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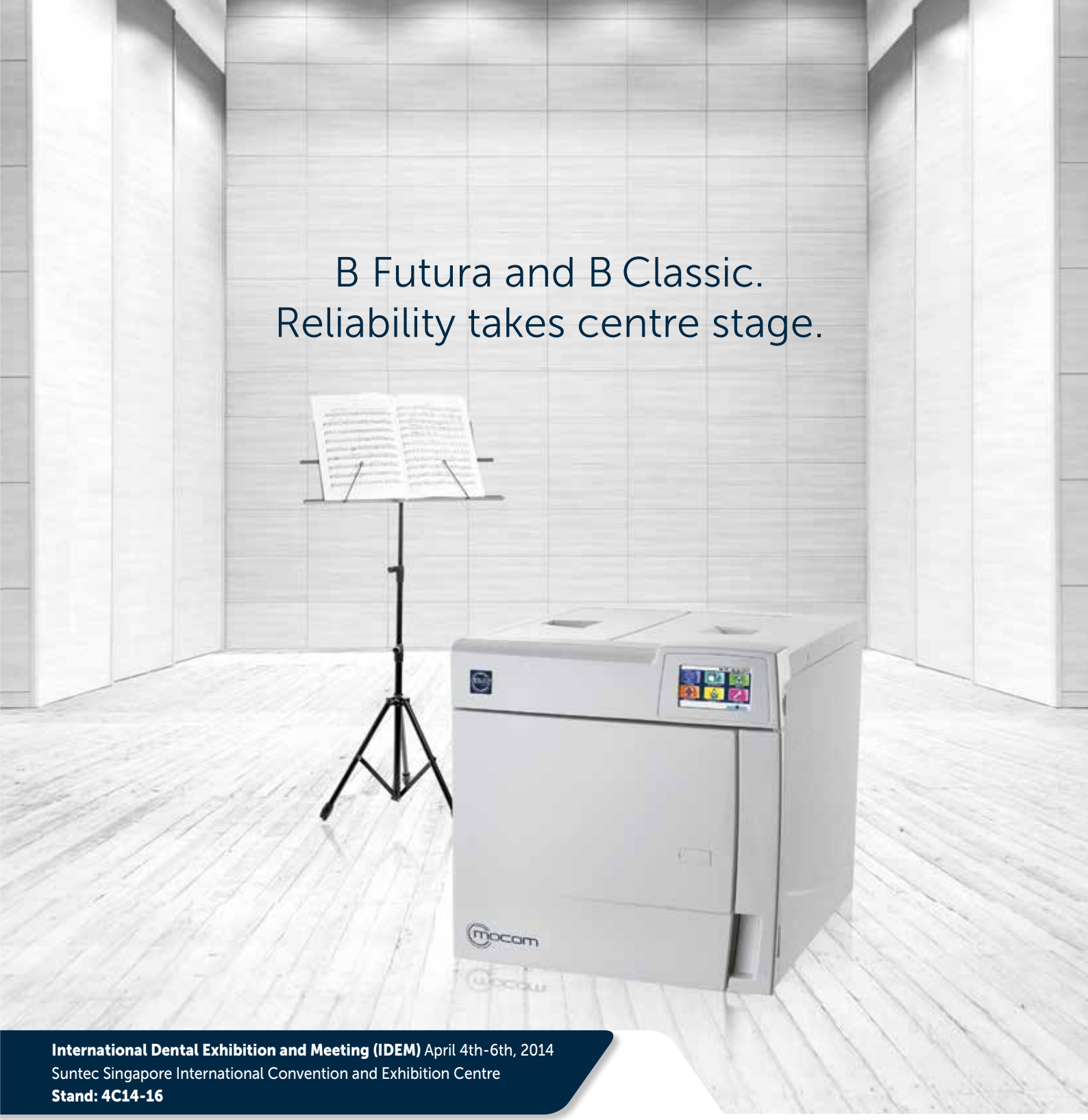

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Idem Singapore 2014

"In its eighth biennial edition IDEM Singapore is the "must-attend" event of the year for dental practitioners and professionals in the Asia-Pacific looking for the latest cutting edge technology …"

Platform switching in the treatment of Cleidocranial Dysplasia: a case report

"This report describes the treatment of a 31-year- old woman with cleidocranial dysplasia treated with expanded platform implants. All mandibular and maxillary teeth were extracted and porcine collagenized bone was used to cover the bone defects in both arches.…"

Focus on Singapore

"The Republic of Singapore consists of Singapore island, also named "Pulau Ujong", which is 42 km long and 23 wide and 63 smaller surrounding islands. It is located at the southernmost tip of the Malay Peninsula, in Southeast Asia..."

inews
INFODENT Special Edition IDEM 2014

Contents

Editorial

Dear Reader,

As editors of the magazine Infodent International, we have long been interested in the Asian market, that is growing at an uparalleled pace and is set to become the core of the global economic development in the near future.

Asia is investing heavily in healthcare and in oral health, and I am confident that at IDEM Singapore, the No. 1 dental event in the Asia-Pacific region, everyone will be able to materially perceive the entity of such increasing attention.

In occasion of IDEM Singapore we have prepared this special issue of **Infodent International, INEWS '14**, to provide dentists and dental professionals with useful scientific updates and insights in new products and dental technologies presented at IDEM. At the same time, we continue keeping a focus on trade and industry information as our distinguishing feature.

We would like to give our special thanks to KoelnMesse and IDEM organizers for letting this special INEWS '14 circulate at IDEM Singapore 2014 and we'll meet you at the next Infodent "INEWS" edition for IDS Cologne 2015.

I wish you a pleasant and successful IDEM Singapore 2014!

Baldo Pipitone
CEO Infodent S.r.l.

Cover page
Tri Hawk SA
28 rue Marguerite de Brabant
Luxembourg

Infodent International at IDEM Singapore 2014

Infodent booth at IDEM Singapore represents a traditional meeting point for the international dental industry.

As usual our booth is an animated trading platform: we are hosting companies from Italy, Japan, USA , Pakistan and UK. You are warmly invited to stop by the Infodent booth to meet our exhibitors and enjoy the friendly atmosphere. We will also be happy to provide you with full information on Infodent International activities and services.

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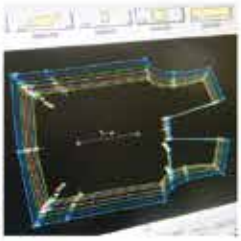

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IDEM Singapore 2014 is set to be bigger and better

IDEM Singapore – International Dental Exhibition and Meeting

In its eighth biennial edition IDEM Singapore is the "must-attend" event of the year for dental practitioners and professionals in the Asia-Pacific looking for the latest cutting edge technology and innovations in dental solutions and services. It runs from April 4th to 6th with a pre-congress day on April 3rd at the newly renovated SUNTEC Singapore International Convention and Exhibition Centre.

The trade exhibition **has already broken the previous edition's records** with a 30% increase in floor space to a massive 16,000sqm and with some 500 exhibitors showcasing their latest dental solution to the Asia-Pacific dental community. Every aspect of the dental industry is catered to, from high-tech dental chairs to patient record and practice management software, and from the latest advances in CAD/CAM technology to the world's first endodontic cement manufactured using nano technology. Visitors should be able to find everything they want and probably quite a few things they did not even know existed at IDEM Singapore 2014.

Over the years, IDEM Singapore has increasingly become the preferred platform for companies looking to **introduce their dental solutions to Asian buyers for the first time, to expand their business into Asia or seeking agent or distributors in the region.** This year, exhibitors such as Industrie Biomediche Insubri (IBI), Align Technology, Sun Medical, Delcam, Asa Dental, Cerkamed, Euronda and IONYX, among others, will debut their products to an Asian audience, for the first time.

Among the many technological advancements on display this year, digital dentistry is one of the areas that has captured a fair amount of attention among dental practitioners and the dental industry. Many of the visitors at this year's IDEM Singapore will be attending to see the latest digital technology from fields such as CAD/CAM, intraoral and extraoral radiography and computer-aided implant dentistry, so they can **gather all the information they need to make informed decisions about which technologies will best prepare their practices for the future.**

South Korea is an example of Asia's rapid adoption of new digital dentistry technologies in both dental practices and labs. Tim Mitchell, Delcam's Vice President of Healthcare Division predicts more Asian countries will follow suit, *"Last year more than 50 percent of Delcam's dental product sales were to Asian countries. With the predicted growth in the dental markets in South East Asian countries, we expect that percentage to increase over the next few years."*

IDEM Singapore has already established itself as the most important dental conference and exhibition in the Asia-Pacific region and as the eyes of the world increasingly turn towards Asia - especially the ASEAN region - to drive business growth. It's not just the West that is looking to Asia for new business opportunities; IDEM Singapore is also increasingly seen as the gathering point for different parts of the East to meet each other.

> **"Every aspect of the dental industry is catered to, from high-tech dental chairs to patient record and practice management software, and from the latest advances in CAD/CAM technology to the world´s first endodontic cement manufactured using nano technology."**

The two new country pavilions from China and Japan are indications of the growing interest in the developing ASEAN markets from both Eastern and Western manufacturers. The new Japanese pavilion will include returning exhibitors such as Kuraray Noritake Dental Inc, Trimunt Corp, Yamamoto Precious Metal Co., Ltd. and new exhibitors such as YDM Corporation, all under one roof. Other Asian pavilions include Singapore, South Korea and Taiwan who will be joining the big players from the West such as France, Germany, Italy, Switzerland, the United Kingdom and the United States.

First time IDEM Singapore exhibitor Sun Medical Company, is typical of IDEM's Asian exhibitors when it says that it is keen to increase its trade in the Asia-Pacific region. Company spokesperson Sukefumi Tanakubo, the assistant director of the International Department in the Global Business Strategy Division says, *"We are looking to break into the Malaysian, Indonesian and Chinese markets because there is much more room for expansion in the ASEAN region, compared to the European and American markets which have stabilised and become saturated."*

Another first time exhibitor is PerioChip, brought to IDEM Singapore by their new Asia-Pacific distributor Amedius Tec. Eric See, Amedius Tec's General Manager for Regional Business Development in Asia-Pacific, says, *"We consider IDEM Singapore the perfect platform for re-launching PerioChip to Singapore and ASEAN; it allows us to reach out to dental professionals from all over the Asia-Pacific at one venue."* PerioChip are so confident that IDEM Singapore is the right platform for them that to enhance their presence at the exhibition, they have also engaged one of the New Dentist Forum speakers, Dr Edwin Heng, to present a Brunch Talk, Targeting Chronic Periodontitis in Singapore – Directly, Effectively and Safely, which will look at PerioChip's role in both traditional periodontal work and increasingly with implants.

Joint first time exhibitors Cipta Dental Lab (CDL) and Creation Willi Geller International (CWG) also see IDEM Singapore as the gateway to Asia. CDL spokesperson Ms Tania Mirella explained, *"This is our first time exhibiting outside Indonesia. Recent advances in digital dentistry have made it possible for us to offer an export service; these days we can process digital impressions, model scans, and using various materials, mill a range of prosthodontic prosthetics for overseas clients."*

Austrian-based CWG, a dental porcelain and lab materials company, decided IDEM Singapore was the right choice for their first serious exploration of ASEAN markets. CWG founder Willi Geller says, *"Our strength lies in our oral design community, a group of dental technicians that spans the world and shares their expertise and experience."* One of the celebrities of that community, Mr Naoki Aiba, will be delivering a lecture at the Dental Technician Forum and will also conduct live demonstrations at the CWG exhibition stand.

It's not just exhibitor numbers which are growing, IDEM Singapore 2014 also looks like it will see more than a **10 percent increase in visitor and delegate attendance to over 8000** - clear evidence of the importance of the rapidly growing dental industry in the region.

The conference theme this year is **"Dentistry - The Future Is Now"** with its Scientific Programme focusing on the future of dentistry, addressing the different challenges in the various fields of dentistry. The Scientific Conference is also creating new milestones having introduced three new tracks, the New Dentist Forum, the Dental Technician Forum, and the Dental Hygienist and Therapist Forum. These new tracks have proved so popular that some, like the New Dentist Forum are sold out and a waitlist has been started for interested attendees while plans are underway to increase the present room capacity.

Delegates will also get to partake of a variety of lectures, courses and roundtable discussions conducted by leading voices of authority in dentistry. Ray Williams will be lecturing on the Oral Health-General Health Connection: A 2014 Perspective and moderating a roundtable discussion entitled Dental Implants the Forefront - 2014 and Beyond. Ken Hargreaves will be giving three SDA Masterclass Presentations entitled Regenerative Endodontics, Successful Management of Acute Dental Pain as well as Issues in Managing the Persistent Endodontic Infection. Gordon Christensen will be conducting a Pre-Congress Day lecture on Making Real World Practice Productive and Enjoyable. The latest session to be announced is Dr Barry Freydberg's, Oral Cancer Doesn't Make a Sound. Detect It – Before It Affects!

Visitors to IDEM Singapore can also look forward to a series of new innovations to help them maximise their time at the exhibition. The launch of a **new mobile app will provide attendees with the most up-to-date information** on the exhibition and conference, while at the event. With the introduction of an online exhibitors list with appointment scheduling capabilities, as well as a list of exhibitors seeking agents and distributors in Asia, visitors are encouraged to pre-book appointments with the exhibitors.

Singapore's popularity as both a MICE and tourist destination has soared in recent years with the opening of a myriad of leisure and tourist facilities. Delegates will definitely want to extend their visits to take in some of the sights and entertainment that the city has to offer including casinos, concert halls, theatres, world-class zoos, the breath-taking Gardens by the Bay, museums of art and history, and of course Singapore's world famous shopping and food centres.

For more information and to book your tickets, visit http://www.idem-singapore.com.

IDEM Singapore is jointly organised by Koelnmesse and the Singapore Dental Association.

IDEM Singapore Interview

Michael Dreyer Hires - Asia Pacific Vice President, Koelnmesse

What was the vision for IDEM Singapore in its early years?

When IDEM Singapore was launched in year 2000, it was managed out of our Germany headquarters in Cologne. It was designed to complement the International Dental Show (IDS) in Cologne, the world's largest trade show for dentistry and dental technology, by bringing our international exhibitors closer to the growing dental markets in the Asia-Pacific.

When the Koelnmesse Asia-Pacific headquarters was set up in Singapore in 2002, IDEM Singapore was one of the first events that we held. Our newly-minted presence in Asia meant that we could be closer to the markets to provide better support for our international customers looking to do business in Asia and to have greater control over the operations and management of the event.

Riding on our established global networks and knowledge in the dental trade sector, our objective was to set the groundwork for IDEM Singapore to eventually become the leading dental trade exhibition and conference in the Asia-Pacific. With the support of Cologne's sales networks, our teams in Asia, and the industry partners and governments, I am happy to say that this is a vision that has come to fruition and continues to be reinforced with every edition.

The rest of the world seems to be showing more interest in the Asia Pacific region these days, do you see that trend continuing?

According to a report by market research firm Global Industry Analyst, Inc, the international dental supplies market is expected to cross US$16 billion by 2015, with Asian markets expected to witness the highest growth rate. The growth of IDEM Singapore seems to be in parallel with the continued growth and interest in this region. And it's not just the West that is looking to Asia for new business opportunities; IDEM Singapore is also increasingly seen as the gathering point for different parts of the East to meet each other.

Exhibitors from the Asia-Pacific now make up close to 45% of the participation. We continue to welcome new group pavilions to IDEM Singapore, and these are increasingly coming from Asia, this year, with the addition of China & Japan. Our exhibitors are also seeing more interest from Asia. According to Delcam, last year more than 50 percent of their dental products were to Asian countries and they expect this trend to continue.

"The growth of IDEM Singapore seems to be in parallel with the continued growth and interest in this region. And it´s not just the West that is looking to Asia for new business opportunities."

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2014 will be the eighth iteration of IDEM Singapore, how has the conference and exhibition changed over the years? What are some of this year's highlights?

Occupying 2 entire levels at the newly-renovated Suntec Singapore International Convention & Exhibition Centre, the 8th edition of IDEM Singapore is the biggest we have to date. Since year 2000, the scale of our exhibition has quadrupled, with this year's exhibition occupying a massive16,000 sqm. International representation has also grown from 45% to over 80% and in 2012, exhibitors from Asia-Pacific alone made up more than half the international participation. The number of group pavilions at the exhibition also grew year after year, a testmony to the faith that these country and regional groups have in the strength of IDEM Singapore as a trading platform. This year, we welcome close to 500 exhibitors and 11 pavilions, from China, France, Germany, Italy, Japan, Singapore, South Korea, Switzerland, Taiwan, United Kingdom and United States.

"Visitors to IDEM Singapore can also look forward to a series of new innovations to help them maximise their time at the exhibition. The launch of a new mobile app will provide attendees with the most up-to-date information on the exhibition and conference."

What started off purely as a trade exhibition has also evolved, over the years, to include a world-class Scientific Conference, which we organise in partnership with the Singapore Dental Association. Bringing together the leading experts in their field, the Scientific Conference is a much anticipated event on the Asia-Pacific dental calendar, focusing on a different theme for each edition. This year's conference, with the theme "Dentistry – The Future Is Now", focuses on the future challenges of dentistry in the various fields. Over the years, we have also added enhancements to the main scientific program, including limited attendance workshops, pre or post congress lectures and masterclasses. This year, in an effort to address the needs of the entire dental team, we've added several new tracks - the Dental Technician Forum, the New Dentist Forum and the Dental Hygienist and Therapist Forum. Aside from a purely lecture format, we have also introduced a variety of new formats like roundtable discussion and interactive group sessions to keep the program fresh and to encourage greater engagement among the attendees.

Over time, we have also boosted our offering of pre-event and onsite promotional opportunities to help exhibitors reach out to the regional visitors at IDEM Singapore. From sponsorships of the event bags, badges, lanyards, receptions, digital advertising and online advertising, we now offer more than 20 options to choose from, with a multitude of combinations. The addition of the widescreen electronic billboard at the entrance of Suntec's Convention Centre, is one of the most visible and spectacular options available this year.

Visitors to IDEM Singapore can also look forward to a series of new innovations to help them maximise their time at the exhibition. The launch of a new mobile app will provide attendees with the most up-to-date information on the exhibition and conference, while at the event. While the partnership with Handy Singapore means that international participants can now have the option of access to a smartphone with unlimited 3G internet access, unlimited local & international calls, which also acts as a travel guide for Singapore. With the introduction of an online exhibitors list with appointment scheduling capabilities, as well as a list of exhibitors seeking agents and distributors in Asia, visitors are encouraged to pre-book appointments with the exhibitors. Onsite digital signages help make the event more sustainable by reducing the waste from producing printed signages, while it's interactive capabilities provide attendees with more information on the event, at their fingertips.

Where do you see IDEM Singapore going in the next 10 year?

We will continue to strengthening IDEM Singapore's position as the key platform for companies looking to launch new dental solutions into Asia, by continuing to bring in the key buyers from the region.

Building on the traction from this year's launch of new programs for new dentists, dental therapists, hygienists and technicians, we hope to improve our relevance to the community, to reach out to all segments of the dentistry value chain and enhance our offerings to the entire dental team.

IDEM Singapore strives to continue to serve the continuing education and dental community needs of the entire region. For future years, we are also considering to bring some of IDEM Singapore's speakers into various countries in the odd years.

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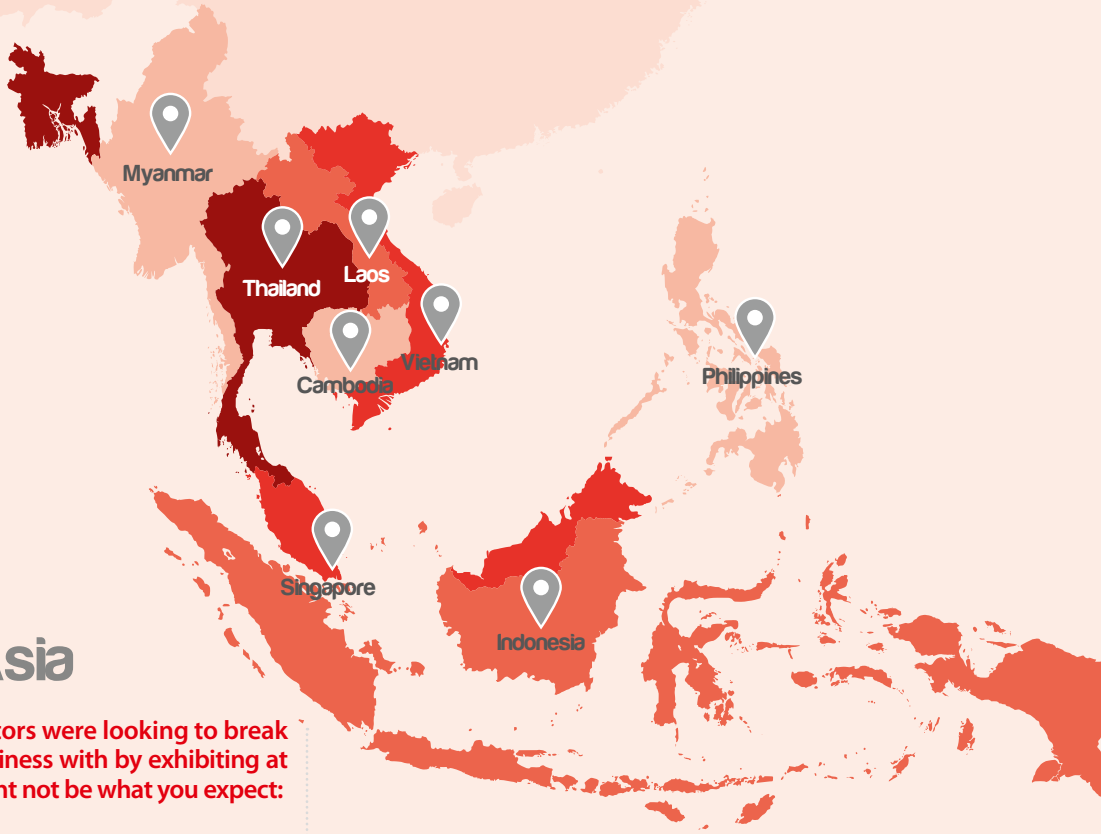
IDEM International Dental Exhibition and Meeting April 4 - 6, 2014 SUNTEC Singapore International Convention and Exhibition Centre - Booth 4B09

What exhibitors at IDEM Singapore 2014 think about Asia & Future Dental Trends

A straw poll of exhibitors attending the upcoming IDEM Singapore 2014 to be held in April revealed some interesting trends.

By: John Battersby, PR consultant for Bridges M&C, commissioned to undertake PR for the IDEM Singapore 2014 event
john@bridges-mc.com



Breaking into Asia

We asked which countries exhibitors were looking to break into or increase their existing business with by exhibiting at IDEM Singapore. The answers might not be what you expect:

Vietnam, Philippines, Myanmar, Cambodia, Indonesia, Thailand, Singapore and Laos were the hot favourites.

As **Medventiv's Export Manager,** Amandine Lamarre, explained, *"We have come to IDEM Singapore to meet and make deals with potential partners from the Philippines, Indonesia, Thailand, Malaysia and Singapore."*

Tim Mitchell, **Delcam's VP of Healthcare Division Asia** says, *"Delcam Is already well established in some parts of Asia, such as China, Taiwan, Japan and Korea, so now we are focusing our attention more on developing markets in SEA countries like Vietnam, Thailand, Singapore, India and Indonesia. Our presence at IDEM is an example of this strategy."*

Italian **company ASA Dental** say they are exhibiting at IDEM Singapore 2014 because, *"We are very interested in meeting visitors from the Philippines, Myammar, Laos, and Cambodia."*

Asian HQ

We asked: Where is the best place to setup an Asian HQ? The top three favourites by far, both for companies that had already set up Asian HQs and those thinking about it where:

Singapore and Guangzhou and Tianjin in China

Interestingly we found far more of the IDEM Singapore exhibitors from European rather than USA based companies already had or were thinking of setting up Asian HQs.

Predictions

All the IDEM Singapore exhibitors who responded to the survey predicted that Asian markets would make up significantly larger proportion of their sales over the next five to 10 years.

Medventiv's spokesperson said, *"While Europe will remain our biggest market we expect Asian countries to make up 25% of our business within the next five to 10 years."*

Arianna Cesselli the **Marketing and Communications Officer for Open Technologies,** a producer of 3d scanners and guided surgery software says they are very bullish about Asia, *"Although currently Asia only makes up 3% of our sales we expect that to have risen to 20% within the next five years."*

Italian company A**SA Dental's Export Area Manager Asia**, Diana Ciapponi says, "*The USA and Italy are aour top two markets at the moment but we expect Asia to take first or second place in the next few years, that's why we have opened a new commercial Branch in Tianjin China. The new hub will service China but also make it easier for us to service the rest of Asia. So we expect the 8% of sales Asia currently represents will now grow year after year."*

Ms Sylvia Chee from **Ultradent,** told us, *"Currently around 20% of our business is with Asia. The bulk is done with Japan at the moment but China will definitely take a predominant position in the next 3-5 years. And with other markets we think have huge potential like Thailand, Indonesia and South Korea included we expect Asia to contribute a much bigger slice of our total business in future."*

The next big thing

We asked: What will be the next big thing in dentistry?

Opinions were a little more divided on this topic than they had been on predicting business trends. Various aspects of digital dentistry featured strongly and there were a lot of predictions regarding 3D printing from breakthroughs in materials to dentists printing their own prosthesis at will; although even the most enthusiastic admitted that would not be for many years. However there were a few more original predictions.

Stefan Gefter, Aseptico's Director of I-OEM Sales thinks, *"More general practitioners will be placing implants as well as performing endodontic procedures."*

Cipta Dental Lab spokesperson Ms Tania Mirella foresees *"An increasing demand for lower cost aesthetic solutions like pre-fabricated veneers and shells among the emerging middle classes in many developing Asian countries."*

"Asian Dental labs were relatively slow to embrace digital technology, compared to their counterparts in the west in." Says Mr Mitchell, "However, in the past three years there has been a dramatic uptake of this technology among North-East Asian labs and I would expect this trend to be repeated among South East Asian labs if they wish to stay competitive in terms of price and delivery time."

"In the next few years, I think the next breakthrough would be the replacement of Gutta Percha and sealer in endodontic treatment." Dr Shin Yoojin from bioMTA predicted. "Gutta percha and sealer have big disadvantage when it comes to anti-microbial activity and sealing ability; I expect to see more bioceramic graft treatments being developed for intra-canal treatments."

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Immediate implants in extraction sockets with periapical lesions: an illustrated review

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• Abstract

Aim Immediate implantation has gained great attention since first proposed. Immediate implants in replacement of teeth with periapical lesion is, to date, an issue of discussion.
The aim of this study is to perform an illustrated literature review of immediate implants in sockets exhibiting previous periapical lesions.
Materials and methods A search on medline/EMBASE database was done for the literature review which is presented together with two case reports illustrating the state of the art of immediate implants on sockets with periapical lesions. Both cases are presented in areas with great aesthetic demands and a periapical lesion of considerable size. The two cases were conducted following strict granulation tissue removal and careful rinsing and pre-operative antibiotics, followed by good primary stability of the dental implant.
Results and conclusion Both cases represented successes in aesthetics and function, describing a successful protocol for immediate implant installation in areas exhibiting periapical lesions.

• Keywords

Bone grafting; dental implants; Immediate implant loading; Periapical disease.

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INTRODUCTION

Since the publication of the first papers describing the phenomenon of osseointegration and the very first clinical trials (1, 2), the interest on osseointegrated implant rehabilitation has grown exponentially. At first, for the treatment of totally edentulous patients, posteriorly for partially edentulous and single unit implants.
The classic protocol for the treatment with osseointegrated implants recommended 6 to 8 month between tooth extraction and implantation. This long waiting period is associated with an unavoidable bone loss that occurs after tooth extraction, which may lead to difficulties such as insufficient bone at the time of implantation. The insufficient bone leads to the use of angulated implants or the need of bone grafting procedures, increasing the morbidity, the treatment chair time and costs. At first, the main concern was with bone quality, and with the length and width of the site of implantation. With the advances on guided bone regeneration and grafting procedures, most of the problems related to the amount of bone has been solved or mostly solved, now the focus is mainly on aesthetics and amount of soft tissue increase or stability (3, 4).

Immediate implantation has gained attention in order to avoid the problems related to the time lag between extraction and implant placement. The technique was first described at 1976 (5) and since then has been the subject of scientific discussions. The difference between crestal bone level and success rate has been evaluated by a number of authors (6,7). The success of immediate implants has been reported as similar to delayed implantation, as suggested by the original protocol (7, 8, 9), becoming an attractive treatment protocol to reduce treatment time and the lag between implantations and the prosthesis.
Most of the reasons for tooth extraction include infected areas as a result of microbial and inflammatory diseases, such as periodontal disease, or periapical lesions from endodontic infections. Thus, an increasing interest has been shown on how immediate implantation would perform in infected sites. This illustrated review has the objective of reviewing current literature and to propose a predictable clinical protocol for immediate implantation on infected sites, presenting two clinical cases with 12 months of follow up.

LITERATURE ON IMMEDIATE IMPLANT PLACEMENT IN ALVEOLI WITH PERIAPICAL LESIONS

Periapical lesions are known as areas of inflammatory reaction due to the presence of pathologic agents on an infected root canal. On histologic examination it is possible to notice the presence of granulation tissue and inflammation with a dense neutrophil infiltrate near the apical foramen delimiting the bacteria on the apical part of the root canal. Thus, a number of authors consider the presence of periapical lesions a risk to the predictability of immediate implant success, contraindicating this treatment protocol (10-13). On the other hand, some authors showed, on histological studies, that immediate implantation in sockets with periapical lesions presented similar results to non-infected sites (14).

The first report of success on immediate implantation in sockets with periapical lesions was described by Novaes Jr and Novaes in 1995 (15). The protocol suggested by the authors included careful extraction and debridation of the socket (removing a thin layer of bone from hte periapical lesion area with chisels and curettes to remove any infected bone and to induce bleeding, thus favoring cell population of the graft) followed by copious irrigation with saline solution, by guided bone regeneration, primary closure and a systemic antibiotic regimen, starting 24 hours before implantation.

A prospective randomized study comparing the placement of immediate implants in sites with previous periapical lesions with delayed implantation was published in 2006. The investigation included clinical and radiographic parameters, microbiological culture from samples collected from periapical lesions and Resonance Frequency Analysis (RFA) measuring implant stability. The authors reported a success rate of 92% for immediate implants and 100% for delayed implant placement. Although there was a numerical difference, there was no significant statistical difference (16).

A study with 34 subjects compared the clinical results achieved by implant placement in periapical lesion sites and healthy sites. One year after the implant placement, there was no difference between the treatment protocols. This study showed that immediate implant placement in periapically compromised teeth is not contraindicated (17). A retrospective study with 922 implants (285 placed in periapical infected sites and 637 in healthy sites) compared the success rate on both treatment protocols: success was defined as successful osseointegration, restoration and absence of periimplantitis. Success rates were 97.5% for the test group (periapical infection group) and 98.7% for the control group (healthy group). Therefore, the authors considered the placement of immediate implants in periapically infected sites a safe and a viable treatment protocol (18).

Another retrospective study comparing implant placement into infected sockets and on pristine sites with a mean time of function of 64 months reported a similar success rate (98.1% for infected sites and 98.2% for pristine sites) for both treatment protocols (19).

CASE REPORTS

Case 1

The upper right central incisor was indicated for extraction due to an extensive periapical lesion diagnosed from periapical radiographs (Fig. 1). Due to favorable clinical characteristics, tooth replacement with an immediate implant-supported crown, flapless surgery and immediate provisionalization was planned. On the first visit all compromised sites were recorded and a scaling and root planning was performed. Oral hygiene instructions were given in order to perform excellent plaque control. The gingival marginal position and apico-coronal crown dimensions were established with a diagnostic waxing, considering gingival thickness and architecture. A Cone Beam CT scan was performed in order to obtain a tridimensional model (Fig. 2, 3).

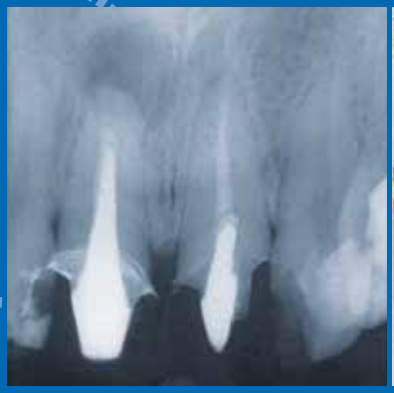

FIG. 1 Periapical rx showing extensive periapical lesion on the upper right central incisor.

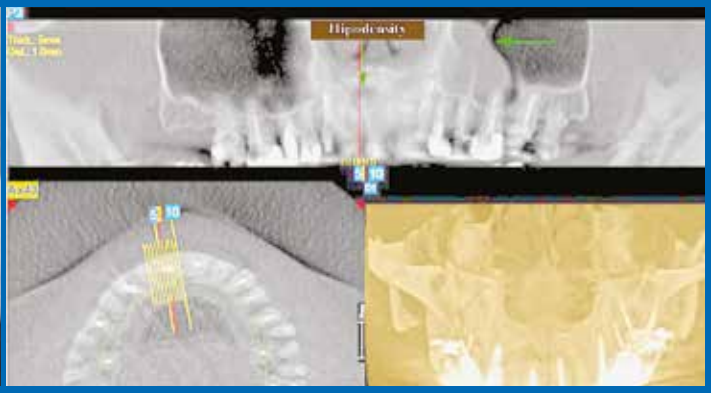

FIG. 2 ACT scan was used as a diagnostic tool to plan the immediate implant.

Thus, it was possible to fabricate a surgical guide and a precise reverse treatment planning. A surgical simulation (Fig. 4) on the 3D model to choose and individualize the prosthetic component and the confection of a provisional crown before the surgical phase was made. The surgical phase was performed with local anesthesia and the prescription of Amoxicillin 875 mg for 10 days, starting 24 hours before the surgical procedure. Flapless tooth extraction, with the least amount of trauma as possible, was performed and the socket was carefully debrided as suggested by Novaes Jr and Novaes (15) (Fig. 5-10). After irrigation with saline solution the socket walls were inspected and the vestibular wall and socket morphology were considered suitable for immediate implant insertion. The surgical guide was placed (Fig. 11, 12) and the protocol for socket preparation was performed, in accordance to the manufacturer's instruction, for a 4.5 mm diameter and 15 mm length implant (XiVe S Plus, Dentsply Implants, Mannheim, Germany). The implant was placed 1 to 1.5 mm from the buccal bone wall and anchored on the nasal cavity floor to obtain primary stability (Fig. 13).

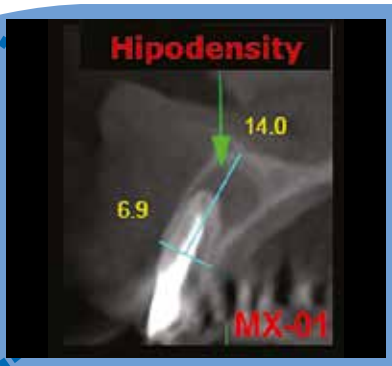

FIG . 3 CT can with the sagittal view showing the hypodensity (green arrow) and the bone height available for implant anchorage.

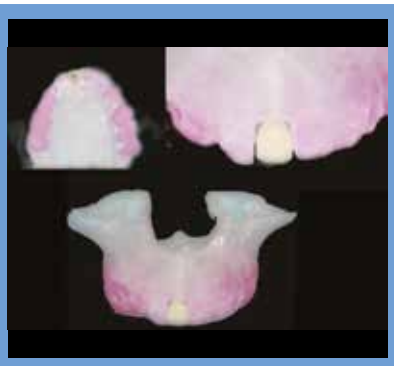

FIG . 4 Three dimensional model fabricated from the CT scan and the surgical and prosthetic planning.

FIG . 5 Clinical aspect of the tooth before extraction.

FIG . 6 The pre-existent metalloceramic crown was removed before extraction. Frontal view.

FIG. 7 Occlusal view of the tooth without the prosthesis, before extraction.

FIG. 8 Tooth extraction with the periotome, minimally invasive approach.

FIG .9 Tooth extracted with the periapical lesion attached.

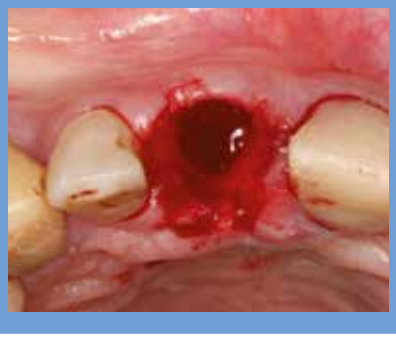

FIG. 10 Occlusal aspect of the socket after tooth extraction. There was minimal surgical damage to adjacent soft tissue.

Although the coronal alveolar wall was in good condiditon, the apical portion was too thin, due to the periapical lesion, and a grafting material (Biogran, Biomet 3i, Palm Beach, FL- USA) was placed with an apical access (Fig. 14, 15). A provisional crown was placed after the implant and grafting procedures. A zirconia abutment (Cercon, Dentsply Implants, Mannheim, Germany) was connected to the implant and a metal-free ceramic crown was cemented (Fig. 16- 18). At 1 and 3 months post-operatively, a periapical radiograph was performed (Fig. 19, 20), and clinical photos were taken (Fig. 21, 22). During this period the left central incisor was lost due to trauma.
After 6 and 12 months a CT scan was made to ensure treatment success and resolution of the periapical lesion (Fig. 23-25).

FIG . 11 Occlusal view from the 3D model and the tridimensional position of the implant carefully planned.

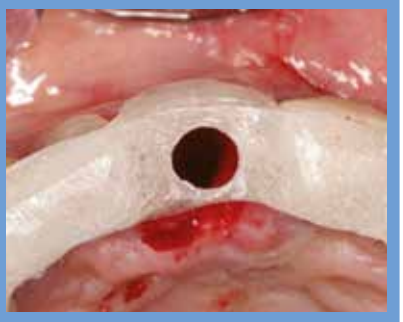

FIG . 12 Occlusal view of the surgical guide showing the optimal prosthetic position for the implant.

FIG. 13 Occlusal view of the implant after insertion.

FIG. 14 The full flap preserving coronal attached gingiva, soft tissues and aesthetics. Thick buccal bone on the apical aspect required a graft to avoid fenestration.

FIG.15 Graft (bioactive glass) in position.

FIG. 16 Primary closure achieved and provisional crown in position.

FIG.17 Final aspect of the provisional crown after surgery.

FIG .18 Periapical radiograph on the immediate post-operative period.

FIG. 19 Periapical radiograph taken 1 month after surgery

FIG. 20 Periapical radiograph taken 3 months after surgery with the zirconia abutment.

FIG.21 clinical buccal aspect of the zirconia abutment.

FIG. 22 clinical occlusal aspect of the zirconia abutment.

FIG.23 Final aspect of the prosthetic crown 6 months after prosthesis installation.

FIG. 24 cT scan 12 months after surgery.

FIG. 25 Periapical radiograph 12 months after surgery.

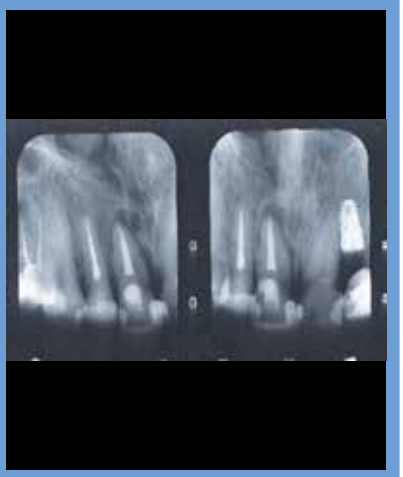

FIG. 26 Periapical radiograph showing extensive periapical lesion on the upper right incisor.

Case 2

The upper right incisor was indicated for extraction due to an endo-perio lesion diagnosed by periapical radiographs (Fig. 26). Based on defect configuration analyzed by a CT scan examination (Fig. 27), an immediate implant with an immediate provisional crown was planned. The tooth was extracted with a previous antibiotic prescription (Amoxicillin 875 mg-Potassium Clavulanate 125 mg combination, twice daily, for ten days, starting one day before the procedure). After tooth extraction a 5.5 mm diameter and 13 mm length implant (XiVe S Plus, Dentsply Friadent, Mannheim, Germany) was inserted 1 mm apically to palatal bone wall (Fig. 28-30). On the same day, a 4.5 mm diameter prosthetic component was installed and a provisional crown was placed, performing a platform switching strategy (Fig. 31). After 9 months, a metalloceramic crown was placed (Fig. 32). At 12 months, a control periapical radiograph and CT scan was requested (Fig. 33), confirming the treatment success.

DISCUSSION

In order to maintain aesthetic and functional conditions with implant therapy, it is important to preserve alveolar bone dimensions, gingival margin position, gingival thickness and keratinized gingival tissue. Thus, aiming to reduce alveolar process resorption and treatment time, immediate implant placement in fresh extraction sockets has been largely proposed (7, 8, 9,2 0). However, most of the reasons for tooth extraction include infected areas caused by tooth fracture, periodontitis or endodontic infection. It is still controversial and there is no scientific or clinical consensus about the immediate implant indication in areas of chronic periapical infected sites, in addition, few clinical data are available. Some clinical reports have suggested that history of endodontic or periodontal infections is a predictive risk marker for future implant infection and failure (21, 22, 23). This hypothesis may be justified by the possibility of soft and hard tissue contamination located near the implant surgical bed. This led most clinicians to avoid immediate placement of dental implants at infected sites and to consider periapical infection a contraindication for immediate implantation (25).

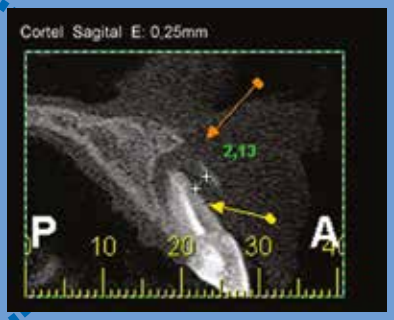

FIG.27 cT scan showing buccal bone wall fenestration on apical aspect of the tooth

FIG. 28 clinical aspect of the tooth before extraction.

FIG.29 A full flap was reflected. Implant was positioned subcrestaly to the bone crest.

FIG. 30 clinical aspect of the surgical area after flap closure.

FIG.31 Provisional crown in place.

FIG. 32 Final clinical aspect after the metalloceramic crown was cemented.

On the other hand, placement of immediate implant in chronically infected sites may have successful outcomes and is not a contraindication in all cases. A prospective controlled clinical study comparing immediate implants in sites with or without periapical lesions failed to achieve differences between the two protocols. The failure index did not increase in the presence of periapical lesions when the implant achieved primary stability (14, 15, 17). More recent data of a retrospective study (418 implants placed in sockets with periapical lesions) with a minimum of 2 years follow up showed a survival rate (98.1%) similar to implants placed on pristine sites (98.2%) (27).
A protocol option to achieve a successful outcome was proposed by Novaes Jr and Novaes in 1995 (15)

,consisting in the elimination of the etiological factors and to create favorable conditions for tissue healing. In the first step the patient must receive oral hygiene instructions and scaling and root planing in order to perform good plaque control. After one week, a reduction of soft tissue inflammation can be noted and the surgery in association with the use of antibiotics (for 10 days, every 8 hours, starting 24 hours before surgical procedure) (15) can be performed. Atraumatic flapless tooth extraction is encouraged, and the socket must have 4 intact walls and in sequence should be carefully debrided (14, 15). The contaminated soft and hard tissues removal by meticulous debridement (15, 25), combined with pre- and postoperative antibiotics will establish a favorable basis for bone healing and osseointegration (15). Some other factors must be considered: the extent of bone resorption and the angle of the implant for a satisfactory aesthetic restoration (15). The implant should be placed in the optimal aesthetic position, if not, the procedure should be delayed and a GBR should be considered in order to avoid future aesthetic complications.
In case of compromised buccal bone walls, in order to preserve horizontal alveolar bone dimensions, association of Guided Bone Regeneration procedures can create adequate aesthetic conditions avoiding visualization of a gray band, from the implant, due to buccal wall fenestration. However, it is possible to perform a flapless approach in cases in wich the buccal bone fenestration is expected. Planning a GBR procedure with an apical approach, as shown in this paper, is only possible with a CT scan as a diagnostic tool before tooth extraction. The preservation of the coronal buccal wall crest will permit stability of the gingival position, avoiding black spaces and gingival recession or implant abutment exposure, giving an optimal aesthetic result. According to a recent systematic review, immediate implant placement into sockets with previous periapical pathology is not contraindicated when a protocol of systematic debridement and cleaning is performed. The same publication reported that the use of bone graft and the use of systemic antibiotics, although controversial, is encouraged to avoid possible post- operative complications at the regenerated site (28). More recently, a controlled clinical trial with aesthetic and radiographical outcomes after 5 years was published (29). This study compared immediate implants placed in sockets exhibiting previous periapical lesions (n=11) with sockets without this condition (n=15), both groups received GBR concomitant to implant installation and received 5 days of systemic antibiotics (Amoxicillin 750 mg) and were instructed to rinse with chlorhexidine 0.2% (period not informed). The implants were loaded 3 months after installation. The results achieved did not demonstrate differences between both groups on the parameters evaluated. None of the immediate implants installed in sites with previous periapical lesions exhibited retrograde periimplantitis during the 5 years of follow up (29).

This protocol cannot be used in cases where an acute infection persists even when the pre-surgical antibiotic is used, the immediate implant placement should be postponed, the tooth removed and the acute infection treated (25). It is indicated for experienced surgeons since the correct debridement of the granulation tissue, avoiding violation of noble tissues, accurate guided bone regeneration procedures, correct 3D implant positioning and primary stability are important factors for treatment success.

CONCLUSION

The proposed protocol used in the two cases reported, presented a successful outcome, achieving elimination of the infection and immediate dental implant placement with good functional and aesthetic outcomes. This is possible thanks to a meticulous execution of the proposed treatment protocol.

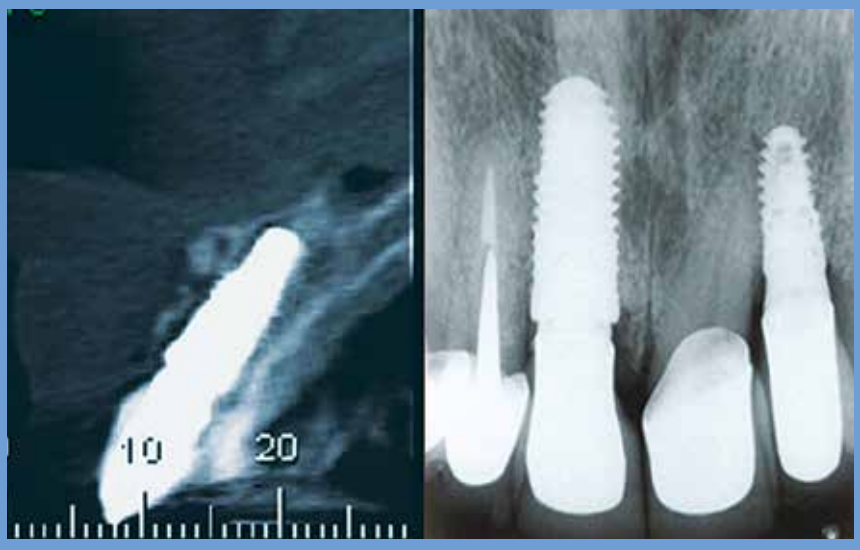

FIG.33 Periapical radiograph and cT scan of the area 1 year after prosthesization.

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Platform Switching in the Treatment of Cleidocranial Dysplasia: a case report

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• Abstract

Background Cleidocranial dysplasia is a very rare occurrence, its incidence being 1: 1,000,000.
Case report This report describes the treatment of a 31-year- old woman with cleidocranial dysplasia treated with expanded platform implants. All mandibular and maxillary teeth were extracted and porcine collagenized bone was used to cover the bone defects in both arches. six months later, four expanded platform implants were used to restore the mandibular arch, but one of them failed before the prosthesis was placed. In the maxillary arch a complete denture was relined and placed in the maxilla. The definitive mandibular restoration was delivered 3 months after surgery.
Conclusion since early diagnosis of cleidocranial dysplasia is essential for choosing the appropriate treatment approach, clinicians should be aware of its characteristic features.

• Keywords

Cleidocranial dysplasia; dental implants; dental prosthesis; edentulism.

INTRODUCTION

Cleidocranial dysplasia (CCD) is a rare autosomal condition affecting bones, generally the calvarian but also the clavicular bone, that undergo intra- membranous ossification.

CCD was first described by Pierre Marie and Paul Sainton in 1897 (1), since then, over 1000 cases have been documented in the medical literature, which termed the condition cleidocranial disostosis (2). It has since been known as CCD in recognition of its underlying pathology as a generalized skeletal dysplastic condition (2). The pattern of inheritance is usually autosomal dominant, although it has been suggested that between 20% and 40% of cases represent new mutations (3). The disorder is caused by mutation in the CBFA1 gene, on the short arm of chromosome 6p21 (3). The prevalence of cleidocranial dysostosis is estimated one per million, without sex or ethnic group predilection (4).

Patients with CCD tend to be of short stature and have proportionally large heads with pronounced frontal and parietal bossing of the skull. They frequently have ocular hypertelorism, a broadly based nose, and a depressed nasal bridge. The ability to approximate the shoulders anteriorly is related to clavicular hypoplasia and is the classic diagnostic sign of the disorder (5). Moreover, unerupted permanent teeth and supernumerary teeth are sometimes found. Underdevelopment of the maxilla and relative mandibular prognathism are common. Prolonged exfoliation of the primary dentition, unerupted supernumerary teeth, and the irregularly and partially erupted secondary dentition result in occlusal anomalies. The presence of the second permanent molars together with the primary dentition and wide spacing in the lower incisor area are typical dental signs (5).

The dental abnormalities associated with it present a remarkable challenge in treatment planning. Early diagnosis is extremely important to give the patient the best treatment options. Patients with cleidocranial dysostosis require a team approach with good communication and cooperation from the patient. Timing of the intervention is critical, and several surgeries might be required. There are many difficulties in the early diagnosis of CCD because most of the craniofacial abnormalities become obvious only during adolescence (5).

Treatment options for the management of impacted teeth are separated into four categories: observation, intervention, relocation and extraction (6). In regions where no supernumerary teeth are formed, eruption may also be improved by removal of the primary teeth and surgical exposure of the underlying permanent teeth. Conventional orthodontic treatment and eventually autotransplantation of teeth may still be necessary in the future, but it can be anticipated that the new strategy, with much earlier intervention, can reduce the extent of surgical and orthodontic interventions, which have previously been of extremely long duration, uncomfortable to patients and often of limited success (7). Therapeutic options include extraction of all teeth followed by the fabrication of dentures or a crown sleeve coping overdenture (8), autotransplantation

(7) of selected impacted teeth followed by prosthetic restoration, or removal of primary and supernumerary teeth followed by exposure of permanent teeth that are subsequently extruded orthodontically.
The use of implants in a patient with CCD to support a removable overdenture has been documented (9). However, there is a paucity of documented cases using implants to support a fixed prosthesis with this population. Likewise, immediate loading and function have not been studied in these subjects. Although CCD is a bone disorder caused by a defect in the gene that guides osteoblastic differentiation and bone formation, the use of implants in such cases seems logical, since there have been documented cases of bone formation around orthodontically erupted teeth in patients with CCD (10).

The aim of this article is to report a rare case of a woman with CCD who was restored in the mandibular and maxillary arches with endosseous implants supporting fixed prostheses.

CASE REPORT

Patient history

A 31-year-old woman with a history of CCD originally presented to the General and Implant Dentistry Department, Faculty of Medicine and Dentistry, University of Murcia (Spain) with the chief complaint of an ill-fitting mandibular and maxillary partial denture. She was missing both clavicles and had the facial anomalies typical of this condition. The patient was in good general health, with no known allergies or sensitivities to medications. Throughout her life, she had been self-conscious about the appearance of her mouth and could not comfortably eat or talk with peop1e.

Clinical evaluation and diagnosis

Examination of the oral cavity revealed multiple over- retained permanent teeth and one supernumerary tooth, particularly in the anterior maxilla and mandible on the right and left side (Fig. 1).

On evaluating the panoramic radiograph, the classical signs of CCD were immediately recognized (Fig. 2). The patient had 42 teeth in her jaws. Some of the teeth were erupted but most of them were unerupted and the supernumerary tooth mimicked a premolar in shape. Gonial angles on both sides of the mandible were missing and maxillary sinuses were underdeveloped.

At the initial visit, on the radiograph the patient presented with the following teeth in her maxilla: four primary teeth (55-53-63-65), two permanent teeth erupted (16-26) and 14 retained teeth (11-12-13-13-15- 16-17-18,21-22-23-24-25-27-28). She had the following teeth in her mandib1e: five primary teeth (74-73-72-82- 83), one permanent erupted tooth (35) and 15 retained teeth (38-37-36-34-33-32-31-41-42-43-44-45-46- 47-48). The patient had 1 supernumerary tooth in the right side of the mandible.

Comprehensive clinical and radiographic examinations were performed. Diagnostic casts were articulated at an improved occlusal vertical dimension, permitting laboratory technicians to fabricate provisional dentures.

FIG. 1 Clinical aspect of the oral cavity of the patient.

FIG. 2 Panoramic radiograph: the classical oral signs of dysplasia could be observed.

Teeth extractions

All the patient's teeth were extracted (Fig. 3, 4). Following the extractions, alveoloplasty was used to harvest bon that was then regrafted mixed with collagenized porcine bone (MP3, Tecnoss dental, Pianezza, TO, Italy) into the osseous defects and covered with collagenized membrane (Fig. 5).

Primary closure of the flaps created a biologic seal immediately prior to the relining of the provisional removable prostheses. The patient returned for suture removal fifteen days after the surgery and relining of the provisional prostheses using a temporary denture retaining material (Ufi Gel SC, VOCO, GMBH, Cuxhaven, Germany).

FIG. 3 Mandibular arch before teeth extractions.

FIG. 4 Mandibular aspects following teeth extractions.

FIG. 5 Grafting of autologous bone mixed with collagenized porcine bone into the bone defects.

FIG. 6 Panoramic radiograph following mandibular implants placement.

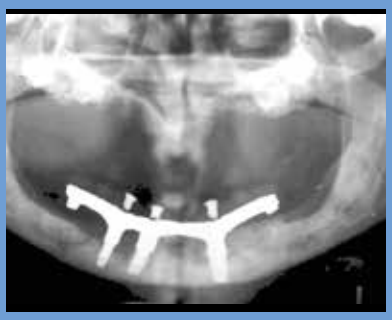

FIG. 7 radiographic aspect of the metal-reinforced mandibular prosthesis.

FIG. 8 Clinical view of the delivered prosthesis.

Surgical placement of implants in the mandible
Six months after the extractions, the patient presented for the placement of dental implants in the mandible. Local anesthesia was administered and a mandibular arch crestal incision was made bilaterally from second molar to second molar. A biopsy was taken from the grafted area to be analyzed. Three 4/5/4-mm implants (Biomet 3i, Palm Beach Gardens, FL, USA) and one 5/6/5 mm implant were placed in the front area between both mental nerves (Fig. 6). Following the surgery, the patient was provided with postsurgical instructions, namely cold therapy, standard medications (anti-inflammatory pain medication, steroids to control swelling, antibiotics, and chlorhexidine rinse), and diet restrictions, which included a strictly soft diet for 8 weeks.

Definitive prosthesis for the mandible
Three months after surgery in the mandibular arch, the final impression was made using heavy body/light body polyether impression material (Impregum Penta, 3M, St.Paul, MN, USA). A master cast was created by placing abutment analogs of the modified impression copings within the fixed prosthesis. The maxillary denture was made using alginate impression material. The interocclusal registration and the provisional restorations were used to articulate the maxillary conventional denture against the mandibular master cast. The laboratory then began fabrication of the definitive metal-reinforced mandibular prosthesis (Fig. 7). The definitive prosthesis was then delivered after 15 days (Fig. 8).

DISCUSSION AND CONCLUSION

In the literature cases reporting the use of expanded platform implants in patients affected by CCD are rare. The described protocol offers an effective treatment option for patients with CCD and eliminates the long-standing struggle with ill-fitting, uncomfortable, or unsightly removable prostheses. The entire reconstruction took 9 months from the time the patient first presented at the General and Implant Dentistry Department, Faculty of Medicine and Dentistry, University of Murcia (Spain).

The radiographic evaluation of patients is the most important and reliable means to confirm the diagnosis, since radiological findings of CCD are pathognomonic, i.e. broad sutures, large fontanels persisting into adulthood, numerous wormian bones and unerupted teeth (1, 3). Despite a lack of evidence-based data to support the potential for osseointegration around titanium implants in a patient with CCD, there was evidence that bone remodeling and osseointegration occurred in this patient despite the fact that this genetic defect affects osteoblastic activity (9).

For a more definitive understanding of the specific biologic and biochemical mechanisms involved in CCD, long-term studies are needed. Although the favorable outcome with this individual patient demonstrates the potentially successful management of similar congenital anomalies, additional clinical research is necessary for universal application. Therefore, based on this patient report, it may be concluded that osseointegration had effectively stabilized the implants.

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Red Orchid, Singapore's National Flower. Singapore's Botanical Garden.
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Focus on Singapore

Author: Michela Adinolfi

Founded as a British trading colony in 1819, Singapore is a parliamentary republic. Its English name derives from the Malay word "Singapura", which means Lion City.

Twilight in Singapore
warrengoldswain / istock

Country profile

The Republic of Singapore consists of Singapore island, also named "Pulau Ujong", which is 42 km long and 23 wide and 63 smaller surrounding islands. It is located at the southernmost tip of the Malay Peninsula, in Southeast Asia. The Strait of Johor divides it from Malaysia on the north and the Strait of Singapore from Indonesia (namely the Riau Islands) on the south.

With a total area of only about 700 sqkm, Singapore is one of the smallest nations in the world, although this hasn't prevented it from becoming one of the most powerful economies in Asia.

Singapore has an equatorial climate, very humid and warm, with average daily temperatures ranging from 23°C to 31°C. Being subject to two annual monsoon seasons (December to March and June to September), average annual precipitations reach a high 2.3 meters.

A key challenge is represented by land scarcity, that obliges public authorities to carefully plan and manage the distribution of housing, business and leisure areas, including a commitment to keep enough parks and green areas available to citizens.

Population

As of June 2013, Singapore has 5.4 million inhabitants, 4.2 million of whom are citizens or permanent residents, while an impressive 42% of the population is made up of foreigners, one of the highest percentages in the world. Approximately three quarters of the population belongs to the Chinese ethnic group, while 13% are Malay and 9% Indians, plus other smaller minorities. Although English is the current business and administration language and it is also commonly spoken in the country, there are other three official languages, namely Chinese, Malay and Tamil.

Singapore's society is multi-racial and diverse, but integrates its different cultural components in a harmonious and entertaining way, reflecting its being a cosmopolitan blend of Asian and European elements.

Economy and trade

Singapore has been a main commercial and trade hub in Southeast Asia for centuries and is now more than ever a dynamic centre, deeply integrated in international trade. In the nineteenth century the British Empire gained control of Singapore and granted several tax exemptions that attracted a large number of immigrants and tradesmen, becoming a flourishing commercial colony. After a short period of Japanese occupation during World War II, Singapore returned in British hands until 1963, when it declared its independence from the Commonwealth, becoming the Republic of Singapore in 1965.

Singapore is a high-income economy, with a marked business-friendly regulatory environment and the World Bank ranks it amongst the world's most competitive economies. Since independence, the country's GDP has grown averagely 7.7% per year and per capita GDP by 5.4%.

Due to the efforts undertaken to industrialize the economy, already by the end of the 1960s the manufacturing sector had become the leading contributor to the country's growth. Together with Hong Kong, South Korea and Taiwan, Singapore was known as an "Asian Tiger", a newly industrializing country with strong growth of manufacturing and exports and raising per capita income.

Major industries include electronics, financial services, oil drilling equipment, petroleum refining, pharmaceutical manufacturing, processed food and beverages, rubber products and ship repair. Since late 1990s and all 2000s, the services sector has expanded to join manufacturing as the other pillar of Singapore's economy. Especially high value-added businesses find the innovative and competitive environment suited to their activity and have therefore increasingly shaped the country's business profile.

Compared to the previous decade's growth rate, the projected annual 3.3% growth until 2018 may perhaps seem low, but after the contraction and turmoil of the period 2009 – 2012, it reflects the more developed stage of Singapore's economy that is now focusing on increasing productivity and innovation, making growth more sustainable and inclusive. Currently, unemployment rate remains as low as 2%.

The government has set a program named "Continuing Education and Training (CET) scheme" targeting the improvement of working skills. Special attention is paid towards enabling the ageing population keep trained and qualified to remain active and productive in a job environment that is made more complex by the presence of a high number of immigrant workers. In this perspective, changes to the retirement legislation and the introduction of schemes that help companies to employ older workers by offsetting some of the costs involved in training and job redesign have resulted in more older workers remaining in the workforce.

Moreover, public policies are also focusing on supporting small and medium enterprises with the aim of increasing their productivity, through a National Productivity Fund that supports a variety of initiatives such as the Productivity and Innovation Credit and the enhanced Capability Development Scheme.

"Singapore is a high-income economy, with a marked business-friendly regulatory environment and the World Bank ranks it amongst the world´s most competitive economies."

Three Buddhas Singapore
haydenbird / istock

Singapore is of course a strategic location for foreign firms looking to establish their presence in Asia, since it offers first-class infrastructure and communication network. The country's importance as international trade hub is evident by the fact that over 5,000 multinational companies have established an office there, attracted not only by the favourable tax regime, but also by the well developed connections and port facilities. In fact, Singapore's port is the world's second in terms of total shipping tonnage, as well as the world's busiest transshipment port. It is connected to 600 other ports in over 120 countries across the six continents. Moreover, the country's position at the entrance of the Strait of Malacca makes it a crucial hub in the sea route between the Indian Ocean and the South China Sea.

Air transportation is equally developed, with the Changi International Airport linking to about 200 cities in 60 countries and approximately 5,400 weekly flights. Due to the easiness of transferring goods, around 6,000 logistics providers, including 21 of the world's top 25 third-party logistics providers have been attracted by Singapore. Adding to this the 99% broadband network coverage and the reduced tariff and non-tariff barriers, it is easily understandable why companies use Singapore as a trading base and often as their regional headquarter.

Foreign investment accounts for a relevant share of the total investment in the country. It provides resources and funds to propel the development of an industrial and manufacturing base and subsequently of the network of services driven by the economic growth. Foreign companies are well established in high-end manufacturing and product development, service delivery, marketing and distribution operations, while some sectors such as broadcasting and domestic media, specific professional services, multi-level marketing, property ownership and retail banking are still relatively restricted.

The government is trying to shift investments towards innovation, by reducing taxes on research and development related activities and allocating funds or grants to innovation and R&D projects, especially in the areas of environmental and water technologies and interactive and digital media.

Foreign trade

The dependence on external suppliers and the long-established trading position has led Singapore gain a considerable degree of economic openness and freedom. Government policies have further strengthened such vocation, by pursuing an export-oriented economy that encourages not only inflow but also outflow of goods and investments, pushing it towards economic openness, free trade and free markets. As a part of this strategy, Singapore has established Free Trade Agreements (some of which are yet to enter into force) with many States, including Australia and New Zealand, the European Free Trade Association (Switzerland, Norway, Iceland and Liechtenstein), the European Union (2013), Japan, the Republic of Korea, India, China, the United States, Peru, Panama, Costa Rica, Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, the United Arab Emirates, Jordan.

On a regional scale, Singapore has concluded the Trans-Pacific Strategic Economic Partnership Agreement with Brunei, Chile and New Zealand, while negotiations are underway to expand it to Australia, the United States, Malaysia, Vietnam, Peru, Canada and Mexico through the Trans-Pacific Partnership Agreement.

Singapore is also a member of the Association of South East Asian Nation (ASEAN) and within this framework it is strongly committed to achieving an ASEAN Community by 2015. Moreover, it is also member of UN, Commonwealth, Asia-Europe Meeting (ASEM), Indian Ocean Rim Association (IORA), the Asia Pacific Economic Cooperation (APEC) forum and East Asia Summit (EAS), besides supporting the Forum for East Asia-Latin America Cooperation (FEALAC). Furthermore, Singapore has signed 35 investment guarantee agreements (IGAs) to help protect investments made by Singapore-based companies in other countries against non-commercial risks.

Pro-business regulatory environment

According to the IMD Business School, Singapore ranks 5th in the World Competitiveness Rakings 2013; together with the US and Canada, it boasts "very stable and enduring competitiveness models that rely on long-term advantages such as technology, education and advanced infrastructure".

Moreover, Singapore has developed an articulated regulatory framework to protect intellectual property (IP) rights. This is particularly evident by the fact that the World Intellectual Property Office (WIPO) set up its first Asian regional office in Singapore.

Among the favourable policies for business, there are reduced corporate tax rates, low employers contribution rates and maximums fixed for office rental rates. In 2012 the World Bank ranked Singapore as the world's easiest place to do business in its "Doing Business" Report.

Healthcare delivery

Singapore enjoys relatively high living and health standards, safe water supply and sanitation and high quality medical services. The main threats to the population's health are non-communicable diseases such as cancer, coronary heart diseases, strokes, pneumonia, diabetes, hypertension and injuries. Many of those are lifestyle-related diseases, depending from factors such as smoking, obesity, physical inactivity and alcohol consumption.

According to government agency EDB, Singapore has a first-class healthcare infrastructure while spending less than 4% of GDP on healthcare. Health services are provided according to an integrate care model guaranteeing universal coverage for Singaporeans with multiple layers of care, based on six regional healthcare systems, centered on a regional hospital working with primary, intermediate and long-term care services. The healthcare facilities network, comprising public hospitals, private hospitals and specialty centres, provide a complete spectrum of clinical services from basic health screening to dental surgery and quaternary care.

The main public health institutions are the SingHealth and National Healthcare Group, while in the private sector, local healthcare groups include the Parkway Group, Raffles Medical Group and Thomson Medical. International health services players have also established their regional or international headquarters in Singapore, including Joint Commission International, IMS Health Asia, International SOS, Fortis Healthcare International, the International Diabetes Federation (IDF) and the Healthcare Information and Management Systems Society (HIMSS).

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Primary healthcare services are normally provided by general practitioners in polyclinics and private medical clinics, with a share of 80% for private practitioners and 20% for practitioners in government polyclinics. On the other hand, 80% of hospital care is delivered in the 8 public hospitals (comprising 6 acute general hospitals, a women's and children's hospital and a psychiatry hospital), while 20% is provided privately.

According to Ministry of Health figures, in 2012 there were a total of 10,756 hospital beds in the 25 hospitals and specialty centres in Singapore and a total of 10,225 doctors, resulting in a doctor to population ratio of one every 520 inhabitants. 34,507 nurses, including midwives, give a ratio of 1 : 150 and the 1,645 dentists means that there is one dentist every 3,230 people.

According to an article released by the Harvard School of Public Health, Singapore's approach to health care can be taken as an example of how to combine a free market system with a strong government action in ensuring an efficient allocation of resources that helps lower income population groups to access health services. The Singaporean compulsory health savings plan, called Medisave, ensures that a system of savings is in place to subsidize healthcare delivery in proportion to the household income, requiring even public services to be privately contributed, even in shares that go from a very low contribution for poor households to almost entire out-of-pocket coverage of treatment in the public facility for wealthier ones. Besides the Medisave, the compulsory savings program for workers called the Central Provident Fund can be used to pay for housing, resulting in 85% of Singaporeans owning their home, which also reflects on their ability to pay for medical services.

White pagode
FrankvandenBergh y / istock

Moreover, the government invests heavily in medical education and prevention programmes and it also regulates insurance company prices and policies.

From an industry perspective, Singapore is an interesting place to network with healthcare institutions and develop new products and solutions. The government agency EDB states that Singapore has established platforms embedded within the healthcare service providers to allow healthcare players to work with industry partners from various industries such as IT systems, medical equipment, pharmaceuticals, nutrition and consumer lifestyle to co-develop and test-bed new products, solutions and business models.

With its strong foundation in basic biomedical sciences research and translational clinical research as well as track record in scientific and clinical excellence, Singapore becomes an ideal base to design, develop, test-bed and launch new healthcare solutions and systems for successive expansion into the Asia Pacific and international markets. Furthermore, the country's pro-IP environment has already attracted more than 30 leading biomedical sciences companies.

New hospitals

In 2014, the new Ng Teng Fong General Hospital, as well as the Integrated Building for Changi General Hospital and St Andrew's Community Hospital will open, while two new community hospitals in Jurong and Yishun, to be co-located with the new Ng Teng Fong General Hospital and Khoo Teck Puat Hospital respectively, will open in 2015.
In 2018, the Sengkang General Hospital is to be completed together with a co-located community hospital, while the Outram Community Hospital will open by 2020. This means that by 2020, there will be 4,100 more hospital beds across Singapore.

Healthcare fast facts and figures

- There are **4,385 establishments in the Health Services** sector that generate some S$9.6 billion (US$7.5 billion) for the economy. In total, they hire 69,028 workers.

- The **20 Hospitals** generate about S$5.3 billion (US$4.1 billion) and employ 42,019 workers

- The **2,565 western clinics** generate S$2.9 billion (US$2.2 billion) and employ about 16,890 workers

- The **641 non-western clinics** generate S$108 million (US$85.3 million) and employ 2,016 workers

- The **679 dental facilities** generate S$476 million (US$376.2 million) and employ 3,400 workers

- Other **480 medical facilities** generate S$806 million (US$637 million) and employ 4,700 workers

Dental services

public dental care is available through the National Dental Centre and in some polyclinics and hospitals. The private sub-sector has the second largest number of establishments, but compared to other healthcare sub-sectors, it's the second smallest contributor by revenue, as well as the second lowest for number of workers. However, it also boasts the highest average annual remuneration per employee, the third highest value added per worker and the second highest profitability ratio.

Average dental business costs

Remuneration of employees	42.2%
Goods & materials purchases	11.3%
Depreciation	5.2%
Renting of premises	5.1%
Professional & business services	4.9%
Work given out	4.1%
Maintenance of transport, machinery & equipment	1.8%
Utilities	1%
Postage & telecommunications	0.6%
Government taxes & fees	0.7%
Others	23.0%

Source: MOH

Dental market

According to a report by Euromonitor, the improving dental health awareness of Singaporeans and the ageing population are the main factors influencing the demand for dental care. Approximately 45% of population is reported to be visiting the dentist at least twice a year. Cosmetic dentistry is popular and also attracts wealthier visitors from neighboring countries where dental facilities are not offering standards as high. Especially in the most densely populated areas, it happens to see that the majority of patients are foreigners.
While most of the dental equipment and apparatuses are imported from US, Germany and other European countries and Japan, consumables and lower-end supplies mainly come from China, Malaysia and Taiwan due to lower price.

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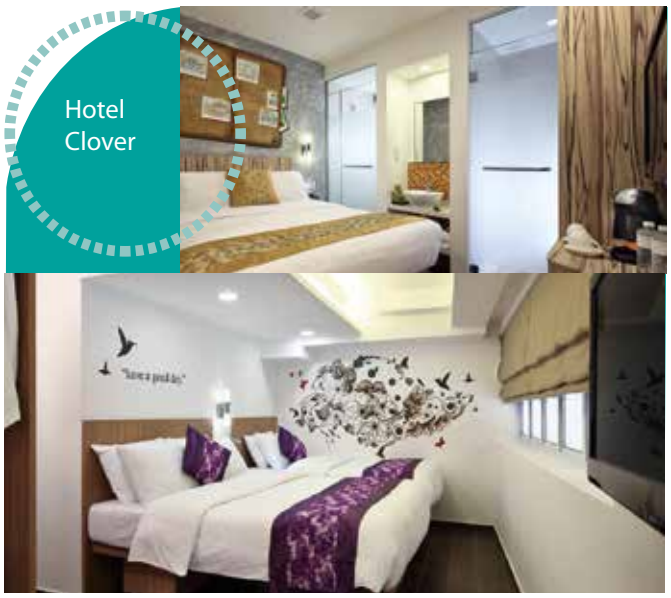
Art comes to life on the walls of Hotel Clover The Arts

Hotel Clover The Arts is a new art-themed boutique hotel situated in Chinatown, Singapore. This 6-storey and 44-room hotel, slated to open in March 2014, builds on its conviction to create a unique arts experience through its individually-themed rooms. The rooms reflect nature's beauty, vivid chromatics as well as Singapore's evolving urban and cultural landscapes. They also pay tribute to the hotel's symbolic four-leafed clovers, which are a representation of faith, hope, love and luck. Hotel Clover The Arts invited students from different design schools to participate in a mural competition for 19 rooms. The winning piece, by Devina Chandra, Vini Kurniawan and Angel Jayayanti of Raffles Design Institute, was of a vintage travel journal encapsulating iconic attractions of Singapore. Nurul Ameerah Binte Abdul Latiff of Temasek Polytechnic who created a vintage black and white comic-style piece clinched second place. The third prize belongs to Daniel Ade Christianto and Lediana of Raffles Design Institute who conceptualised 'The Blossom Island" Independent professional artists were also commissioned to create art for Hotel Clover The Arts, including local artist Ceno2, who founded creative art collective Artkhalytis (a group of dedicated graffiti artists with formal training in fine art) and artists from Life Art Society.

About Hotel Clover The Arts: The result is a visual feast of creativity and a wide range of design aesthetics sure to excite even the most casual of art lovers. Designed in styles as diverse as retro kitsch, urban street art, Pop Art vibrance and line art minimalism, each room in the hotel creates its own distinctively unique experience, playfully blurring the line between sleeping and waking. Hotel Clover The Arts is part of the Hotel Clover chain owned by Singa Group of Companies.

Hotel Clover The Arts
58 South Bridge Road Singapore 058689
Tel: +65 6439 7088 • Fax: +65 6439 7089
www.hotelcloverthearts.com (Coming soon)

Hotel Clover



Marrison@Bugis

Marrison@Bugis is located at 103, Beach Road (junction of Beach Road|Tan Quee Lan Street) and comprised of 96 guest rooms with modern and contemporary furnishings. It is situated within the city and short walking distance to the Bugis MRT (EW12), Downtown MRT (DT14), Bugis Shopping District, Suntec Exhibition & Convention Centre, Raffles City Shopping Centre|MRT and Raffles Hospital. It is also near to the Marina Bay Sands Convention Hall, MBS Casino, Gardens By The Bay, The Esplanade and Singapore Flyer. There are many F&B outlets serving local and international cuisines around the hotel's vicinity.

Please feel free to contact me should you require any room rates or sales information pertaining to both of the Marrison Hotels. For all reservation matters, do liaise directly with the Reservations|Front Office Team at reservations@marrisonhotel.com or frontdesk@marrisonhotel.com|Tel: +65 63339928 (Bugis)|Tel: +65 62990164 (Desker). We look forward to be of service to you and your guests at the Marrison Hotel.

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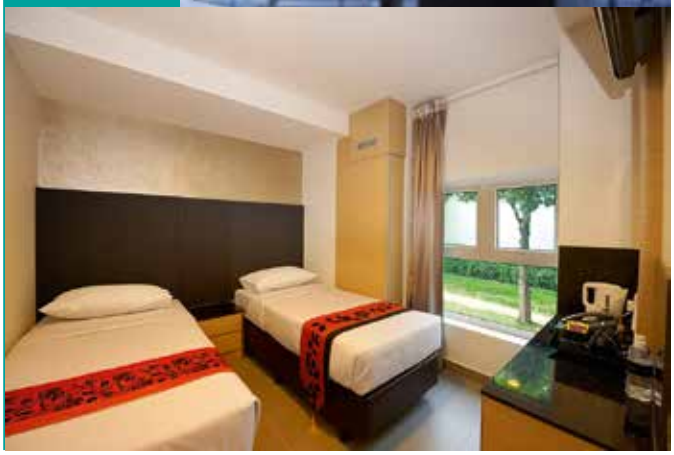


Optimize your daily workflow with SOREDEX® imaging systems

DIGORA® Optime – built on the strongest heritage in the industry

SOREDEX launched the world's first intraoral imaging plate system DIGORA® in 1994. As we now celebrate the 20th anniversary of DIGORA®, we are proud to introduce the 5th generation system; the all new DIGORA® Optime. The concise, easy to use design of the latest DIGORA® Optime makes intraoral imaging more intuitive and efficient than ever before.

DIGORA® Optime is designed to improve workflow in the dental office with considerable time-saving in the imaging process. The learning curve is short since the images are taken just like conventional intraoral film. The time savings start when the image is taken; the imaging plate (PSP) covered in a protective cover and disposable hygienic bag, is placed in the patient's mouth in exactly the same way as conventional film. DIGORA® imaging plates are thin, flexible and cordless. These features make them far easier, faster and more accurate to position in the patient's mouth than wired, bulky and rigid sensors. The system itself is intuitive and quick to learn and has exceptionally fast scanning times. There are no buttons to press, just insert each exposed imaging plate one-by-one. The plates are ready for re-use immediately after scanning to further speed up the workflow. It goes without saying that DIGORA® Optime produces uncompromised and optimized image quality thanks to the wide dynamic range of the plates and intelligent image processing.

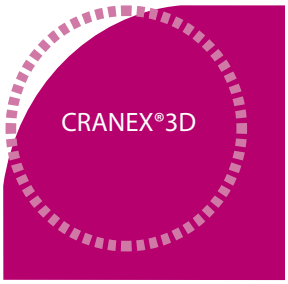
Every DIGORA® Optime system since 1994 is built on DIGORA® design heritage and our in-depth understanding of diagnostic and workflow needs of dental professionals around the world. We have over 40,000 DIGORA® installations worldwide, and many of the systems from the 1990's are still in daily use. This proves the reliable and maintenance-free design of the new DIGORA® Optime system is built on the strongest experience in the market.

CRANEX®3D – adds a new dimension to your diagnostic work

CRANEX® 3D is a high quality dental imaging system with panoramic, optional cephalometric and Cone Beam 3D imaging programs. Its versatility offers dental clinics one of the most dynamic and intuitive imaging systems available; the system is designed for the needs of demanding dentists, implantologists, orthodontists, endodontists, oral surgeons, imaging centers and hospitals. CRANEX® 3D provides imaging professionals with excellent capabilities for accurate diagnostics, treatment planning and preparation of small surgeries. With two selectable fields of view and four resolution selections, CRANEX® 3D combines diagnostic accuracy, fast imaging and low dose. SOREDEX® Advanced Reconstruction Algorithm SARA technology allows the clear detection of small anatomical details like small fractures and endodontic root fillings and SOREDEX® Metal Artifact Reduction SMAR reduces the artifacts caused by metals and other dense radiopaque objects in the 3D image. The CRANEX® 3D Endo program is directed especially at endodontists who require very high image resolution. The Endo imaging program brings accuracy and specificity designed for endodontic imaging with 85 µm voxel size and SMAR (90 kV, 10 mA). EasyScoutTM and PickPointTM enable accurate FOV positioning in all dental and facial areas.

Adjustable rigid temple support and motorized chin rest ensure high stability with all facial FOV positions during 3D imaging, minimizing movement artifacts. With its unique patient positioning and free positioning of field of view, CBCT imaging workflow in CRANEX® 3D is smooth and fast in all dental and facial areas. The CRANEX® 3D panoramic grows with a clinic's needs – you can start with the panoramic system and upgrade later on with the CBCT or cephalometric programs. Its robust design makes CRANEX® 3D a desirable choice for dentists due to its' excellent quality, reliability and long service life. If your clinic already has a relatively new digital 2D system and you need to add 3D imaging capabilities to your diagnostic work, you can purchase CRANEX® 3D as "3D only" version.

Visit our website at www.soredex.com to learn about the easy, smart and efficient DIGORA® Optime and how CRANEX® 3D can add a new dimension to your diagnostic work. You can also find us in IDEM, Singapore: Level 6, # 6K-06.



About us

For nearly 4 decades, SOREDEX has been designing and manufacturing easy to use and innovative imaging solutions for dental and maxillofacial professionals. The SOREDEX portfolio covers a wide range of applications from intraoral, panoramic and cephalometric, and extending to large field-of-view cone beam CT for demanding ENT and CMF diagnostics. Close co-operation with imaging professionals gives us deep insight into incorporating true diagnostic value to clinical work and patient care. Our products are known for reliability, simplified workflow and excellent image quality. We are committed to fulfill these promises today and in the future. SOREDEX is the proud developer and manufacturer of the famous brands CRANEX®, DIGORA®, SCANORA® and MINRAY®.

Optimize your daily worklow with SOREDEX® imaging systems

CRANEX® 3D

High quality imaging solution for CBCT, Panoramic and Cephalometric imaging

Top performance and ease of use characterize this imaging solution for demanding dental clinics. CRANEX® 3D combines panoramic imaging with optional Cone Beam 3D and Cephalometric solutions. Superior image quality both in 2D and 3D elevate your diagnostic work to new dimensions.

DIGORA® Optime

Intraoral imaging plate system for dental radiography

Intuitive, easy to learn, smart and efficient diagnostic tool especially for relatively small and new clinics. Familiar, film-like workflow offers superior image quality automatically, fast and repeatedly. The system supports all intra oral formats (0,1,2,3 and 4C).

SOREDEX

www.soredex.com

Welcome to visit our booth at **IDEM**, Level 6, # 6K-06 to hear how we can help you to optimize your daily workflow

Digital imaging **made easy™**

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Unique blade designs for exceptionally fast cutting

Tri Hawk is a world leader in the manufacturing of single use dental burs. The University of California rated Tri Hawk burs as the **best on the market in terms of performance versus price**. The ADA (ADA product review summer 2006) also rated Tri Hawk as the **top manufacturer of single use dental burs for cutting efficiency.**

The Tri Hawk team works together to help support and expand our customers' practices and businesses. Once you try a Tri Hawk bur you will not want to use any others.

We realize that the term "connoisseur" is normally associated with such things as fine wines or rare cigars. In fact we're pretty sure that no one else has dare combine the words "bur" and "connoisseur." Certainly our competitors haven't. But then again, their burs aren't designed or produced like Tri Hawk burs.

Admittedly, to some dentists, "a bur is a bur". Our loyal users, however, tell us that our designs deliver a combination of cutting speed, strength and safety they're never experienced with any other burs.

So what would you call such discerning dentists? Unless you have a better idea, we'll stick with **"bur connoisseurs".** And we'll keep doing our best to earn their loyalty.

"It's fun to get something in your practice that actually works as well as they say it does! The Talon burs cut through metal and porcelain better than any specialty bur or diamond I've used in almost 40 years of practicing dentistry. They cut through crowns three to four times faster than any other burs, yet they don't chatter and so I can control them easily. When I'm cutting dentin,they make my standard low-power hand-piece cut as if I'm using a high-power air-bearing hand-piece." ***Edward W. Usko, DDS Toledo, OH***

I received your trial pack a few days ago. Your #330 bur performed just as advertised! It cuts through cast metal crowns like a "hot knife through butter" Truth in advertising is so refreshing. ***Robert D. Thomas DDS***

"We find your TriHawk TC burs very efficient in cutting tooth & metal too. Removal of old amalgam fillings with your TC burs is such a breeze! The long shank surgical TC burs are excellent for dividing wisdom teeth & others as they cut teeth like butter. It is indispensable tool during any surgical extraction! Price wise, rather reasonable. Do hope you can give us a better price when buy in bulk" ***Dr Chai Hock LOU, Lou Dental Centre, Kuala Lumpur, Malaysia***

"This might be difficult to believe, but, truly, if there is only one bur that you need to do most aspects of your dentistry, it is this one. The Tri Hawk Talon12." ***Dr Hesham El-Essawy, 94 Harley Street, London***

Thank you for providing impressively sharp and reliable cutting instruments for the dental professionals. I have been using Talon burs for over five years now and I have not used any better bur yet. ***Johan Nordblom, DDS. Manager, Kronen Tannklinikk, Lillehammer, Norway***

"Trihawk not only makes the best burs for the money- they make the best burs! The sharpest, fastest cutting, most comfortable and "easy on the eyes" for the clinician. Plus the big bonus- they are economical !
Dr, Mark L. Cannon, Long Grove, IL

"For the past few years, I have been a loyal purchaser of the TriHawk burs. Why? From a clinical perspective the TriHawk burs are my #1 go-to bur for crown sectioning, or cutting burs for restorative and initial prepping for prosthodontics. I love efficiency and I am always on the hunt to find a product that delvers fast, reliable and superior results...so far these burs are my daily favorite. I also love the fact that they are extremely affordable, so much that I use them as a single use bur." ***Dr.Natalie Archer, D.D.S, Rosedale Family Dental Care and Runnymede Dental Care, Toronto, ON***

3 + 1

Selective laser sintering (SLS) implants:
results from a 2-year prospective multicenter study

Carlo Mangano MD, DDS 1; Paolo Mastrangelo DDS 2; Giuseppe Luongo MD, DDS 3; Adriano Piattelli MD, DDS 4; Francesco Mangano DDS 1*

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2 Private Practice, Bari, Italy
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Until now, dental implants have been traditionally produced by machining titanium rods, with subsequent post-fabrication processing, such as application of surface treatments or coatings 1. Using conventional methods, it is not possible to fabricate implants with a functionally graded structure, possessing a gradient of porosity perpendicular to the long axis, a high porosity at the surface and a high density in the core.

In the last few years considerable progress has been made in the development of rapid prototyping (RP) methods, including selective laser sintering (SLS). Selective laser sintering (SLS) is a timesaving and costless forming procedure in which a high power laser beam is focused on a metal powder bed and programmed to fuse particles according to a computer-assisted-design (CAD) file, thus generating a thin metal layer.

Apposition of subsequent layers gives shape to a desired three-dimensional (3D) form with the need of minimal post-processing requirements2-6.

This prospective multicenter study evaluated the survival rate and the implant-crown success of single-tooth, SLS titanium dental implants (TixOsR, Leader Italia, Milan, Italy), after 2-year of functional loading.

Materials and methods: The SLS implants were made of master alloy powder (Ti-6Al-4V), with a particle size of 25 to 45 micro-meters, as the basic material. Processing was carried out in an argon atmosphere using a powerful Yb (Ytterbium) fiber laser system with the capacity to build a volume up to 250 x 250 x 215 mm using a wavelength of 1,054 nano-meters with a continuous power of 200 W, at a scanning rate of 7 meters per second; the size of the laser spot was 0.1 mm.

Between June 2009 and June 2011, all patients referred to 7 different clinical centers for treatment with dental implants were considered for inclusion in the present study. At the 2-year scheduled follow-up examination, several clinical, radiographic and prosthetic parameters were assessed. Success criteria included absence of pain, sensitivity, suppuration, exudation; absence of clinically detectable implant mobility; absence of continuous peri-implant radiolucency; distance between the implant shoulder and the first visible bone contact (DIB) < 1.5 mm; absence of prosthetic complications.

"In the last few years considerable progress has been made in the development of rapid prototyping (RP) methods, including selective laser sintering (SLS)."

Results: 175 implants (90 maxilla, 85 mandible) were placed in 129 patients (68 males, 61 females; aged between 24-75 years). The sites included anterior (n=56) and posterior (n=119) implants. The prosthetic restorations were all single crowns. After 2 years of functional loading, the overall implant survival rate was 98.8%, with two implant losses (maxilla: 98.8%; mandible: 98.8%). The mean distance between the implant shoulder and the first visible bone contact (DIB) was 0.5 mm (± 0.2). Among the surviving implants (173), 6 did not fulfil success criteria, for an implant-crown success of 96.5.%.

Conclusions: SLS is a new exciting technology which allows dental implants to be fabricated by annealing metal powder micro-particles in a focused laser beam, according to a computer-generated three-dimensional (3D) model. In addition, SLS allows the fabrication of a porous structure with controlled porosity, pore interconnection, size, shape, and distribution, which are requirements for rapid bone ingrowth. Selective laser sintering (SLS) implants seem to represent a valid treatment option for rehabilitation of single-tooth gaps.

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"SLS is a new exciting technology which allows dental implants to be fabricated by annealing metal powder micro-particles in a focused laser beam."

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The Dental Industry goes to Africa with Idea (International Dental Exhibition Africa)

Dakar will host the first International exhibition ever for the African dental sector from 13th to 16th November 2014. An export opportunity for dental industry in emerging markets.

Exhibitors

Manufacturers of dental products worldwide, which can either participate within a national pavilion or independently.

Visitors

The exhibition will be mainly addressed to operators of the dental sector (importers, distributors, agents) who will have the chance to meet the exhibiting companies which are willing to expand their business to the African market.

African market

IDEA's main market of reference is the Ecowas (Economic Community of Western African States), a union of African states comprising Benin, Burkina Faso, Côte d'Ivoire, Guinea Bissau, Mali, Niger, Senegal, Togo, Gambia, Ghana, Guinea, Liberia, Nigeria, Sierra Leone and Cape Verde. A total surface area of 6,1 million km² area with a population of over 200 million and a Regional GDP 106, 7 billion $ US. Furthermore, Ecowas has a single currency, political stability and free trade between the various countries.

We want IDEA to become the reference event for the entire western African dental sector.

Why in Senegal

Thanks to its geographical position Senegal represents the gateway to African markets. As a matter of fact, Dakar is one of the main ports of entry of goods for Ecowas countries and it has an international airport which is well connected to most of the European capitals and to several other destinations worldwide

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Light Quality in Dental Practice

The aim of a dental light is to provide the most appropriate illumination level in the treatment area, assuring professional and patient's comfort. The quality of light is not only essential for the correct visualisation of surgical field and for a true perception of colours, but also for the influence that light plays on the physiological processes of the observer. Dental light has to be a responsible light.

Several studies have demonstrated that the light source characteristics, in terms of colour temperature and light intensity, can influence the concentration level, improving the execution of mental activities and reducing the possibility of error; For example, a warm light (low colour temperature) avoids tiredness and the occurrence of annoying glare, while cool light (high colour temperature) improves concentration; all these aspects represent the non visual effects of light.

The evaluation of a dental light shall involve mainly the quality of its illumination which is the result of a perfect combination between light intensity (lux), colour temperature (Kelvin) and colour rendering index (CRI).

"The evaluation of a dental light shall involve mainly the quality of its illumination which is the result of a perfect combination between light intensity (lux), colour temperature (Kelvin) and colour rendering index (CRI)."

All **Gcomm** dental lights give the possibility to adjust light intensity (lux), making the light adaptable to the level required by the specific application and consequently reducing eyestrain. On **Gcomm** LED lights (Iris View and Polaris) it's also possible to adjust the colour temperature, a physical characteristic measured in Kelvin [K], used in colorimetry to define the hue of the light.

A low colour temperature, less than 4.000 K, corresponds to a yellow-orange hue, while a light with colour temperature in the range of 12.000 K to 16.000 K has a blue tint.

Colour rendering index (CRI) expresses how accurately a light source shows the colours of an object compared to the natural light. The more accurate the rendering is, the higher the index value is (CRI = 100 if there is coincidence). All **Gcomm** lights have a CRI > 85.

The Polaris R2 light is characterised by simple and soft lines; design has been particularly studied in order to realise a dental light with high performances and aesthetically considered: a perfect union between functionality and ergonomy.

Soft lines and smooth surfaces, the possibility of an easy handles' extraction and sterilisation allows to an optimal cleaning and hygiene.

Polaris R2 is characterised by shells entirely in aluminum, which assures a high robustness. The studied geometry of reflectors allows realising a luminous flux which is homogeneous, clean and without shadows. The region near the dentist head tends to heat, but the use of LED light technology reduces considerably the heating raise. Moreover LED lights have lower consumption and an elevate reliability in respect to halogen light system.

"Several studies have demonstrated that the light source characteristics, in terms of colour temperature and light intensity, can influence the concentration level."

Iris View, the second generation of **Gcomm** LED light, offer to the dentists new performances in led light, combining a direct LED illumination technology together with a High Definition (Full HD) video camera system for professional use. Special made optical system together with 8 cool and warm white LEDs ensures a perfect light pattern and uniformity in illuminance distribution. A 180° rotation of the keyboard allows the operator to use it in different positions and makes easier the selection of the 3 preset programmes:

- polymerization: 3000 K, reduces blue emission decreasing composite polymerization speed;
- surgery: 4500 K, improve soft tissue's contrast, discerning better hues from gums, blood and periodontal;
- colour matching: 5500 K, creates a combination of warm and cool LEDs that maximizes colour rendering index facilitating dentist's choices during tooth replacement.

GCOMM

Additional keys on the keyboard allow the use of the Full HD video camera system by zooming in and out, up to 30 x. The main body of IRIS made in aluminium grants a long durability and robustness. Ergonomic and simple design applies to different surgical requirements quickly.

Iris View is equipped with a built-in Full HD video camera (1920x1080 px) with Autofocus and automatic white balance regulating device. With a 30x optical zoom the video camera ensures clear and detailed images of the oral cavity for diagnostic and treatment. Videos can be recorded on external devices for educational purposes (university and conferences) and for the treatment technique improvement.

Gcomm introduces, first in dental lighting sector, an innovative communication user interface with iOS technology, available for iPad. It represents a revolutionary and unique step towards the traditional dental light concept.

Gcomm does not means only quality dental light, the "I light it" philosophy has revolutionised the way to design and manufacture products. The goal is to achieve a significant improvement of the dentist's work, paying attention to the quality of light and protection of the environment.

Harmony in lighting is a perfect combination between environmental illumination and the treatment area illumination; **Gcomm** systems could work as one, independently, but in symbiosis to each other.

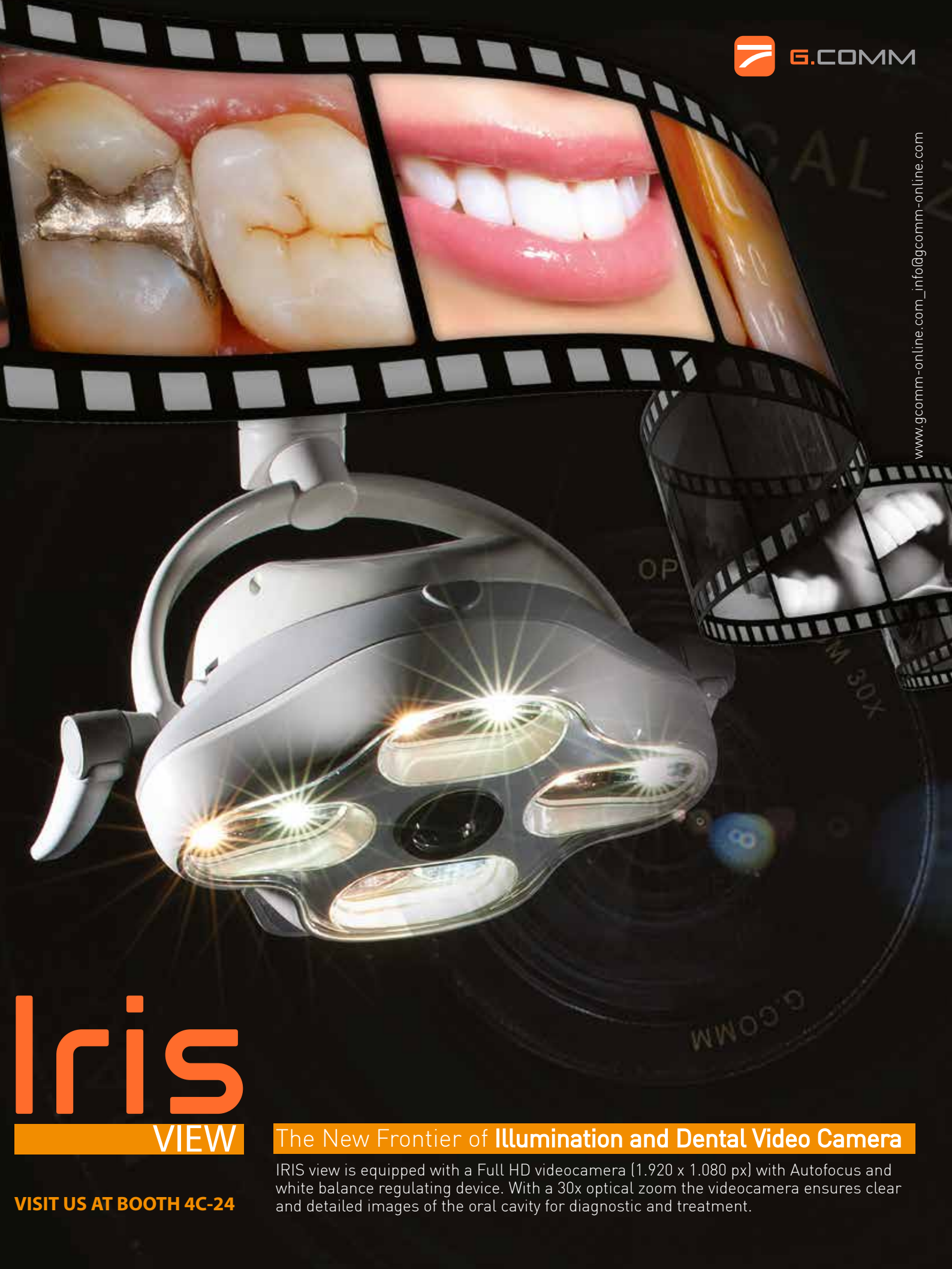
To be able to perform a satisfactory work in an ergonomic way it is essential that the dental practice is equipped with a lighting system suitable and studied according to the physical characteristics of the room itself and the operational needs. Hence the idea of a series of ceiling professional lights for studio lighting and for any dental treatment room.

The Nuvola series (Nuvola, Nuvolina and Nuvolina light) has been developed with materials that allow an easy and simple cleaning to prevent bacterial proliferation. Modern design, smooth lines and a body without openings, makes it perfect for use in surgical environments and without need for maintenance.

High power illumination between 2.200 lux (1.300 mm above the working area) and 5.000 lux (850 mm above the working area). Colour temperature of 6.500 K and colour rendering index (CRI) of 95%.

Gcomm devices have been designed on three main bases: aesthetics, functionality and simplicity, putting particular attention to research in design and materials. The result is modern operating dental devices, with soft, fresh and pleasant design, but also very stable and functional systems that offer high level performances and will surely meet with any of professional requirements assuring great optical performances in order to satisfy every dentist's need.

Gcomm dental lights make more comfortable dentist's work.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VISIT US AT BOOTH 4C-24

Mozo-Grau Dental Implants, at the forefront of the technology

Established in Valladolid (Spain) in 1996. Mozo-Grau was born with the aim of offering a service in the field of Implantological Oral Surgery based on the experience of respected professionals by developing, researching, designing and launching new reliable products and solutions.

The company activity sets on 4 fundamental bases: Quality, Science, Innovation and Continuing education. The Quality is assured by checking piece by piece the 100% of the units manufactured with a strict 10 microns tolerance, one of the most exigent manufacturing tolerances in the whole industry. This know-how allows achieving an optimal compromise between manufacturing and long-term maintenance of the restoration. *

Nowadays, Mozo-Grau is already present in many European, American and Asian markets like China and Taiwan. Exhibiting for the first time at IDEM Singapore the company continues looking for new distributors to expand its internationalization project.

In Singapore, Mozo-Grau will display all its range of innovative products and solutions for implantology such as Planning Software MG Fidelis, MG InHex morse taper internal connection implant, MG Osseous of external connection, MG Bio-CAM system for customized CAD-CAM abutments and the Implantological Carnet, MG Implant Card.

In order to increase the added value of its production system and as proof of the 100% traceability of all its products, **Mozo-Grau has launched MG Implant Card,** an implantological passport which allows both patients and clinical professionals to gather firsthand knowledge and all detailed information about their own personal unit. This is possible thanks to the "**Código explorer,"** consisting in a unique number which identifies each product. Entering this code in Mozo-Grau´s website it is possible to check all the manufacturing and quality control processes and download a diagram and a personal certificate as quality proof.

It is also important to highlight the newly launched **MG Inhex Implant with MTA abutment.** Like no other similar product in the market, the MTA abutment joins in just one component the functionalities of several different elements in the restoration (implant mount, temporally or permanent abutment and impression coping), allowing big saving in the final restoration without compromising their quality.

Another outstanding solution is MG Bio-CAM. It offers a completely personalized CAD-CAM prostheses (unitary or structures) that ensures a perfect adjustment and sealing with the implant thus preventing the bacterial colonization and any kind of micro movement. Each and every piece is submitted to a strict quality control to verify that has been manufactured according to the STL file sent by the laboratories or the doctors using the Mozo-Grau's scanbodies. Titanium and chrome-cobalt are the materials used for this work.

Quality as the main value

Last but not least important we would like to point out **Mozo-Grau training program** that offers to its Clinicians and Distributors more than 60 courses on Mozo-Grau implants every year and its annual Implantology Congress. Also, every month Mozo-Grau provides online training through the Implant-Training website with the collaboration of renowned doctors, about the most innovative topics on implantology.

More information: www.mozo-grau.com

**As proven by University researches published in scientific journals like COIR, JOMI, JOMS, among others. Please, contact us for more detailed information*

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MOZOGRAU® DENTAL IMPLANTS

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Cortex

Product Highlights

Implant Premium Set

IMPLANT PREMIUM SET

Direct Mounting of Implant and Abutment (Carrier). The most sterile way of extracting the implant from its case and transferring it to the implant location.

•Time saving and easy to use transferring system. Transfer / Impression coping.
Transfer / Impression coping The firm transfer device is easily separated after mounting into two parts:
•The transfer top can be disposed of.
• Impression coping to be used as part of the implantation procedure.

The Premium Packaging is another innovative product from Cortex Dental Industries Ltd.
info@cortex-dental.com

Saturn Dental Implant

SATURN DENTAL IMPLANT

Ideal for soft or regenerated bone D4 / D5. This implant is designed to increase primary stability in cases of immediate replacement after extraction or in cases of sinus elevation. Also, can act as rescue implant in cases of failed implantation. Saturn's "wings" provide substantial initial stability, reducing stress distribution at the alveolar cortex and optimize esthetic restoration.

Primary stability of the Saturn implant in the empty socket is over 40 Ncm, enabling the immediate placement of esthetic temporary crowns. "Saturn" is also suitable for cases of open and closed sinus grafting. Expanded diameter threads provide excellent initial stability even if the residual crestal height is low as only 3 or 4 mm. Furthermore, the Saturn is suitable for implantation for lower molar extraction sites. When there is adequate room (14 mm mesio-distal).

The SATURN Dental Implant is another revolutionary product from Cortex Dental Industries Ltd. info@cortex-dental.com

Easy2fix System

EASY2FIX SYSTEM

Easy2Fix, a unique dental implant system was developed to overcome the surgical trauma, the lack of adequate bone volume and its elevated cost by using small diameter guided implants with biomechanical enhanced primary stability, allowing immediate and long lasting denture stabilization. The design has been validated by biomechanical testing and clinical randomized controlled trials published in international journals of implant dentistry. The procedure takes 15 minutes and there is no recovery period for the patient, allowing immediate function without the typical risks associated with other surgical implants, it provides a very precise standardized protocol, useful for general practitioners and beginners. The Easy2Fix system, offering the most cost-effective solution in one dentist's session, is the perfect solution for edentulous patients.
The Easy2Fix System is another revolutionary product from Cortex Dental Industries Ltd. info@cortex-dental.com

Prime Implant Set

IMPLANT PRIME SET

The change in the prime package was designed to create direct and easier access to the implant with the aid of a driver or motor mount and to bring the implant safely to the osteotomy site. The new prime package includes a titanium sleeve that is adapted to the size of the implant. The aim of the new package is to prevent stainless steel ion contamination of the implant by using the implant driver and to allow the snap on technique at the area of operation. To do this, changes were performed on the implant drivers and motor mounts that allow the positioning of the implant within the package, without the danger of the implant breaking loose, with using a holding mechanism with a peek ring placed within the internal thread of the implant. Unlike the methods of other companies, this method does not decrease the active area of the drivers that work on the interior hexagon of the implant and in doing so maintains the effectiveness of the penetration and work. Also the new drivers were adjusted to work with Cortex Implants with Premium package that was designed for immediate implant loading.
The Implant Prime Set is a non-touch product from Cortex Dental Industries Ltd. info@cortex-dental.com

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Mariotti

High quality equipment for the dental sector

The company **MARIOTTI** was founded in ITALY in 1973 as a factory specialising in planning and construction of high quality equipment for the dental sector. Actually **MARIOTTI**manufactures: Implant motors, surgery piezoelectric, milling machines for guided surgery, lab milling-machines and lab micromotors.
All the equipment is in conformity with the current standard and offers extreme reliability and high performance under all particular working situation.
The Mariotti's technical staff working side-by-side with experts in the field, mainly, introduces: **MiniUniko.CL** (new implant LED Motor unit) and **UNIKO.PZ** (implant LED Motor + surgery Piezoelectric double-unit).

MiniUniko.CL is the new surgery/implant Motor with high luminosity led light. It's a brushless motor of the newest generation that combines ease of use and practicality with first-class performances concerning the torque value. It's endowed with full safety and operating precision with every implant system and it's compatible with handpieces and contra-angles (with or without optic fiber) found on today's market. To guarantee, top reliability and high torque, the perfect contra-angle is the optic 32:1 code C32L by Mariotti.

MiniUniko. CL

Uniko.PZ

UNIKO.PZ is a double unit for surgery/implantology with led Motor and piezoelectric system. This device gives the double feature combining Piezoelectric for surgery and brushless implant Motor with high luminosity led light.

The **piezoelectric MARIOTTI** delivers its ultrasonic power in an optimal way thanks to the innovative system of dynamic frequency control to ensure the proper supply of energy at any situation. It's also available the single Piezoelectric device: product code MiniUniko.PZ.

The units guarantee: Excellent performances in safety and precise adjustment of the parameters; User friendly, immediate and intuitive use by "TOUCH" keyboard and wide display; Spraying system control through peristaltic pump; Update version via software; Ergonomic and powerful handpieces, no overheating; Extended service life of autoclavables parts (cables, handpieces, motors).

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CGF: concentrate growth factor from tissue regeneration

The ability to regenerate tissues and organs is a topic of great scientific, social and ethical interest.

Tissue engineering and regenerative medicine have made and continue to make great progress identifying new strategies in the field of tissue regeneration, such as the use of "platelet concentrate" which constitutes a relevant and innovative clinical approach. From years Silfradent deals with the study of platelet concentrates and, in particular, with CGF (Concentrated Growth Factors) that represents a new generation of platelet concentrates able to hold inside a higher concentration of autologous growth factors.

CGF, like other platelet concentrates, is isolated from blood samples through a simple and standardized separation protocol, which is performed by a specific centrifuge device (Medifuge MF200, Silfradent srl, Forlì, Italy) without the addition of exogenous substances. A study made in the "Laboratory of Organ and Tissue Regeneration", headed by Professor Luigi F. Rodella of the Section of Human Anatomy, Department of Biomedical Sciences and Biotechnologies of the University of Brescia and published in the international journal "Microscopy Research and Technique" has highlighted some of its main features: the CGF consists of an organic matrix rich in fibrin that is able to "trap" a greater amount of growth factors (TGF-ß1 and VEGF); moreover, it contains CD34 positive stem cells, which are known to be recruited from blood to injured tissue and play a role in vascular maintenance, neovascularisation and angiogenesis.1 In addition, an other study underlined the need to establish a standardized protocol for preparing CGF (also said PRF-Platelet Rich Fibrin) membranes for clinical use.2

From a clinical point of view, some recent studies about the use of CGF in maxillofacial surgery showed the efficacy of CGF in guided bone regeneration before dental implant placement.3-5 In particular, there are satisfying results about the use of CGF as alternative to bone substitutes for sinus augmentation.4,5. However, its features make it suitable for its use, alone or with other biomaterials, in other fields where tissue regeneration and remodelling is required.
To date, the research continue and is addressed to evaluate "in vitro" the ability of CGF of stimulate cellular proliferation and to test the efficacy of CGF in different clinical applications ranging from oral surgery, dermatology and cosmetic surgery.

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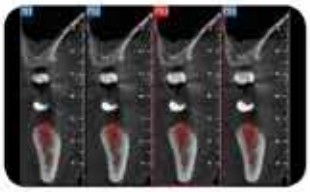

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