Ivoclar Vivadent) or as a permanent restoration with a high-strength zirconium dioxide/lithium disilicate material (e.g. IPS e.max CAD-on, Ivoclar Vivadent).

What are the aesthetic limitations of chairside CAD/CAM?

Generally, posterior restorations like inlays, onlays and crowns can be realised with good aesthetic results. With anterior restorations like crowns and veneers, the aesthetic outcome largely depends on the adjacent teeth that we have to match intra-orally. Highly aesthetic colour gradients for CEREC restorations can be achieved with polychromatic blocks (e.g. IPS Empress CAD Multi, Ivoclar Vivadent) or by shading and staining monochromatic lithium disilicate (e.g. IPS e.max CAD, Ivoclar Vivadent).

"...cementation is a very important factor and still underestimated by many dentists."

What are the critical factors for achieving successful long-term clinical outcomes?

In addition to the factors described above, cementation, particularly for glass-based ceramic restorations, is a critical step of paramount importance for long-term clinical success.

What is the main aesthetic test for a final restoration? What are the aesthetic limitations of chairside CAD/CAM?

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The main indication is for anterior restorations. The correct tooth preparation technique remains a challenge for many dentists because all-ceramics require an entirely different preparation design compared with the commonly used metal alloys or metal ceramics. If mistakes are made at the beginning, fracture of the restoration becomes much more likely. Therefore, preparation techniques for all-ceramics with regard to CAD/CAM application will be in focus as well.

What impact has CAD/CAM technology had on the usage of aesthetic restorations in the dental practice?

With CEREC/CAD/CAM technology has been available for chairside application for more than 27 years, this is a well-documented procedure with long-term clinical success. Today, there are 54,000 CEREC units in use, which demonstrates impressively that this technology is still driving aesthetic dentistry in the clinical practice.

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