

Lifestyle

TEA :

Nurturing oral health and
enhancing overall wellness



Application of artificial intelligence
for the immediate transition of
a failing tooth in the esthetic area
[Smilecloud, Straumann® BLX]

“

IMPLANTS
& IMMEDIACY:
AN OLD DISCUSSION,
A NEW CONCEPT!

**Peri-implantitis treatment with
GalvoSurge® in the esthetic zone:**

One approach for biofilm removal in two patients

CLINIC
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TAKE A BREAK SIT BACK Relax



What Is **DENTAL DIARIES?**

Practicing dentistry at the highest standards today is a challenge. As dentists we have to stay on top of a rapidly changing science, decide among growing technological innovations and new products and serve patients with ever changing needs and expectations. All these, while striving to maintain work-life balance in difficult times for all can be tough and it is no surprise that dentistry is among the most stressful professions.



At the Dental Diaries, we aspire to support dentists of Hong Kong and Macau on every step. Every quarter, our editorial team will gather the most up-to-date news in the dental field, short scientific articles and case studies, together with lifestyle information, suggestions and ideas to balance a busy working life with some fulfilling personal time. We also want to foster a network, by sharing messages, news and classified ads for the local dental community.

We hope that every time you receive the latest Dental Diaries, you will not only gain professional knowledge, but it would also make your break a little bit more relaxing!

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DENTAL COMMUNITY BOARD



In 2023, CDE organized more than 80 events and courses, with over 1,000 participants from all over the world. These courses encompassed a wide range of topics, including hands-on training and lectures, providing a diverse learning experience. Study clubs and seminars were conducted in the **lecture room**, hands-on workshops in the **sim lab**, and professional live surgery demonstrations were hosted in the **surgery room**. Additionally, a vibrant **bar area** was set up to facilitate networking among participants, further enhancing the overall learning experience. During these sessions, there was ample opportunity for interaction between the speakers and participants. Learning and sharing experiences in a comfortable and spacious environment, each event was a gratifying opportunity to expand professional networks.

Looking ahead, CDE is excited to continue serving in 2024. The team is dedicated to curating an even more impressive lineup of events and courses, ensuring that the time at CDE remains invaluable. Whether seeking to enhance skills, expand knowledge, or establish meaningful connections within the dental community, CDE is here to support. Feel free to reach out to the team, always ready to assist with any inquiries or requests.



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Lecture

Hands-On

Guided Immediacy: Master The New Norm In Implant Dentistry

SPEAKER
 Dr. Nikos Mattheos
DDs, Odont, Dr.

Dr. Fung Kok Chu, Tommy

BDS (HK), MDS (ImplantDent) (HK), MGD (CDSHK), MRACDS (GDP)


TYPE	DATE & TIME	FEE	LEARN MORE
Lecture	20 th April 2024 09:00 A.M. – 05:00 P.M.	7,500 HKD	
Lecture + Hands-On		8,800 HKD	

VENUE

Centre of Dental Education, 17/F, CEO Tower, 77 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong

Lecture

Live Streaming Surgery

Can We Cure Peri-implantitis? An Electrolytic Approach for Cleaning Infected Implant Surfaces.

SPEAKER
 Dr. Markus Schlee
PD Dr.
**DATE & TIME**
 26th Apr 2024 | 5:45 P.M. - 10:00 P.M.
FEE

200 HKD (Registration fee will be refunded upon your attendance)

VENUE

The Prince Philip Dental Hospital



LEARN MORE

Lecture

Live Surgery

Hands-On

Implants in the Aesthetic Zone – Lecture and Live Surgery!

SPEAKER
 Dr. Nikos Mattheos
DDS, MASc (Perio), PhD


TYPE	DATE & TIME	FEE	LEARN MORE
Lecture + Live Surgery + Hands-On	7 th - 8 th May 2024 09:00 A.M. – 05:00 P.M.	15,000 HKD (Early Bird of 12,500 HKD before 1 st June)	
Lecture + Live Surgery		12,500 HKD (Early Bird of 11,000 HKD before 1 st June)	
Lecture + Live Surgery (Student)		6,000 HKD	

VENUE

Centre of Dental Education, 17/F, CEO Tower, 77 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong

Oversea Program

ITI WORLD SYMPOSIUM SINGAPORE

Every patient has a story: Evidence meets patient perspectives to guide clinical care

SPEAKER



Daniel Buser
ITI Honorary Fellow
Switzerland



Stephen T Chen
ITI Fellow
Australia



France Lambert
ITI Fellow
Belgium



Giovanni Zucchelli
ITI Fellow
Italy



James Chow
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Jeanette Chua
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Tara Aghaloo
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Edmond Bedrossian
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United States



Niklaus Lang
ITI Honorary Fellow
Switzerland



Hom-Lay Wang
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United States



Jochen Tunkel
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DATE

9th - 11th May 2024

VENUE

Singapore Expo



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Oversea Program



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SPEAKER



Dr. Alex Fibishenko



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Dr. Dan Holtzclaw



Dr. Nail Sinada



Dr. Panos Papaspyridakos



Dr. Rick Kline



Dr. Leon Pariente



Dr. Karim Dada



Dr. Sepehr Zarrine



Dr. James Chow



Dr. Michael Golpa



Dr. Jeanette Chua



Dr. Waldemar Polido

DATE

14th - 16th May 2024

VENUE

MyKonos, Greece



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Straumann Workshop At ITI World Symposium 2024 Singapore Expo



Dr. Sepehr Zarrine



Dr. Carlos Aparicio



Dr. Ophir Fromovich



Dr. Gabor Tepper



Dr. Florin Cofar



Dr. Algirdas Puisys

Dr. Eirik Aasland
Salvesen

Dr. Stephen Chen



Dr. Kay Vietor

Dr. Maja
Chmielewska

Dr. Sonia Leziy



Dr. Stefan Röhling

Dr. Panos
Papaspyridakos

Predictability in Advanced Edentulous Rehabilitation

SPEAKER Dr. Sepehr Zarrine | Dr. Carlos Aparicio

DATE 9th May 2024 | Sect.1: 10:45 A.M. - 12:45 P.M. | Sect.2: 16:15 P.M. - 17:45 P.M.



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Clinical Confidence in Immediate Implant Placement

SPEAKER Dr. Ophir Fromovich | Dr. Gabor Tepper

DATE 10th May 2024 | 08:15 A.M. - 09:45 A.M.



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Communicate Esthetics & Inspire Patients' Yes

SPEAKER Dr. Florin Cofar

DATE 10th May 2024 | 11:00 A.M. - 12:30 P.M.



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Confidence in all Indications

SPEAKER Dr. Algirdas Puisys | Dr. Eirik Aasland Salvesen

DATE 10th May 2024 | 14:15 P.M. - 15:45 P.M.



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Next Generation Versatility & Simplicity

SPEAKER Dr. Stephen Chen

DATE 10th May 2024 | 17:00 P.M. - 18:30 P.M.



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Dynamic Guided Solution in Practice

SPEAKER Dr. Kay Vietor | Dr. Maja Chmielewska

DATE 11th May 2024 | 08:15 A.M. - 09:45 A.M.



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In Control of the Biofilm – The Key to Implant Health

SPEAKER Dr. Sonia Leziy | Dr. Stefan Röhling

DATE 11th May 2024 | 11:00 A.M. - 12:30 P.M.



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Simplify Edentulous Rehabilitation with Digital Workflows

SPEAKER Dr. Panos Papaspyridakos

DATE 11th May 2024 | 15:30 P.M. - 17:00 P.M.



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Length of Warranty	3 months	6 months	6 months
Working Days	4 days	Express: 24hrs / 72hrs Normal: 4 days	4 days
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IMPLANTS AND IMMEDIACY

An Old Discussion, A New Concept!



Prof. Nikos Mattheos
DDS, MASC, PhD



Dr. James Chow
BDS, MDS, OMFS Specialist,
FRCDS(Eng), FRCDS(Can)

Implants placed in fresh extraction sockets were first documented more than 25 years ago, so one might wonder why “immediacy” took so long time to mature into the mainstream implantology. The progress of a scientific protocol however, is rarely a straight line to implementation. Perceived breakthroughs are often followed by backlash and enthusiasm can be at times interchangeable with periods of caution. In the end, technology is also a major catalyst to help a vision make it safe to the mainstream practice.

In these two articles we review the major developments from the first “immediate” implants into the current modern concept of “immediacy” and we discuss the important benchmarks, as well as how and why modern “immediacy” is a workflow which extends well before and after the extraction socket placement.

An old innovation

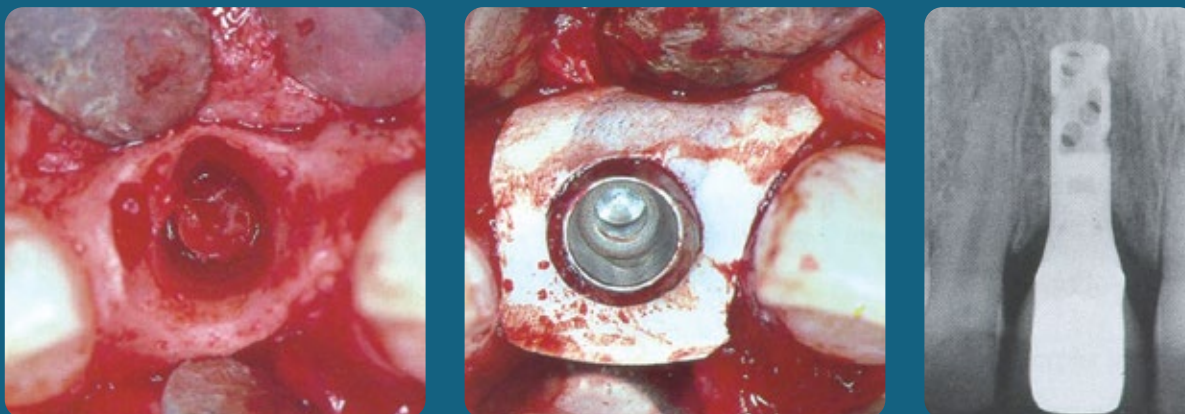
If you think that immediate implants are a cool new development, better think twice: it was a hot research topic already in the 90's and scarily enough, this is already 30 years ago..!

Back in 1996, NP Lang the founding editor of Clin Oral Imp Res after an exhaustively detailed study was concluding that “immediate implants are feasible treatment modality with high predictability”, while also documenting less bleeding on probing around immediate than conventionally placed implants. Back then he was placing the “ITI implants” in fresh extraction sockets with or without guided bone regeneration and transmucosal healing. Well ahead of its time you might think. Interestingly, by the time I joined his department in 2005 he was rather critical of immediate implants, and so most of our Hong Kong colleagues and students would also remember him. To think of what could have possibly happened, let's get back to 1996 and follow the steps of an exciting journey.

Although publications about immediate implants were appearing all through the 90's, long term evaluations start to show towards the end of the decade. In 1997, Arad-Schwarz and Chausu published 4-7 years follow up of 95 immediate implants placed with submerged healing and showed a very good survival rate of 94.7 %. Just a year later, in 1998 the same authors growing obviously encouraged by the documented success, they take the method one step further and publish 9 cases where the implants were placed flapless in the extraction sockets, augmented with autogenous chips and left to heal transmucosally with only some retaining sutures. And guess what, it all worked well.

By the time I start my own journey in Implant Dentistry around the turn of the millennium, the euphoria on immediates continues and Brånemark publishes his first “guided surgery” system in the inaugural issue of Clin Implant Dent and Rel Research. His system is called “Brånemark Novum” and I think it is the predecessor of all static computer assisted implant surgery we use today. Thanks to a prefabricated surgical guide and drill sleeves, implants are placed in position for immediate loading in the mandible. Thus, another immediacy other than the fresh extraction socket is widely introduced: the immediate loading. Two volumes later in the same journal in 2001 our own Dr. James Chow published some exciting results on immediately placed anterior implants restored with immediate provisional crowns. In a 15 month report on 24 implants, survival was 100%, bone loss minimal and aesthetic results high. Does all this sound familiar? Maybe a little feeling of back to the future? The fact is that immediacy was really hot research topic around the turn of the millenia, including some leading ITI researchers. But then how come it took another 24 years before ITI finally reached a favourable consensus on immediate with immediate provisionals in the aesthetic zone?

Good question...so let's take a break here to look a bit closer.



Tissue level implants (some of them hollow cylinder), back then the “ITI system”, were placed in fresh extraction sockets, augmented with GBR and let to heal transmucosally and later be restored with solid abutments. Today I could have considered this impossible, if it wasn't for a well documented study. The year was 1996, in Bern by Brägger, Hämmerle and Lang.

Why were immediate implants so attractive?

Having established transmucosal healing, immediate placement was seen as a natural next frontier. The obvious advantages were reduction of the amount of interventions needed and also the amount of treatment time. Furthermore, immediate function or esthetics was also a significant lure to immediacy, in a time when temporaries and transitional prostheses were mainly removable. There was one more expectation from immediacy, maybe the most promising of all although the least documented and understood: preservation of tissue and in particular bone!

As confidence with immediacy increased, so did the observations of “tissue stability” and “bone stability” multiplied. Steadily, immediacy started to be suggested as the way to counter “atrophy and bone resorption” of the alveolar ridge. Today it might be difficult to understand how this suggestion spiralled into a wider perception through several cycles of self-reinforcement. One has to think that in the early 00's implant dentistry was still just an outlier practice. The volume of implants placed was a fraction of today's and the assessment of outcomes mainly dominated by osseointegration and survival. Implant practice was limited to few clinicians, while research was lead by a handful of university centres. Also, the research methodology was limited by the technological means and the knowledge of the time. Assessment of bone margin was limited to what one could see in often poor quality peri-apical radiographs, tissue health was only superficially defined and understood, while peri-implantitis was for many non-existent. With the documented cases of immediacy being limited to the hands of few very experienced clinicians in high profile university clinics and on selected patients, adding a bit of a novelty effect, imprecise technology and tools and there you can see, it does not take much to overestimate the technique, stretch success too thin and stumble.

We are around 2004. The expectations from immediacy peak in the world of implant dentistry, almost as much as the expectations for Olympic medals in Athens. A critical mass of high-profile researchers is convinced that immediate is the way to go to prevent tissue loss and envision immediacy into the mainstream as the new norm. There is a lot of scepticism, but opposition is scarce and criticism rare. The stage is set, for the next move: a breakthrough or a major disaster...

“One bridge too far?”

This classical expression should be well known to all WW2 movie fans, implying how disaster can sometimes loom once success is stretched too far. It was the Allied operation designed for the liberation of Netherlands, paratroopers were sent behind enemy lines to take over the bridges of Rhine and hold them until the land forces advance to relieve them. The airborne troops managed to take possession and hold the first 3 major bridges, but not the bridge of Arnhem which proved to be ...one bridge too far! The Unlucky British paratroopers (commanded in the movie by an amazing Sean Connery) take possession of the bridge only to be pummeled by the constant German counter attacks and lose 4/5 of their men before managing a dramatic retreat.

Likewise, the attempt to bring immediacy into the mainstream around 2004 proved to be a bridge too far. The commercial vehicle to materialise the promises of immediacy was soon launched and it was no other than implants designed for placement in extraction sockets aiming to receive immediate provisionals and promising to preserve tissue. Nobel Perfect and Nobel Direct, were two implants launched and marketed as the “immediacy” implants. They were one-piece implants with certain features that were expected to optimise outcomes of placement in fresh extraction sockets. Among these was the provision for a cement retained crown, the lack of an implant-abutment “gap” and also the coronal extension of rough surface, which was envisioned to enhance the attachment of the soft tissue. For this purpose and also to support interproximal papilla, Nobel Perfect had scalloped margins of the rough surface. The spatial positioning of an immediate implant at that time was also not perceived as today; there was a misguided view that filling the socket with titanium was the element which lead to bone preservation. This might be the principle behind another immediacy implant, around that time from Straumann, the TE implant which was a tissue level implant with characteristically wider coronal part. Nobel Perfect and Direct were actively promoted in USA, in what was possibly a first large scale promotion campaign for specific dental implants, including direct marketing to patients. The implants were received with both enthusiasm and scepticism and for the first couple of years after launch, the stages of the world were divided, between those who saw good results and preservation of bone and those who didn't. In the end, the wide promotion lead to larger scale implementation in practice. Immediate implants left the contained environment of expert clinicians and university research and got tested in the mainstream. Major disillusionment was about to hit the stage, as many clinicians found themselves stuck in the Arnhem bridge in desperate need of a bailout.

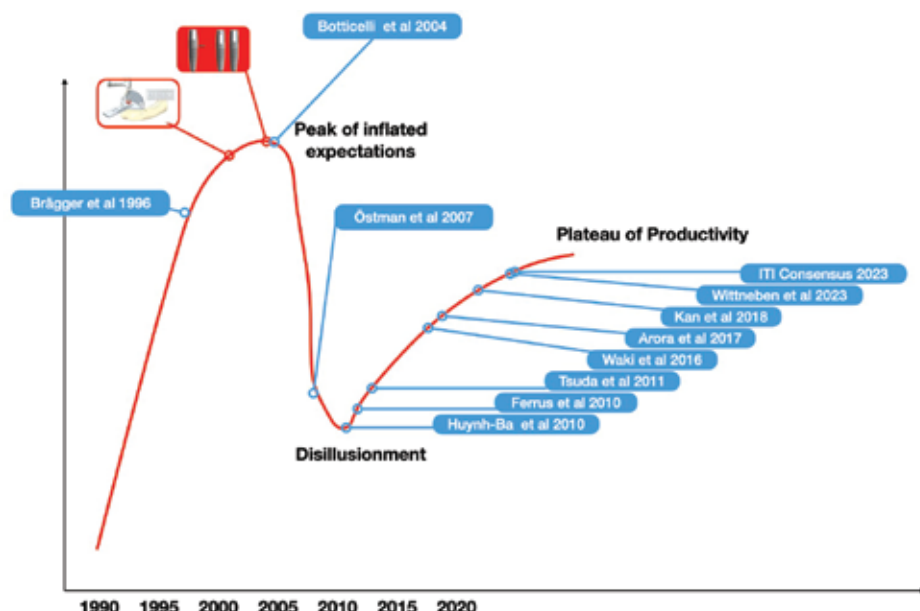
The disillusionment

The first hints of the brewing trouble came through the research work of Daniele Botticelli during 2004-2006, when he was completing his PhD with Jan Lindhe in Gotehnborg. In a series of well-designed animal experiments, they challenged the perception that immediate implants preserve bone and showed beyond doubt how the early bone resorption which takes place through the concept of the bundle bone is inevitable and irrelevant to the implant presence or not. The bundle bone is a biological concept which nobody till then had seemed to pay much attention to and which in essence was based on the obvious: the periodontal structures develop together with the tooth and they follow it in oblivion after extraction. In some further experiments the same authors introduced some very important parameters of immediate placement such as the “jumping distance”, the position of the implant and the need of augmentation to counter resorption. (Small parenthesis here, tribute to the legend of Jan Lindhe from Gothenburg who I believe is the man still around with the greatest qualitative impact in periodontology and the biology of Implant Dentistry. You might not hear of him that often and you will hardly see his name in consensus papers and guidelines that by now circulate almost annually from different directions. But from the start till the end, he in my mind is the one who more than anyone changed our thinking at critical times with few, targeted, well designed interventions. Parenthesis closed - back to 2004).

After the studies of Botticelli, the debate started to get more heated and opposing camps formed. In the years between 2004-2007 immediacy is being both enthusiastically promoted and increasingly challenged. Then one clinical study comes to finally tip the scale towards the disillusionment. Östman et al 2007 from the group of implantology pioneers Sennerby and Albrektson, documented a chilling realisation: It doesn't seem to work as we expected... In a clinical study with 48 patients and 115 one-piece implants the clinical outcomes one year after immediate placement and provisionalisation were alarming: Recession and exposure of rough surface was frequently encountered, as well as bone defects filled with granulation tissue, suppuration, dark shades under the mucosa and failures. All in all, the success of the one-piece immediate implants was alarmingly lower than the two piece counterparts.

Back to square 1?

The turning point was reached and the actions that unfolded next in the drama turned the tide completely. In the years that followed, a class action filed by more than 2,900 dentists in US lead to a wide debate that saw in the end the Direct and Perfect implants being discontinued and a settlement for a large sum being reached around 2013. Immediacy, which was just about to hit the wider adoption of the mainstream, was now to be put back to hibernation and return to the safety of confined research centres and expert clinicians for further improvement. We were not back to square 1, but indeed, we had taken quite a few steps back. It is around that time that NP Lang establishes the centre of excellence in implant dentistry in Hong Kong, where immediates will be put on ice for a few years more.



Looking back, we can't help but recognise a well-known pattern, the Hype Cycle of New technologies, as proposed by the Gardner group. Innovation, comes with a cascading effect: as the first outcomes reinforce our perceptions, expectations rise exponentially from the new protocols, expectations however which are not always founded in solid data. The technology delivers, but the novelty effect and some bias makes our expectations to inflate fast and disproportionately to the actual potential, reaching a euphoric peak just at the point of wider adoption. Then as more and more people jump on the wagon, limitations are becoming more apparent, failures inevitably

raise, flawed assumptions are laid bare, mistakes are done and a rapid disillusionment curve crushes down in process painful for many. And there, at the rock-bottom is where reflection starts. Data get scrutinised, questions are being formed, myth is slowly being separated from reality. And the slow progress comes towards the plateau of productivity, where the new technology can now deliver under a better designed and understood realistic framework.

Having hit the rock-bottom in the early 10's, a slow and well controlled process of research and development was initiated. Carefully designed clinical studies by many groups offered critical insights of the biological processes within immediacy, the tissue reactions that take place and under which parameters. How the bone and the soft tissue truly respond to immediate protocols was deciphered little by little through clinical research of that time around the world: in Bern by Pjetursson and Lang, in US by Joseph Kan and his team, in Gothenburg by Lindhe and his associates and later also from our team in Australia with Saso Ivanovski and more. In the end, the addition of some critical technologies such as 3D implant planning, CAD/CAM components and Computer Assisted Implant Surgery came to supplement our increased biological understanding and develop the modern concept of "immediacy" which is now an entire workflow, extending well before and after the placement of implants in extraction sockets. Immediacy is again about to hit the mainstream, only now from a very different perspective. But let's make a pause here.

The critical biological knowledge we have acquired today about immediacy, the technology which binds it all in a single workflow and what is the true potential of immediacy today, these are all topics to discuss in our next article !

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CASE REPORT

Application of artificial intelligence for the immediate transition of a failing tooth in the esthetic area (Smilecloud, Straumann® BLX)

Dr. Sergio H. Cacciagane et al., Spain

Immediate implants, i.e. immediately placed and restored implants, have recently gained considerable interest and popularity^(1,2). Compared to conservative and staged approaches, immediate implants may be considered favourable regarding treatment time, surgical sessions, and the possibility for immediate, fixed temporization. Also, outcomes like soft tissues and interdental papillae preservation may be improved by adopting immediate approaches^(1,3).

Authors: Dr. Sergio H. Cacciagane (DDS), Dr. Maximiliano Cacciagane (DDS, MSc), Dr. Cristian Orlando (DDS, MSc), Dr. Frank Ernesto Perez Avila (DDS, MSc), Dr. Eng. Seyed Behnam Taghavi (PhD, MSc, BSc, DT). All: ESIRO Barcelona (Escuela Superior de Implantología y Rehabilitación Oral) (www.esiro.es)

INTRODUCTION

Immediate implants in fresh extraction sites were demonstrated to be predictable and successful. However, adherence to clinical protocols and the strict application of case selection criteria remain essential to ensure treatment success⁴.

With the new BLX implant, Straumann® has recently introduced an optimized implant design, addressing immediate stability - a key requirement for immediate placement in extraction sockets and temporization.^{5,6} The implant is characterized by a protruding thread geometry, maximizing apical bone engagement and primary implant stability irrespective of bone quality⁷.

Digitally guided techniques have significant potential in rendering surgical workflows more accurate, predictable and less invasive⁸. The increasing digitalization and the introduction of novel techniques and materials, like, e.g. digital smile design, have recently also started to transform prosthetic workflows substantially^{9,10}. However, associated steps within the workflow remain platform, data format and site-dependent and may involve significant and laborious adaptation, validation and transfer steps to provide the desired outcomes.

With Smilecloud, a cloud- and AI-based platform has recently become available that significantly improves and facilitates the prosthetic workflows from planning to realization by removing interfaces between individual workflow steps, facilitating team cooperation across sites and optimizing patient communication. Specifically, the AI-assisted prosthetic design algorithm based on biometric libraries allows clinicians and technicians to seamlessly transition digital smile design concepts into prosthetic provisional and final wax-ups in one platform and with a few simple steps.

The presented case illustrates these exciting features of this novel tool for a patient undergoing immediate implantation and restoration in the aesthetic area using Straumann®BLX.

INITIAL SITUATION

A 42-year-old female patient presented in our office with a chief complaint about a horizontal root fracture and complete crown loss of her upper left first premolar (tooth #14), compromising her aesthetics and masticatory function (Fig. 1). The patient reported to be a non-smoker, in good overall general health and displayed a history of periodontitis. Her periodontal status was assessed as stable after reinforcing hygiene routines and being included in a routine professional prophylaxis program. Oral examination revealed only a mild presence of plaque at free gingival margins and adjacent areas corresponding to a plaque index of 1, according to Silness and Loe¹¹.

The remaining tooth root of tooth #14 was considered hopeless and unrestorable. It did not allow for a reliable and predictable long-term treatment prognosis after assessment of all, i.e., the prosthodontic, periodontal and endodontic dimensions^{12,13}. After consideration of all potential local, site-specific and more general patient-related factors, a recommendation for implant therapy was given and was consented to by the patient.

TREATMENT PLANNING

The treatment plan was based on replacing tooth #14 with an immediate, i.e. immediately placed and provisionalized implant restoration using a fully digital workflow comprising Straumann® BLX implants. Novel artificial intelligence (AI) assisted design algorithms using Smilecloud were used for restorative planning and waxing. Prosthetically driven planning of the implant restoration was based on combined prosthetic anatomic virtual patient models. The surgical and prosthetic workflows were designed as a guided surgical approach combined with immediate restoration to ensure maximum placement precision and reliability as well as optimal hard tissue healing and soft tissue adaptation, respectively^{3,14,15}. A three-dimensional assessment of the patient's alveolar anatomy revealed adequate buccal wall thickness and confirmed ideal anatomic conditions for immediate implant placement¹⁶.

Digital smile design and digital waxing of the provisional wax-ups were obtained using the Smilecloud web-based platform. Figure 2 illustrates the real-time design of a provisional wax-up starting from frontal digital photographs and intraoral scans using Smilecloud's AI algorithms. The full process was intuitive and straightforward and comprised the following steps: First, the AI was instructed on the smile curve and available restorative space (yellow line), midline, and the patient's dento-gingival phenotype comprising tooth shape, proportions, contact points, gingival margins, papilla levels and embrasures (white dotted lines). Based on this input, the AI proposed an appropriate model from the system's biometric library, which was validated using real-time displayed overlays. Finally, the AI's algorithms directly converted the corresponding model into the provisional wax up. Morphed overlays of the patient's image and wax-up were used for patient communication and to illustrate and validate the planned final treatment outcomes.

Overlays of the delivered wax-up with intraoral scans indicated a perfect match between both STL data files. Figure 3 illustrates the alignment of the provisional wax-up from Smilecloud's biometric library (left) with the patient's intraoral scan (middle). Overlays indicated high consistency between proposed and existing dental and gingival structures. The design of the planned restorative crown and occlusal surfaces were considered ideal.

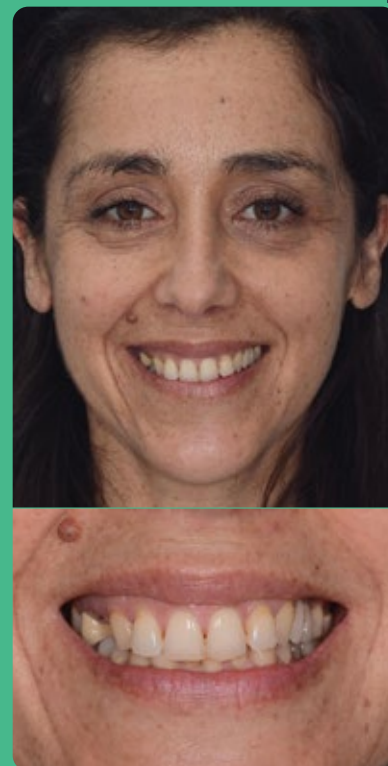


Fig. 1: Pre-treatment frontal photographs. LEFT: patient's facial and smile esthetics, RIGHT: Close-up of the patient's smile illustrating a high smile line and extended buccal corridors prominently exposing her lost right first premolar.

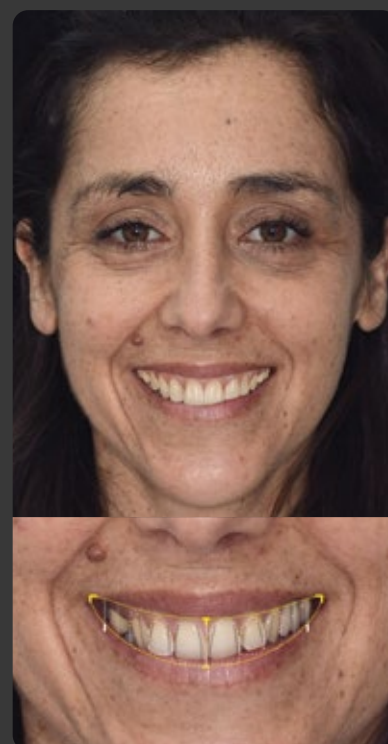


Fig. 2: Digital smile design within Smilecloud. Left: Close-up image of the patient's smile in Smilecloud used to define the smile line and restorative space (yellow lines) and dento-gingival phenotype (white dotted lines). LEFT: Real-time rendering illustrating the patient's future facial and smile aesthetics after selecting the adequate model from Smilecloud's biometric library.



Fig. 3: Illustration of the design and validation of digital wax-ups provided by Smilecloud using intraoral scan data. LEFT: Digital wax-up proposed by Smilecloud's AI algorithms and based on Smilecloud's biometric library models. MIDDLE: Intraoral scan of the patient. RIGHT: Superimposed STL files of intraoral scan (green) and Smilecloud-generated digital wax-up (red) confirming an ideal match between models and adequate design of the restorative crown.

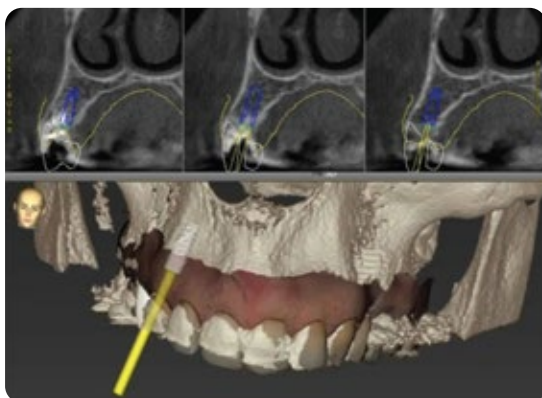


Fig. 4: Illustration of the prosthetically driven implant restorative planning based on virtual anatomic models from aligned digital wax-up STL files provided by Smilecloud and 3D alveolar anatomic CBCT DICOM data within coDiagnostix®. Mesiodistal sections illustrate the detailed planning of the bucco-palatal implant position and angulation in relation to the planned restoration.



Fig. 5: Surgical template. LEFT: 3D model of the tooth-born surgical guide comprising mesial and distal windows for verifying adequate fit. RIGHT: 3D printed surgical guide and mock-up model (RIGHT).

STL files of the digital wax-up were next combined with Digital Imaging and Communication in Medicine (DICOM) data from CBCT in coDiagnostix® to result in a virtual anatomic model. This model was used to plan the ideal position of the implant and, importantly, the bucco-palatal orientation and angulation of the implant (Fig. 4).

A tooth-born surgical guide was designed within coDiagnostix® and in-house 3D-printed (Cares® P30+) to transfer the virtual plan into the surgical field. The virtual model, the resulting fabricated guide and a printed mock-up model are illustrated in Figure 5. Verification windows were included in the design of the guide to ensure an adequate fit during the procedure.

SURGICAL PROCEDURE

Surgical procedures were performed under standard infiltration anaesthesia and started by atraumatically extracting the tooth root after sectioning the root in a mesiodistal direction, luxation of the segments using a periosteal elevator, and removal of the root segments using forceps. Visual assessment revealed that the buccal bone wall was entirely preserved after extraction and displayed no to minimal vertical bone loss. The socket morphology was classified as Elian Type I and, consequently, ideal for immediate placement and temporization^{16,17}.

The implant osteotomy was prepared following the manufacturer's instructions by guided drilling using a Ø2.2 mm pilot and Ø2.8 mm final drill (Fig. 7). Next, a 3.75 mm x 12 mm BLX (SLActive®, Roxolid®) implant was placed guided using a motor handpiece. The surgical template served as a reference to define placement depth. The immediate primary stability, assessed by an insertion torque of >50 Nm and an ISQ value of 75, was high and adequate for immediate provisionalization.

Implant placement resulted in a gap between the implant and buccal bone of ca. 1.5 mm (Fig. 9). To limit buccal contour changes and potentially enhance the thickness of the peri-implant soft tissues coronal to the implant-abutment interface, the gap was filled with a particulate Xenograft (Straumann® Xenograft) that was combined with autologous bone. The latter was obtained by adopting a slow-speed drilling protocol without irrigation, as described by Anitua et al.^{18,19}. Straumann® Xenograft was chosen based on its ability to alter buccal bone healing and potentially improve peri-implant bone volume stability²⁰.



Fig. 6: Illustration of atraumatic tooth extraction and resulting extraction alveolar anatomy. LEFT: atraumatic tooth extraction after mesiodistal root sectioning. RIGHT: occlusal view on the resulting extraction alveole.

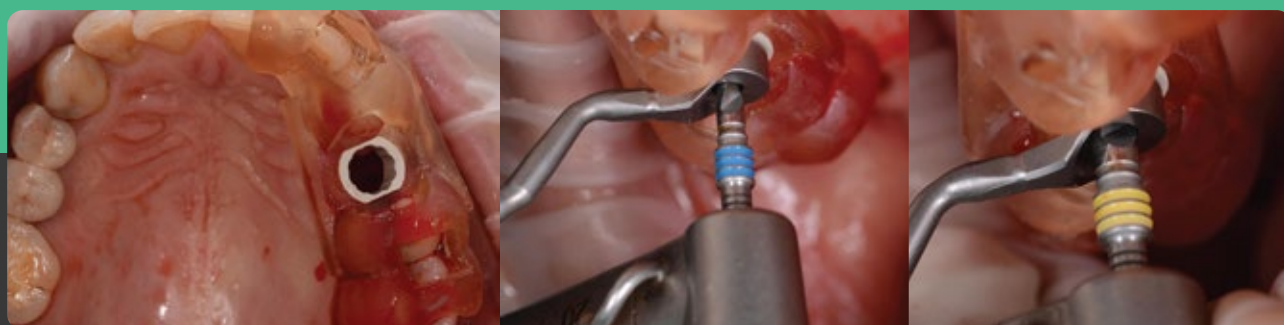


Fig. 7: Guided surgery. LEFT: Situation after placement of the surgical guide. MIDDLE: Ø2.2 mm guided pilot drilling. RIGHT: Ø2.8 mm final drill. The axial orientation of the drills was controlled by corresponding drill handles.

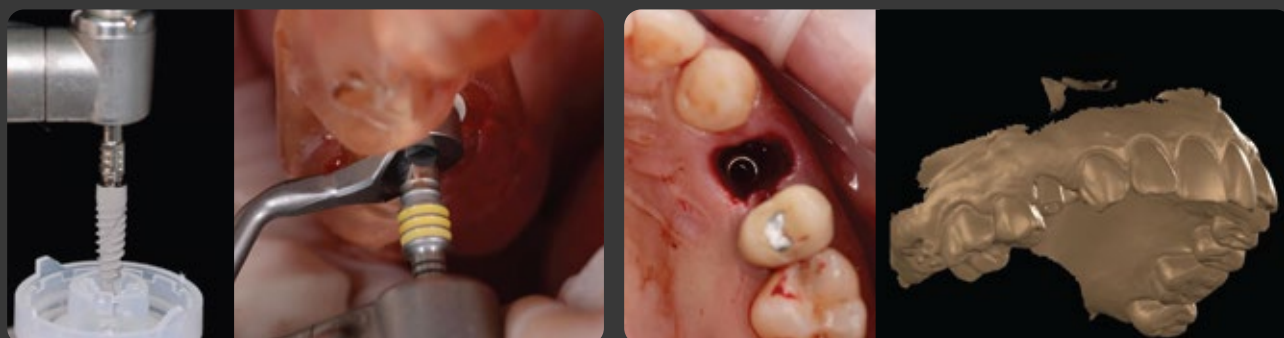


Fig. 8: Placement of a Ø3.5 x 12 mm BLX (SLActive®, Roxolid®) implant. LEFT: Pick up of the BLX implant from the vial lid. RIGHT: Implant placement using a motor-driven handpiece and the surgical template.

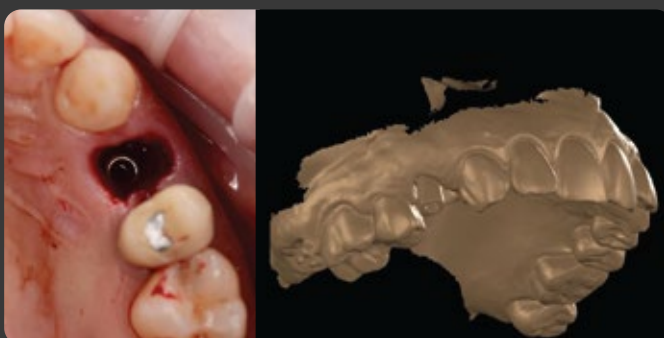


Fig. 9: Situation after implant placement and intraoral scan. LEFT: Occlusal view after implant placement illustrating the buccopalatal implant position and extension of the implant gap between the buccal bone and the implant. RIGHT: Intraoral scan with a CARES scan body.



Fig. 10: Delivery of chair-side prepared immediate provisional based on the Smilecloud-derived wax-up and the post-surgical intraoral scans and using a temporary screw-retained abutment.



Fig. 11: Situation after delivery of the immediate provisional. LEFT: occlusal view during the check of occlusion for contact points. RIGHT: lateral view illustrating the optimal design and soft tissue adaptation to the crown.

PROSTHETIC PROCEDURE

The implant was immediately restored to condition the peri-implant soft tissues to the new restoration and prevent soft tissue collapse until delivery of a CAD/CAM monomer-free PMMA provisional. The latter was prepared from final wax-ups combined from STL files of post-surgical intraoral scans using a CARES scan abutment and the Smilecloud-derived digital wax-up. Final wax-ups were prepared in Straumann® Cares® Visual (Fig. 9).

Figure 10 illustrates the delivery of the chairside prepared acrylic immediate provisional based on the final wax-up and a screw-retained temporary abutment. The emergence profile's critical and subcritical contours were adapted extraorally to support crestal soft tissue healing optimally. 21 Occlusal aspects were modified to reduce initial loading.

TREATMENT OUTCOMES AND CONCLUSIONS

Figure 11 shows the resulting occlusal situation after immediate provisionalization and the lateral aesthetic appearance. Smilecloud's AI-enhanced digital workflow and biometric library models allowed for an efficient and straightforward design of a provisional wax-up feeding into subsequent surgical planning and prosthetic manufacturing steps. The patient expressed her complete satisfaction with the procedure, both in terms of aesthetics and functionality but also from a pre-treatment outcome visualization point of view.

AUTHOR'S TESTIMONIAL

Smilecloud was a valuable asset in the whole journey, as we used it to communicate with the patient about the potential outcome and benefits of an immediate restoration after an immediate implant, engage with the patient using Smilecloud and show in real-time how we could update her smile and also the designed provisional, all in the same platform was game-changer for the patient (and also the clinical team).

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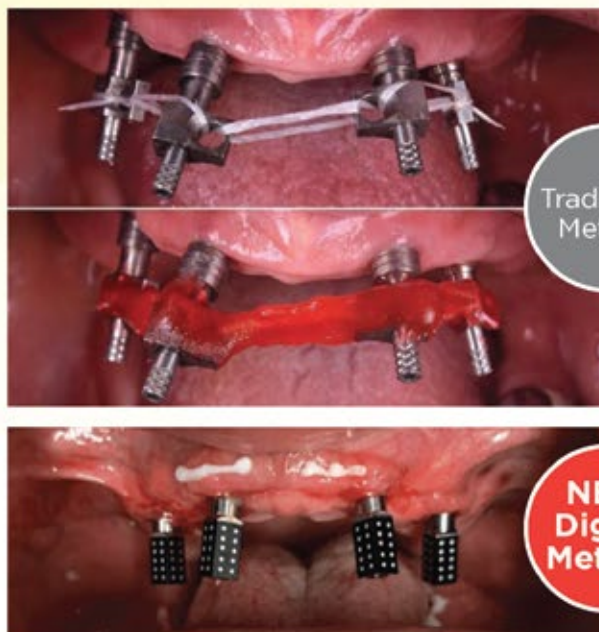
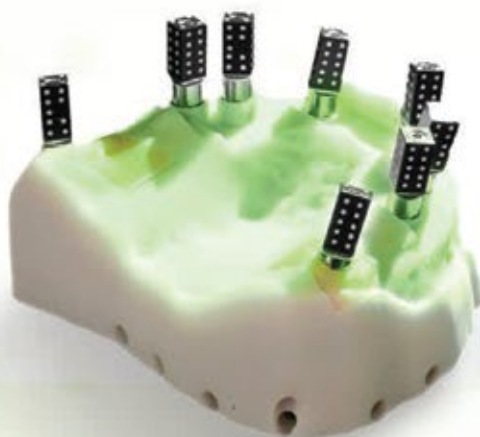
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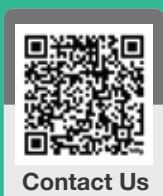
Item	Expense	Market Price	Discount	Net Cost	Savings
Equipment	Complete Set-up for 2 Treatment Rooms	\$ 1,000,000	30%	\$ 700,000	\$ 300,000
	<i>Including: CBCT x 1, Dental Chair x 2, Compressor & Suction x 1, X-Ray x 1, Autoclave x 1</i>				
Consumables	Initial Stock of Daily Consumables	\$ 200,000	30%	\$ 140,000	\$ 60,000
	<i>Including: Instrument, Handpiece, Restorative, Endo, PPE & Disposables</i>				
Finding Location	Property Agent Commission (Assuming \$80,000 rent)	\$ 40,000	50%	\$ 20,000	\$ 20,000
Design & Renovation	Cost of Design & Renovation	\$ 700,000	10%	\$ 630,000	\$ 70,000
Clinic Branding	Design & Production Fee	\$ 10,000	100%	\$ 0	\$ 10,000
IT Support	Supply and installation of computers including network set-up	\$ 45,000	30%	\$ 31,500	\$ 13,500
Software	Annual Package of "ClinicSolution" Management System & "YOOV" Booking System 3 Months Trial on "YOOV" Booking System	\$ 14,400	30%	\$ 10,080	\$ 4,320
Company Registration Fee	Application & Cost for Clinic's Business Registration	\$ 6,500	100%	\$ 0	\$ 6,500
Total	Estimated Set Up Cost	\$ 2,006,500	Save 24%	\$ 1,525,000	\$ 481,500

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Peri-implantitis treatment with GalvoSurge® in the esthetic zone: One approach for biofilm removal in two patients



Dr. Alberto Monje Correa
DDS, MS, PhD

Introduction

Peri-implantitis is a pathological condition occurring in tissues around dental implants and characterized by inflammation in the peri-implant connective tissue and progressive loss of supporting bone¹.

Particularly, peri-implantitis poses a significant clinical challenge in the esthetic zone due to its potential to cause mucosal recession. This condition can lead to visible changes in the appearance of the implant site, impacting overall esthetics. Managing peri-implantitis in such areas requires careful consideration and tailored strategies to prevent or address mucosal recession and preserve the esthetic outcome².

In treating peri-implantitis, the goal is to reduce inflammation in soft tissues and stop further bone loss. Since nonsurgical methods have their limitations in achieving this goal, surgery is often recommended, and different techniques have been proposed based on factors like bone configuration and soft tissue characteristics³.

Before initiating any regenerative treatment, it is essential to eliminate biofilm around the dental implant. In recent years, several modalities and innovations have emerged for this purpose. One example is the GalvoSurge® Dental Implant Cleaning System, a biofilm-removal technology based on electrolytic cleaning. In just two minutes, GalvoSurge® removes bacterial biofilm from dental implants affected by peri-implantitis, setting the stage for bone grafting procedures.

This report unfolds a narrative of innovation in biofilm control and precision in bone regeneration, showcasing the potential of GalvoSurge® in treating peri-implantitis in two patients with affected peri-implant tissues within the esthetic zone⁴.

Keys for success

- The configuration of the peri-implant defect may play a pivotal role in achieving successful reconstructive outcomes, leading to disease resolution and marginal bone level gain.
- Narrow defect angle (<40 degrees) may further favor the reconstructive outcome.
- In cases where the implant is within the bony housing, the recommended approach involves surface decontamination followed by regeneration.
- In cases with a 2-wall defect configuration, the use of a barrier membrane is preferable. Meanwhile, in scenarios involving a well-contained defect configuration, barrier membrane might be optional.
- For enhanced esthetic outcomes, soft tissue grafting using a connective tissue graft is advisable.

Patient No. 1 Initial situation

A patient came to the clinic complaining of discomfort, bleeding and pus discharge in the anterior esthetic area (Fig. 1.1). The intraoral examination showed deep pocketing around implant #22, and radiographic analysis indicated moderate bone loss (Fig. 1.2).

Treatment planning

The treatment plan was discussed with the patient, and a mucoperiosteal flap with mechanical instrumentation combined with GalvoSurge® was decided. Guided bone regeneration was planned to address the bone defects.



Fig.1.1

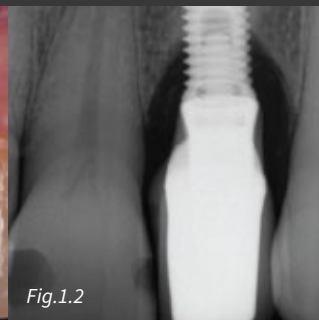


Fig.1.2

Surgical procedure

A mucoperiosteal flap was elevated by means of intrasulcular incisions. A peri-implantitis-related lesion was meticulously removed from the implant using a site-specific curette. A moderate 2-wall peri-implantitis-related bone defect (class Ib) in the esthetic area was observed (Figs. 1.3–1.4). The configuration and depth of the defect are crucial factors in evaluating the feasibility of a therapeutic approach. The implant, situated within the bony housing, was deemed suitable for reconstructive therapy. Mechanical surface decontamination was performed using a titanium brush (Fig. 1.5). An electrolytic approach, utilizing the GalvoSurge® Dental Implant Cleaning System, was employed to decontaminate the surface and establish an aseptic environment (Fig. 1.6).

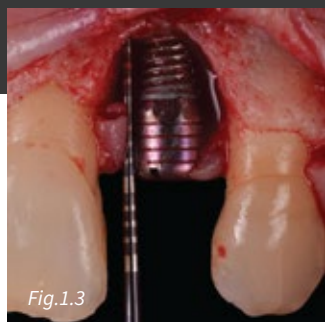


Fig.1.3

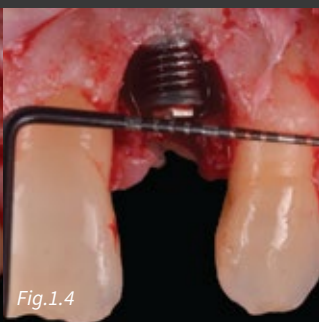


Fig.1.4

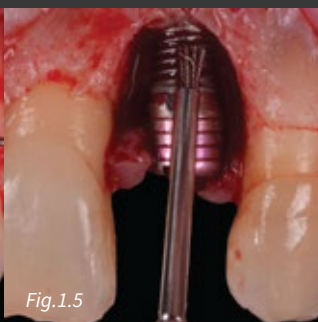


Fig.1.5



Fig.1.6

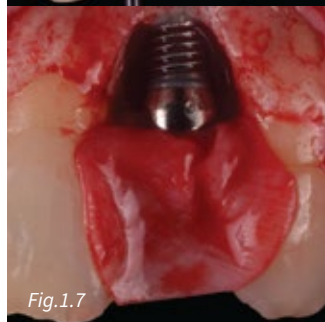


Fig.1.7

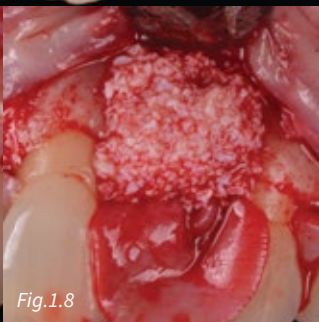


Fig.1.8



Fig.1.9

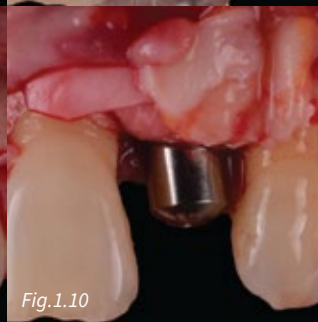


Fig.1.10

To support bone grafting, a resorbable barrier membrane was utilized (Fig. 1.7). A 1:1 combination of deproteinized bovine bone mineral and autologous bone chips obtained from adjacent surgical sites was applied to graft the bone defect (Fig. 1.8). A porcine collagen membrane was secured with subperiosteal sutures (Fig. 1.9). Further stabilization involved the use of a subepithelial connective tissue graft to attain mucosal stability and minimize recession (Fig. 1.10).

Treatment outcomes at 20-month follow-up

At the 20-month follow-up, clinical assessment revealed complete resolution of the disease (Fig. 1.11). Reduction of probing pocket depth and bleeding on probing was noted. Substantial radiographic bone level gain and stability were observed during the same period (Fig. 1.12). The patient was pleased with the esthetic outcome.



Fig.1.11

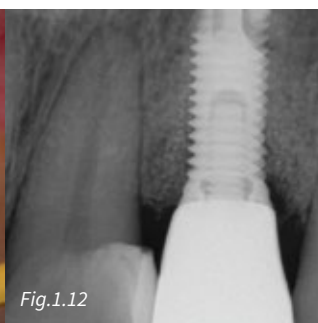


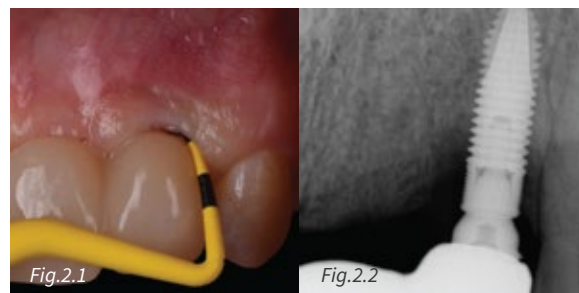
Fig.1.12

Patient No. 2 Initial situation

During the patient's annual check-up at the referral practice, it was noted that implant# 22 exhibited signs of bleeding on probing and deep pocketing (Fig. 2.1). A radiograph was taken, and moderate bone loss was observed (Fig. 2.2).

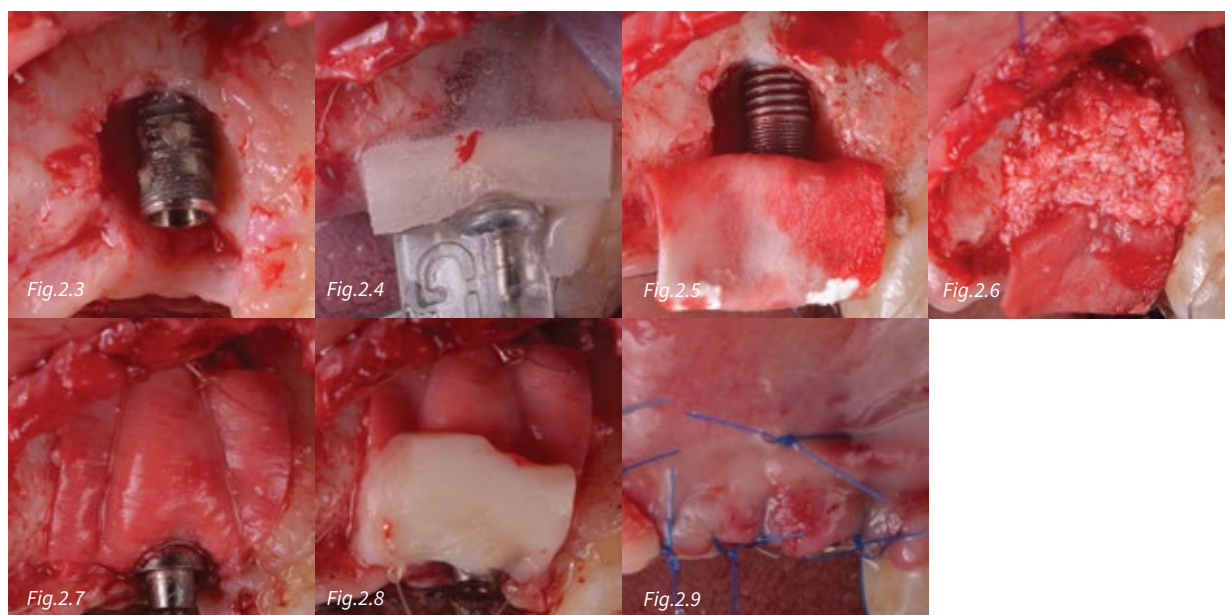
Treatment planning

Surgical plaque removal with guided bone regeneration was planned. The surgical phase plays a crucial role in achieving effective plaque removal and has demonstrated efficacy, particularly in cases with moderate and severe pocket depths.



Surgical procedure

After performing the flap, the crown of #22 was removed to facilitate access and mechanical instrumentation. At this point, it was possible to observe a moderate 3-wall peri-implantitis-related bone defect (class Ib) in the esthetic area. The peri-implantitis-related lesion was removed using a site-specific curette (Fig. 2.3). Subsequently, a titanium brush was employed to remove calculus from the implant surface, followed by the electrolytic approach using GalvoSurge® to remove bacterial biofilm and achieve surface decontamination.



To support bone grafting, a resorbable barrier membrane was utilized. Autologous bone chips were harvested from adjacent surgical sites and were subsequently mixed with deproteinized bovine bone mineral to completely fill the defect for reconstructing the lost peri-implant tissues. The collagen membrane was secured through subperiosteal sutures. Additionally, a subepithelial connective tissue graft was employed and stabilized to attain mucosal stability, minimizing recession. The wound was closed in a tension-free manner to promote transmucosal healing (Figs. 2.5-2.9).

Treatment outcomes at 15-month follow-up

At the 15-month follow-up, clinical assessment revealed complete resolution of the disease. The esthetic outcome demonstrated harmony with limited mucosal recession. Additionally, substantial radiographic bone level gain and stability were observed during the same period (Figs. 2.10-2.12).



Author's message

The management of peri-implantitis from the esthetic standpoint is challenging, as it entails the achievement and maintenance of a healthy ecosystem, minimizing esthetic distortion, and producing a harmonious soft tissue profile. The use of GalvoSurge® for surface decontamination, combined with bone reconstruction simultaneous to soft tissue grafting by means of a sub-epithelial connective tissue graft, demonstrated safety and efficacy in attaining success.



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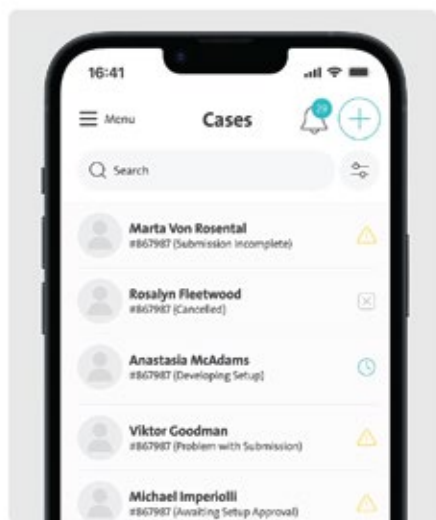


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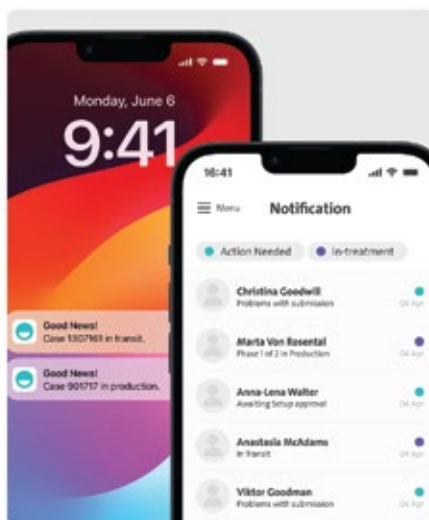
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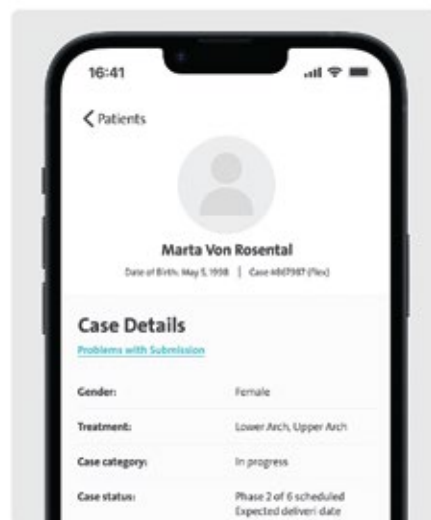
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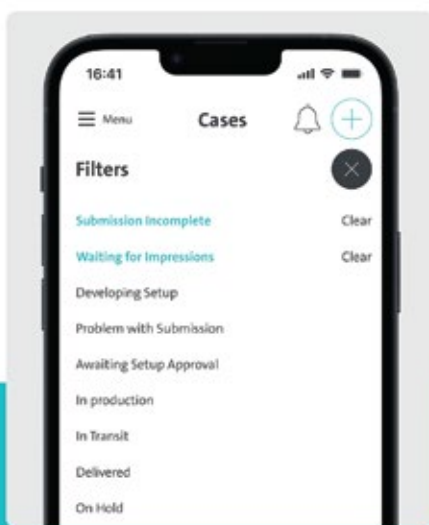
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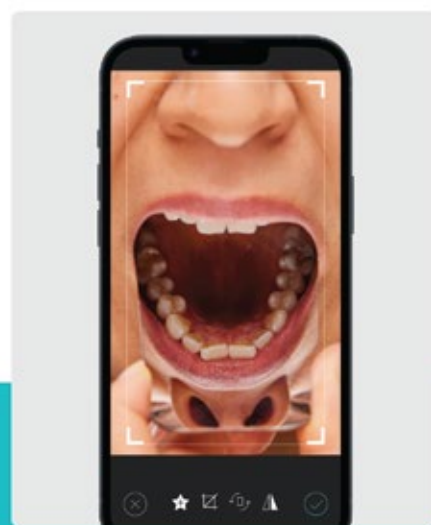
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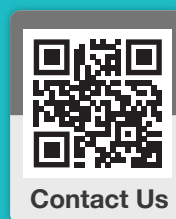
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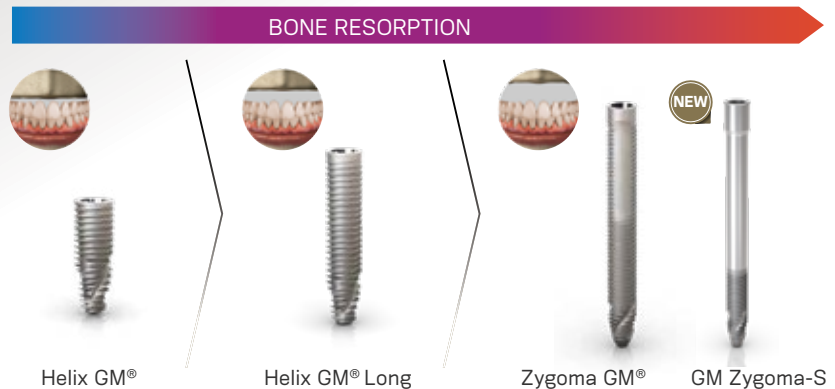
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Advice for Dentists: Addressing the Challenges Faced by Dental Nursing

Dental nurses play a pivotal role in the success of dental practices. They are involved in various aspects of patient care, from clinical assistance to administrative tasks, ensuring the smooth running of the practice. However, dental nursing faces several challenges that need to be addressed. In this article, we will provide dentists with valuable advice on how to tackle these challenges and create a supportive environment for dental nurses.

Recognize the Value of Dental Nursing:

The first step in addressing the challenges facing dental nursing is to recognize and appreciate the value of these professionals. Understand that dental nurses are more than just ancillary staff; they are the backbone of any successful dental practice. Show your appreciation for their contribution and make them feel valued.

Address the Pay Gap:

One of the pressing issues in dental nursing is the pay gap. Dental nurses often earn significantly less than other dental professionals, which can lead to low morale and hinder the attraction of new talent. Dentists should advocate for better pay and benefits for dental nurses, ensuring fair compensation for their skills and dedication.

Enhance Career Progression Opportunities:

Dental nurses should have opportunities for career advancement within the field. Invest in continuous education and provide clear pathways for growth and development. By offering training programs, workshops, and seminars, dentists can retain talented dental nurses and improve the overall quality of dental care.

Tackle Stress and Burnout:

The high-stress environment of dental practices can contribute to burnout among dental nurses, affecting both their well-being and patient care. Dentists should proactively address this issue by implementing measures such as flexible scheduling, mental health support, and a supportive work culture. Encourage open communication and provide resources to help dental nurses manage stress effectively.

Embrace Technological Changes:

Advancements in dental technology offer opportunities for streamlined processes and enhanced patient care. Dentists should invest in training their nursing staff to keep pace with these changes. By providing ongoing education and support, dental nurses can adapt to new technologies and improve efficiency, leading to greater job satisfaction.

Improve Working Conditions:

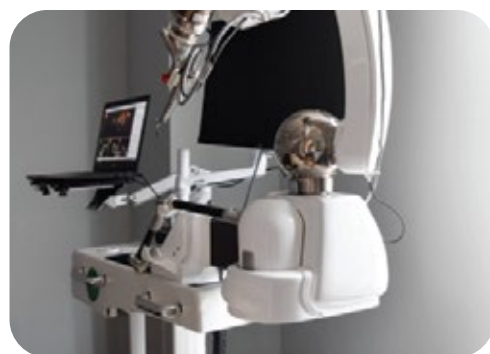
The physical demands of dental nursing can take a toll on the well-being of dental nurses. Dentists should prioritize ergonomic interventions, regular breaks, and work-life balance to ensure the physical health of dental nurses. Creating a healthy and supportive work environment will contribute to their overall well-being and job satisfaction.

Foster a Culture of Respect and Inclusion:

Dental nurses should feel valued, respected, and included in the decision-making processes. Recognize their contributions, encourage their input, and foster a culture of teamwork and mutual respect. This inclusive environment will boost morale and create a positive work atmosphere.

By implementing these recommendations, dentists can ensure that dental nursing remains a rewarding and respected profession, benefiting both dental practices and the health of the community.

Dental Industry News



Yomi: Revolutionizing Dental Implants with Robotic Technology

Yomi, developed by Neocis in 2009, has gained FDA clearance for general and full-arch dental implant procedures, as well as bone reduction. These clearances make Yomi the only approved robotic system for various dental implant procedures.

Neocis has raised \$20 million in funding for the Yomi robotic system from NVentures and Mirae Asset Capital. This significant investment reflects the growing recognition of the transformative potential of robotics and AI in dentistry. The Yomi robotic system has already placed over 40,000 dental implants, revolutionizing implant procedures with its clinical efficiency and improved patient experience.

The funding enables Neocis to continue driving advancements in implant dentistry and expand the reach of Yomi. With haptic feedback, intuitive visualization, and audio cues, Yomi assists clinicians in achieving exceptional accuracy and precision during implant placement. The investment demonstrates the confidence investors have in Yomi's ability to bring innovation to dentistry.



HK Government Responds to Concerns on Elderly Health Care Voucher Pilot Scheme

The Hong Kong Government's Health Bureau has addressed the concerns raised by the Hong Kong Dental Association regarding the Elderly Health Care Voucher Greater Bay Area Pilot Scheme. In their response, the government highlights the importance of service quality, the selection process for pilot medical institutions, and the measures taken to ensure high-quality services under the scheme.

Key Points:

1. Extending Access to Healthcare:

Since 2015, eligible elderly individuals have been able to use Elderly Health Care Vouchers (EHCVs) to receive dental services at the University of Hong Kong-Shenzhen Hospital. The pilot scheme aims to expand this arrangement to include private primary healthcare services in the Greater Bay Area, providing more service options for eligible elderly persons.

2. Robust Selection Process:

Through market research, consultations, site visits, and meetings with senior management, the government selected seven high-quality pilot medical institutions, including two dental institutions, based on factors such as service quality, management experience, and fee standards.

3. Ensuring Sustainability of Services:

The government is collaborating with various medical institutions, including dental institutions, to establish a training and service assurance mechanism. This mechanism will cover aspects such as service quality, training, operation, fee levels, complaint mechanisms, and patients' experiences.

4. Comprehensive Monitoring Mechanism:

Similar to the existing Elderly Health Care Voucher Scheme, the pilot scheme will have a robust monitoring mechanism. The Department of Health will closely monitor the training and service assurance process, and the public can address any complaints to both the Department of Health and the pilot medical institutions. Cooperation with health authorities in the Mainland will be sought when necessary.

5. Role of the Dental Profession:

The government acknowledges the professionalism of the dental profession and the significant number of healthcare professionals enrolled in the Elderly Health Care Voucher Scheme. Local dentists remain the primary channel for dental services, with 1,500 dentists providing services at over 3,300 service points in Hong Kong. The government encourages the dental profession to actively promote further development and collaboration to enhance dental services and improve overall oral health.

** The content of this article is based on the press release issued by the Hong Kong Government's Health Bureau.*

Stem Cells Hold Promise for Regenerating Tooth Enamel and Living Fillings

In a groundbreaking development, scientists are exploring the potential of stem cells to revolutionize dental care by regenerating tooth enamel and creating living fillings. This exciting research opens new possibilities for improved oral health and transformative dental treatments.

Stem cells are undifferentiated cells with the unique ability to develop into different types of cells in the body. By harnessing the regenerative potential of stem cells, scientists aim to create a solution for repairing or replacing damaged tooth enamel.

The study of stem cells in dental care also extends to the development of living fillings. Conventional fillings, made of materials like amalgam or composite resin, can deteriorate over time and may require replacement. In contrast, living fillings created from stem cells could potentially regenerate and integrate with the surrounding tooth structure, offering a longer lasting and more natural solution.

The research in this field is still in its early stages, but initial experiments have shown promising results. Scientists have successfully generated tooth enamel-like structures in the laboratory using stem cells, and animal studies have demonstrated the integration of living fillings with surrounding dental tissues.

While the application of stem cells in dentistry holds great potential, there are still challenges to overcome. Scientists are working to optimize the techniques for generating enamel and ensuring its durability. Additionally, ethical considerations and regulatory approvals must be addressed before these advancements can be translated into clinical practice.

The integration of stem cell technology into dental care has the potential to transform the field, offering innovative solutions for tooth repair and restoration. Regenerating tooth enamel and creating living fillings could provide patients with longer-lasting and more natural-looking results, ultimately improving oral health and quality of life.

As research in this area continues to progress, it is an exciting time for both dental professionals and patients, as the future of dentistry holds the potential for groundbreaking advancements through stem cell therapies.

Intra-Oral Scanners Improve Communication in Paediatric Dentistry

A recent German study revealed the positive impact of intra-oral scanners as communication tools in paediatric dentistry. By comparing verbal explanations alone to those supplemented by intra-oral scans, researchers found that the use of scans significantly enhanced primary guardians' understanding of dental findings and increased treatment acceptance. In the study, 60 children received dental examinations, with half of them undergoing scanning using an intra-oral scanner. Questionnaire responses showed that the group with access to intra-oral scans answered 85.5% of questions correctly, compared to 57.2% in the control group. The findings emphasize the value of intra-oral scanners in improving communication and treatment outcomes in paediatric dental care.



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Stability

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- 10-15 Applications
- Duration Per Application: Overnight



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Stability

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- CP 7% (HP 2.4%)
- 10-15 Applications
- Duration Per Application: Overnight

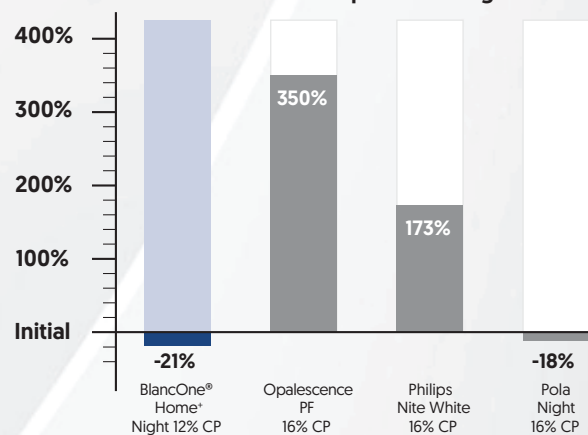
How does BlancOne Home+ differ from other brands?



Protecting and Repairing the Tooth Surface

By means of atomic force microscopy (AFM), the tests performed by the University of Genoa analysed the increase in superficial roughness* of the elements treated with different home whitening products. BlancOne® HOME+ was found to be the only treatment capable of combining a high whitening efficiency with a reduction of the superficial roughness due to the deposition of new additional material. On the contrary, other products have showed a significant increase in the superficial roughness.

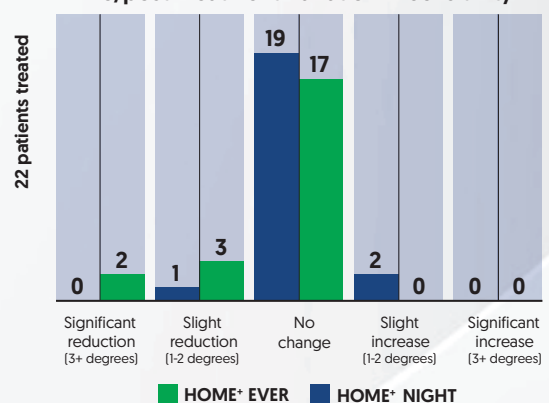
Variation of the Superficial Roughness



Tooth Sensitivity Reduction

In addition to its extraordinary whitening effect, the in vivo tests showed, by means of Cold Tests, a nearly total absence of increase in tooth hypersensitivity during and after the whitening treatment performed with BlancOne® HOME+. Some of the patients treated with BlancOne® HOME+ EVER have indeed reported a significant reduction in pre-existing tooth hypersensitivity.

Pre/post Treatment Variation in Sensitivity



* Superficial roughness has been analysed by means of the SDR parameter which represents the percentage of additional surface resulting from the surface topography compared to an ideal plane of the dimension of the region analysed. For a flat surface, SDR is equal to 0% and it increases together with the complexity of the surface topography.

HP = Hydrogen Peroxide
nHAP = nano-hydroxyapatite
CP = Carbamide Peroxide



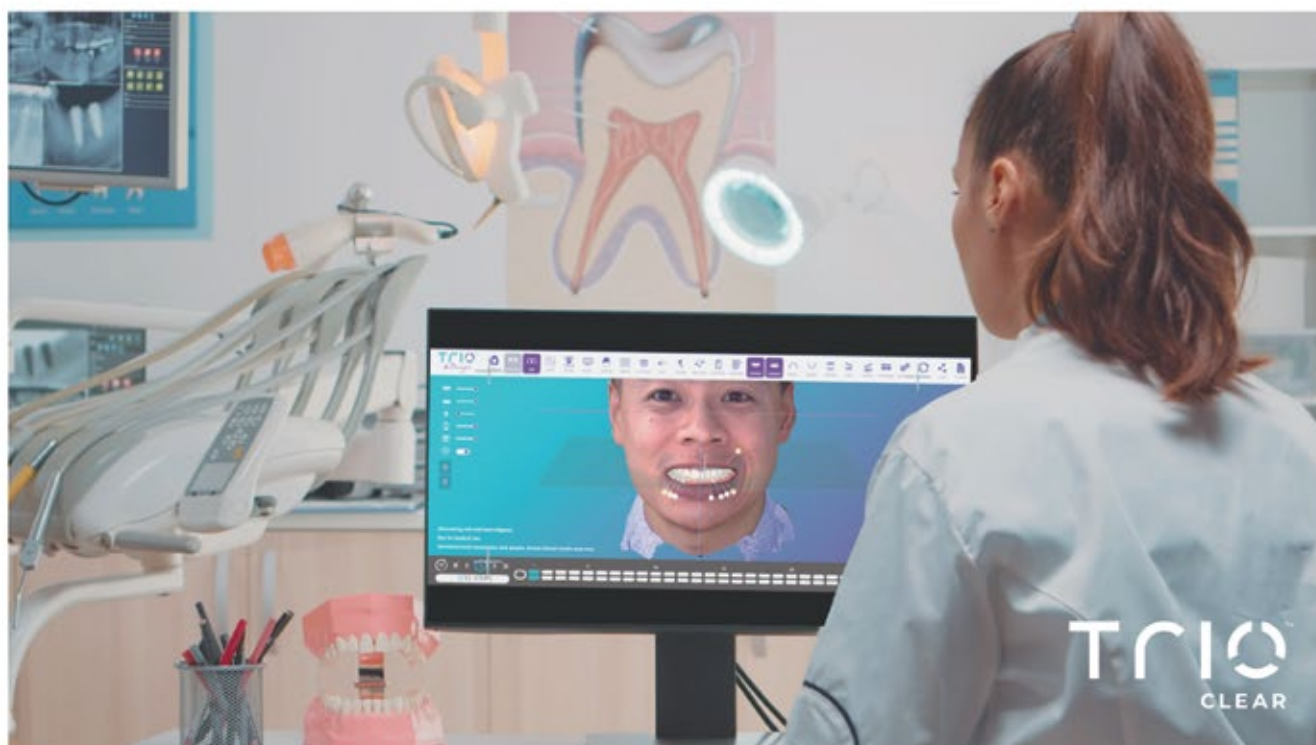
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隱形矯正結合 RAYFace 臉掃機
革新牙科醫療的數位化時代



「在這個充滿數位化可能性的時代，隱形矯正結合臉部掃描機無疑為牙科醫療開啟了一扇全新的大門。這不僅是對傳統矯正方法的改進，更是對整個醫療過程的革新，為患者提供了更準確、更個性化的治療方案，同時也為牙科醫生提供了更全面、更可靠的數據支持。臉部掃描機不只在TrioClear上面，更可以結合DSD、植牙、全口重建等等療程，讓醫師與技師有更充分的臉形外觀與口腔內數據，提供更精準的治療計畫。」

林柏豐醫師

森森美學牙醫診所院長
高雄醫學大學牙醫學士
國立成功大學附設醫院家庭牙科專科訓練
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前南台灣牙醫植體醫學會副秘書長
ALL-ON-4 一日植牙全口重建專科醫師
WLMC 世界雷射醫學會專科醫師認證
APLI台灣世界臨床雷射醫學會研究員

1. 資料收集的數位轉型

傳統的矯正過程中，患者需進行多次拍攝口內照與口外照，再配合上印模或是口掃，以取得準確的牙齒模型與臉形外觀。然而隨著臉部掃描機的應用，患者只需進行一次非侵入性的臉部掃描與口腔掃描，就能獲得全面的評估資料。不僅提高了精確性，更簡化了整個資料收集的流程，有效提高整個診所工作流程。

2. 數據分析的優勢

結合隱形矯正和臉部掃描技術的數據，使得醫生與技師能夠進行更深入的分析。通過這些數據，醫生能夠精確地評估牙齒的移動情況、預測矯正的進展，並針對每位患者制定更加合適的治療計劃。

3. 改善治療效果的協助

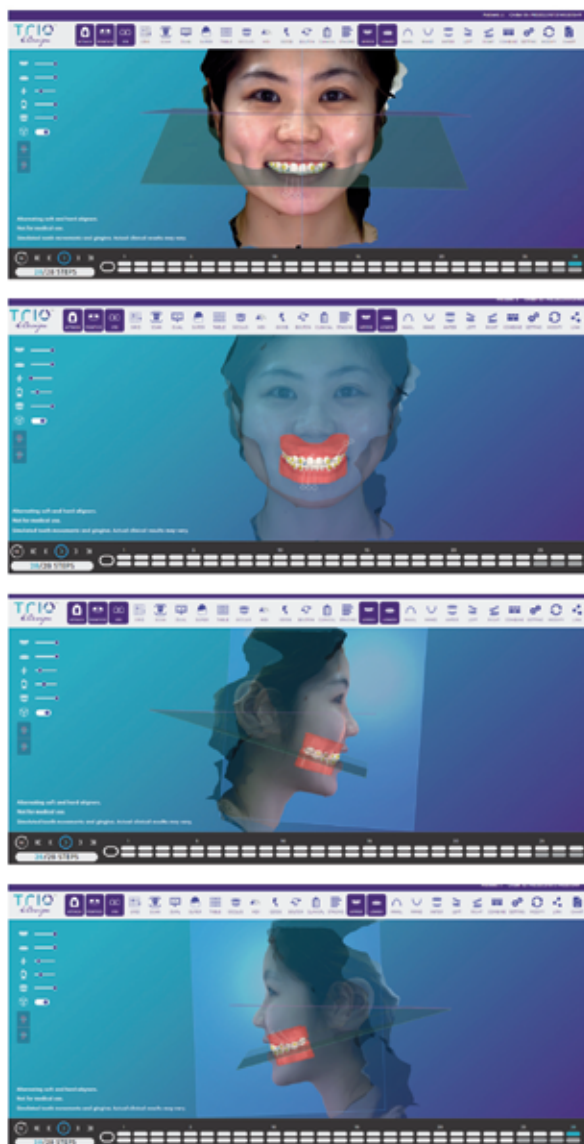
臉部掃描機RAYFace還可以幫助醫生更了解患者的面部結構，對於微笑曲線、臉部對稱性與臉形外觀的美感度，進一步提高隱形矯正的準確性與美觀性。這有助於減少治療期間的調整次數，提高治療的效果，同時也提供了更好的患者體驗。

4. 患者諮詢的進步

結合隱形矯正和臉部掃描技術，使得患者在治療前能夠更清晰地了解預期的治療效果。透過3D數位化的呈現方式，醫生可以與患者用直觀的方式，再依照與患者共同討論預期的治療結果，增強患者對治療的信心，提高治療的遵從性。

5. 持續創新的未來展望

隨著科技的不斷進步，隱形矯正結合臉部掃描機的應用還將迎來更多的創新。可能的發展方向包括更智能的數據分析算法、更精細的口腔模型呈現，以及更直觀的患者互動介面。



茶

TEA:

Nurturing Oral Health and Enhancing Overall Wellness

As the world's second most cherished elixir, eclipsed only by the purest essence of life itself—water—tea has ingrained itself in the hearts of connoisseurs worldwide. However, with the modern era's unwavering focus on holistic well-being, concerns about dental aesthetics and teeth stains have cast a shadow on tea's reputation. Together, we shall unravel the enigma, exploring whether tea is a harbinger of dental stains or a catalyst for greater health and vitality.

What are tea polyphenols?

Tea can be divided into six major categories: green tea, white tea, yellow tea, oolong tea, black tea, and red tea. These tea types differ in their production methods and the degree of oxidation of tea polyphenols. Tea leaves contain a substance called tea polyphenols, which have many benefits for both teeth and the body. The higher the fermentation level, the lower the content of tea polyphenols. Therefore, among the various types of tea, unfermented green tea has the highest content of tea polyphenols. When people refer to green tea polyphenols or polyphenol green tea, it is because green tea contains a significant amount of tea polyphenols.

What benefits can tea polyphenols bring to oral health?

Drinking tea can reduce the risk of tooth decay

Tea leaves contain a significant amount of fluoride, which can strengthen the tooth enamel's ability to resist acid erosion and promote remineralization. Tea can also inhibit the growth of bacteria in the oral cavity, making teeth less prone to cavities. It can prevent bacterial attachment to teeth and inhibit the bacteria that cause tooth decay. In general, various types of tea contain fluoride, which can prevent tooth decay and strengthen enamel. Green tea, in particular, possesses these properties and is often used in toothpaste, mouthwash, chewing gum, and other daily products or foods.



Green tea can effectively inhibit the bacteria that cause tooth decay.

Drinking tea can eliminate bad breath

Green tea can effectively combat bad breath, mainly due to the unique properties of flavonoid compounds found in green tea. Tea contains many components that have antibacterial and anti-inflammatory effects, such as caffeine, tea polyphenols, and tea catechins, which can destroy the bacterial cell structure and prevent their reproduction. These substances are more commonly found in green tea or black tea. Green tea contains catechins, which have antibacterial properties and can help kill periodontal pathogens. Using sugar-free green tea mouthwash before bedtime can also reduce the incidence of periodontal disease. These substances can also prevent periodontal disease as their pH levels help prevent the proliferation of bacteria in the oral cavity. Red tea has a pH value of approximately 5.5, while green tea has a pH value of approximately 5.9-6.2.

Don't let the benefits of tea turn against you!

If you enjoy drinking strong tea, you need to be careful! Drinking strong tea for a long time or excessively can easily result in tea stains remaining on the surface of your teeth, causing them to turn yellow or black. It is recommended not to consume excessive amounts of strong tea. Stubborn tea stains can only be thoroughly removed through professional teeth cleaning. To avoid affecting gum health and appearance, control the amount of tea you drink. It's even better to brush your teeth shortly after drinking strong tea, as it can reduce the risk of teeth turning yellow or black.





Oolong tea or stronger tea has the potential to cause teeth discoloration. Brushing your teeth after drinking tea can help prevent it.

Although the aforementioned highlights the numerous advantages of tea consumption, it is suggested that you pay attention to the timing of tea consumption. Green tea has the highest content of tea polyphenols. If you want to maximize the amount of tea polyphenols, it is best to steep green tea in boiling water and cover it. Let it sit for 20 minutes before drinking for better health effects. On the other hand, many people choose to drink tea after meals to aid digestion. While drinking tea after meals is good, it is recommended to wait 45 minutes to 1 hour after a meal before consuming tea. After food enters the stomach, the first step is to secrete a large amount of gastric acid. Drinking tea immediately after a meal can dilute the concentration of gastric acid, which, undigested, is then discharged into the duodenum, increasing the burden on the stomach, and leading to digestive disorders, affecting the absorption of iron elements in the gastrointestinal tract. Drinking strong and stimulating tea on an empty stomach before a meal can cause palpitations, dizziness, and decreased blood sugar, making one feel hungry. Therefore, it is recommended to drink black tea or Pu-erh tea, as the aroma of tea can stimulate the appetite and cultivate a good taste. After a meal, it is suitable to drink oolong tea or green tea, as these types of tea have a lighter fragrance and can bring a feeling of refreshment and relaxation after a meal. Regardless of before or after a meal, it is recommended to have a one-hour interval with mealtime.



The health benefits of drinking tea

If you have elderly people or individuals with hypertension at home, drinking tea may help you. Hypertension is a common condition among the elderly, and the pathogenesis of primary hypertension is viewed from two perspectives: one believes it is caused by sympathetic nervous system activation, while the other believes it is due to the control of renin and angiotensin. The tea polyphenols in tea inhibit the activity of angiotensin-converting enzyme, thereby reducing blood pressure. At the same time, drinking tea can reduce the risk of constipation. Constipation occurs when the intestines relax, leading to weakened intestinal contraction and motility. Tea polyphenols can enhance intestinal motility and promote intestinal health.

On the other hand, for individuals with diabetes, drinking tea is also an excellent choice. Diabetes is characterized by high blood sugar, dry mouth, and thirst, and drinking tea can effectively reduce blood sugar levels while providing relief from thirst and enhancing energy. Green tea is generally suitable for consumption, and the amount of tea can be slightly increased. You can steep tea multiple times a day to maintain a sufficient concentration of active ingredients in the body. Cold-water infusion is particularly effective in controlling blood sugar.

Green tea has many health benefits, but even though it is beneficial, it should not be consumed excessively.



Highlight of next issue:

Get ready for the next issue of our magazine as we embark on an extraordinary adventure to the tea paradise of Yunnan! Discover the secrets behind Yunnan's exceptional teas and indulge in the tantalizing flavors that make them so renowned. Join us as we explore the enchanting region of Xishuangbanna and take you on an unforgettable visit to the renowned Menghai Tea Factory. Stay tuned for an immersive experience into the world of Yunnan tea. Get your teacups ready, as this next issue is not to be missed!

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THANK YOU

for reading the 9th edition of the Dental Diaries. We hope you enjoyed your time with us. Please send us any valuable **advice, feedback or enquiries** via the following contact:
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Part Time DSA is invited.
Fresh grad or retired DSA are welcome. We offer flexible work hours, located nearby North Point MTR station. Interested parties pls call Ms Cheng at 2571 1336, or via email: manager@kcs.org.hk

醫思健康誠聘牙科助護，主要負責接待；接聽電話；協助醫生完成簡單診症工作及處理行政工作。有興趣者請發送您的完整簡歷以及最後和期望的薪酬至 recruit@echealthcare.com 或 WhatsApp 6655 6953

基督教聯合那打素社康服務誠聘兼職/全職牙科助理(大埔/天水圍/秀茂坪)，負責診所登記及接待、協助牙醫進行手術及簡單護理程序、清洗消毒儀器、資料輸入及訂購牙科用品等。每兩月按業績及表現發放獎金。14至18天有薪年假。員工及家屬醫療福利。有興趣者請發送您的完整簡歷及期望薪酬至 hr@ucn.org.hk

卓健醫療服務有限公司誠聘牙醫助護(將軍澳/中環/銅鑼灣)，主要負責負責協助牙科手術及治療，工具檢查/消毒，保持診所衛生清潔。有興趣者請發送您的完整簡歷至 hrd@qhms.com或致電9432 6660

Quality HealthCare
Full-time Dental Hygienist
(Lantau Island / TST). Interested parties please email your resume with your expected salary to hrd@qhms.com or WhatsApp 6110 7628.

兼職牙科助護 - 沙田。主要協助醫生為病人進行牙科治療和手術(有植牙手術經驗更好)。良好溝通技巧優先，良好中文，一般英語，待人有禮，具合作精神，守時，懂中英文電腦操作。待遇/工作時間：面議。工作時間：上午10時至下午7時半(1.5小時午飯)如有興趣此職位，請WhatsApp 5402 8850 或email identitydoctors@gmail.com

Full Time / Part Time Dental Officer (Welcome Fresh Graduates)

Working Location: Kwun Tong / Tai Po / Tin Shui Wai / Sau Mau Ping
Full time working hours: 44 hours per week or lesser would be considered as Part Time; Attractive Package with Basic Salary + Billing/ Surplus-based Incentive; - Good work-life balance with flexible working pattern. Interested please contact Ms. Chung at hr@ucn.org.hk

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