University of Shrijah Organize the 2nd International Dental Conference

Under the patronage of His Highness Sheikh Dr. Sultan Bin Mohammed Al Qassimi, Member of the Supreme Council, Ruler of Sharjah, founder and Supreme President of University of Sharjah, the University held the 2nd Sharjah Dental and the 14th EMA International Dental Conference, under the theme of “Redefining Tomorrow’s Dentistry” from 14-17 October in the medical campus of the University.

The Faculty organized the conference in cooperation with Emirates Medical Association and Ministry of Health.

The activities included workshops for Implantology and dental restorative materials, and also scientific sessions in different field of dentistry like Evidence based dentistry, Periodontology, Endodontology, Pediatric dentistry and Digital Photography. The conference invites speakers from different part of the world like USA, India, and Lebanon and gulf region. Its exhibition includes many companies that had latest technologies in dental field and also some institutes like Nicholas and Asp presented their postgraduate programs. And great thanks for Sheikh Hamdan awards for Medical projects played a role in the exhibition. Part from the activities was scientific poster competition that attract many of dental researchers and students to present their researches and awards were there for the best three posters.

Voco GmbH, Germany, is back to the UAE

Voco GmbH the research-driven Germany based manufacturer of more than 160 high-performance dental materials announces its cooperation with Tigers Medical Equipment LLC for the import, marketing and distribution of Voco – Products in the UAE.

Voco-Products are being exported to more than 120 countries worldwide and the product range includes the following materials: linings, bondings, restoratives, luting, temporaries, core build-up materials and others. Their quality has been proven by many international awards. Voco GmbH guarantees the highest standard of quality assurance by strict adherence to their quality assurance system which has been continuously updated.

Voco GmbH is currently certified according to EN ISO 9001/EN 13485/ Directive 93/42 EEC. Now, Voco – products are also available in the UAE with their new partner Tigers Medical Equipment LLC.

Quality and Service are Voco’s and Tigers Medical’s priorities for the UAE market, in serving the private sector, public institutions and all the Oral healthcare providers in the United Arab of Emirates.

For further information please visit the Voco web-page www.voco.com or contact Tigers Medical directly.

Miswaks level toothpaste

LEIPZIG: Dentists at the King Saud University in Riyadh, Saudi Arabia, have found that teeth cleaning sticks or miswaks are as beneficial for oral health as toothpaste. The research identified a total of 19 substances that kill harmful microorganisms and protect gums.

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New health information system is to be connected via an online network by 2011

As the Ministry of Health announced, with the implementation of Warreed, the new health information systems at hospitals and clinics in the UAE will be connected via an online network by 2011 to improve patient care and ensure patient safety.

This network aims to exchange and access to medical and health information between patients and doctors as well as with healthcare peers across the country. Patients can now be treated in the most effective way by having access to their treatment results, updates and follow ups. They can also be easily transferred from one hospital to another, even outside of the country thanks to specific agreements between the hospitals. The new system promises to end losing data, saving time and money, decreasing the waiting time for medical appointments but most importantly has the ability to provide international medical consultation.

Although Warreed has a lot of advantages, it has some drawbacks. The main concern is how to run the system in the most efficient way and ensure patient safety while going through the process of implementing the customer-centric data system.

At the 3rd Annual Healthcare Expansion Congress Mid-East, organized by naseba, e-health applications in the region, the importance of information at the point of care, patient safety and care coordination emerged as the hottest issues discussed during the event. The leading solution providers as well as decision makers from the healthcare industry around the globe gathered together to share their experiences and find the best solutions to their needs.

Effectiveness in implementation:

Raj Singh, healthcare solutions consultant EMEA, Hitachi Data Systems, said: "In order to achieve the most cost effective method of implementing e-Health services for the population of the UAE required the identification of the actual requirements and objectives of the program. Certainly in today's world there exists the technical capability to deliver the substantive clinical application suite to meet and exceed the service level requirements that may be placed upon them."

The key considerations for such capability should also take into account the medical and clinical needs as well as the stated objectives for improved care, workflow processes and the requirements for future health medical care possible. These ‘healthcare business-level’ objectives can then be translated to technology solutions or requirements designed and implemented to meet them.

How to ensure patient safety?

Patient safety is and should continue to be the most important consideration for delivering efficient patient care with the new system. A certain element of risk from human errors always remains but we should certainly be able to address avoidable and often costly mistakes, noted Raj Singh.

‘The reliability of IT health information systems coupled with advances in technologies such as RFID and Finger Vein Biometrics can help improve patient safety significantly. The most important consideration for improving patient safety still relies, however, on the healthcare providers who need to ensure they harness the best care practices with correct patient identification throughout their healthcare workflows and processes,’ he added.

Kingdom of Saudi Arabia: as a role model:

On the second day of the 3rd Annual Healthcare Expansion Congress Mid-East, Dr. Fahad Bin Saleh Al Orihi, the MD Chief Executive Officer of King Faisal Specialist Hospital & Research Center, Riyadh, shared the experience of e-health application in the Kingdom of Saudi Arabia. Saudi Arabia is the first country in the Middle East region, to have implemented the eICU program, patented by VISICU, which combines early warning software and remote monitoring to connect off-site critical care physicians and nurses to ICU patients at all times.

The eICU Program provides an alternative way to deliver high-quality critical care when specialist resources are limited. The eICU vision is to have centralized intensivist physicians & critical care nurses - round-the-clock in an eICU Center - to help bedside teams watch over their sickest patients and to prioritize interventions. The evidence is growing that eICU Programs are having a proven impact on saving lives, reducing complications as well as the length of patient stays, especially in the countries where people have limited and unequal resources in healthcare services.

Implementation of e-health services enabled the crucial distribution to high tertiary care to all citizens of Saudi Arabia, easy accessibility to healthcare services and education through e-health networks, cost effectiveness and efficiency for both healthcare providers and their patients, by utilizing high sophisticated e-health technology and information, availability of healthcare services and transfer of mission of all kind of medical and administrative events to as many as possible. This is something we could be, noted Dr. Fahad Bin Saleh Al Orihi.

His message for UAE health authorities was: ‘Sharing the result of this project is the only way to avoid a lot of hiccups, while running the system and building the right infrastructure for the eHealth application. Investing in broad bandwidth will let such applications requiring heavy data exchange, possible,’ he added.

The Government's point of view:

Mohammed Abid Al Abi, the head of Radiology from the Ministry of Health mentioned that the system of e-health facilitate will enable both patients and doctors across the country to make quick and well-informed decisions as well as ensuring the quality of treatment. At this point, training the staff on the new e-health applications, upgrading and maintaining the data base are vital factors for the sustainable safety of patients.

The 3rd Annual Healthcare Expansion Congress Mid-East is the only event in the industry that is designed to provide deep insights into the most relevant issues affecting the medical community today. In addition it provides the opportunity for healthcare providers and vendors to present and introduce the newest solutions for their current and upcoming projects while meeting leading global solution providers.

Over 28% of Qatar’s children diabetic

Instances of childhood diabetes in Qatar have more than doubled in the past decade, from 15.7% of under-fives to 28.2%, delegates at the inaugural International Childhood Diabetes and Obesity Conference in Doha were told. Approximately 45% of Qatars are estimated to be obese, which has been linked to increasing instances of diabetes.

Abu Dhabi seeks to privatise some services

The Abu Dhabi government is seeking external investment in the emirate’s healthcare system as it looks to privatise some services. Zaid Al Siksek, chief executive of the Health Authority Abu Dhabi, said it wants the system to become less dependent on public run institutions, which in the past have ‘not been as efficient as possible’. He said 50 private firms have filed applications to invest in the emirate’s healthcare system, but only four of these are expected to ‘move forward’.

First Cyberknife system installed in Saudi hospital

US-based Accuray Incorporated has announced that the first CyberKnife Robotic Radiation Surgery System in the Kingdom of Saudi Arabia will be installed at King Faisal Specialist Hospital and Research Center in Riyadh. It is the first Cyberknife System to be installed in the Middle East region.

Kuwait-based Gulf Investment House has announced that it has abandoned plans to develop a $1bn Healthcare City 100 km outside of Muscat, MEID has reported. The company did not say why the plans for the mixed use development, which was to have included medical colleges, hotels, and hospitals, were dropped.
Economic fears in the US affect dental care
Visiting a dentist of low priority for many people, new study says

LEIPZIG/WASHINGTON D.C.: With the economy in the United States declining, preventive dental care can be one of the first things to go. The correlation between rising unemployment and a drop in preventive dental care, however, is not necessarily due to people being short of cash, according to a new study appearing in the online edition of Health Services Research.

The researchers analysed 10 years of information about visits to dentists’ offices in metropolitan Seattle and Spokane from Washington Dental Services the largest dental insurer in the US state, which covers roughly one-third of its residents. They compared this information to unemployment data from the Bureau of Labor Statistics and Washington’s Employment Security Department, and ruled out other possible explanations for a correlation.

In the Seattle area, for every 10,000 people who lost their jobs, there was a 1.2 per cent decrease in visits to dentists for checkups. The drop was higher in the Spokane area, where the same increase in unemployment was associated with a 5.95 per cent decrease in preventive visits. This is notable as the study looked at people who had dental insurance that covered routine care.

“We see that high community-level unemployment exacts a psychological toll on individuals,” said lead study author Brian Quinn. “Even for people who are working, or who have a working partner or spouse, there might be an impact if they’re stressed about themselves or their significant others losing their jobs.”

Quinn, a program officer for the Robert Wood Johnson Foundation, said the distraction of worrying about not having a job could make dental care drop off a person’s radar. “During stressful periods, those things that don’t seem as urgent may be ignored,” he said.

Quinn added that because preventive care is usually cheaper than tooth repairs, dental plan administrators and public health policy makers might want to promote cleaning and checkups during periods of high unemployment.
TiXos....a pioneer in the new age of implant

LEADER ITALIA srl, manufacturer of the well known Implus, S-Type and Nano Implants, after four years of researches and studies in vitro and in vivo has started the production of a new range of sintered titanium Implants named “TiXos”.

The innovative direct laser fabrication process, exclusive patent by LEADER ITALIA, is a revolutionary manufacturing technique that enables the production of models with precisely defined structure and proportions based on 3D virtual data. The desired model is produced by sintering metal powder nanoparticles in a focused laser beam. The implants are computer designed and the resulting surface is characterized by intercommunicating cavities that interlock with the host bone.

The cavities geometry, 2 to 100 micron, is accurately selected during the project stage. This geometry allows bone penetration deep inside the implant body, creating pits and pores that are colonized by bone cells.

Another exciting feature, demonstrated by the studies carried out at the University of Birmingham by Prof. B. Sammons, is the isoelectricity of the surface, that has a Young module equivalent to the bone one, while the implant core maintains the characteristic Young module of titanium. This feature gives the implant a structure very close to the natural tooth, more similar than any other implant on the market.

In vitro studies carried out by Prof. R. Sammons (University of Birmingham – UK) and by Prof. Papaccio (University of Naples – Italy), researches carried out by Universities in Varese and Chieti (Italy) and clinical-histological trials carried out on animals and humans by University of Sao Paulo (Brazil), have demonstrated the capability of these implants to accelerate bone healing, thus improving a faster osseointegration than other surfaces and allowing a great bone formation (up to 200 micron) inside the isoelectric spongy structure.

The new TiXos implant line is a pioneer in the new age of implant manufacturing, thanks to innovative technologies that allow to obtain particular mechanical and biological features and the possibility to build up custom-made implants for immediate loading and post-extraction, with the precise form of the tooth root, designed starting from patient’s CT scan.
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In light of increasing reports of the incidence and prevalence of dental erosion, it is now necessary that dental practitioners are familiar with the etiological and predisposing factors of dental erosion, as well as the possible ways of its prevention and control.

Dental erosion, otherwise known as erosive tooth wear, is the loss of dental hard tissue either through mechanical or chemical means, usually due to the action of acids of non-bacterial origin or by chelation. The incidence and prevalence of dental erosion is increasingly being reported.

This is evident from prevalence studies conducted in different parts of the world, which showed that the percentage of individuals affected by erosion (Table 1) among various age groups. This has prompted a series of research on the possible approaches for prevention and control of dental erosion, while its management is now an area of clinical practice that is undoubtedly expanding.

This article describes an overview of the up-to-date information on the factors that predispose individuals to the risk of dental erosion, and the possible strategies to prevent and control the development of this disorder.

**Predisposing Conditions**

An important step towards prevention of dental erosion should be the identification of those individuals who are at risk of dental erosion. Evidence based on case reports, clinical trials, epidemiological, cohort, animal, in vitro and in vivo studies have described certain acids that could cause dental erosion as originating from gastric, dietary or environmental sources. Based on this fact, certain factors, classified as either intrinsic or extrinsic, have been identified as the predictors of susceptibility to dental erosion.

Dental erosion due to intrinsic factors is caused by gastric acid reaching the oral cavity and the teeth, and acting regularly on the dental hard tissue over a period of several years. This may be the result of chronic vomiting, persistent regurgitation or re-nutrition. The acidity of the gastric juice ranges from pH 1 to 3.5, so it is conceivable that regurgitation or vomiting into the mouth might result in marked tooth destruction in the form of erosion.

**Conditions that are associated with**

**chronic vomiting or re-nutrition and therefore can predispose an individual to the risk of erosion are:**

1. certain medical conditions**

such as bulimia nervosa, gastro-esophageal reflux disease (GERD), cyclic vomiting syndrome (CVS), psychogenic vomiting syndrome, pregnancy-induced vomiting, and (2) lifestyle such as chronic alcoholism and binge drinking.

**Extrinsic factors** that can predispose an individual to the risk of dental erosion have been grouped under the headings of dietary, occupational, medications and lifestyle.

**Misuse of acidic dietary products:**

Acids: Fruits, fruit juices, drinks and beverages have been shown to have a very high level of titratable acids (high H+) and low pH, which is detrimental to the teeth. Frequent and prolonged ingestion of these food substances—such as the habitual drinking of acidic fruit juices, carbonated drinks and wines, and the use of acidic medicaments—may induce the dexterity of the photometer to be decreased due to the decrease in salivary flow during sleep.

Dietary sources of acids that may cause dental erosion: citrus fruits and fruit juices, other acidic fruits/juices, beverages, acidic sports drinks, and acidic flavour-reacted foods (eg, Lucas paste, Lucas powder, chow mein, rice, salad dressing, vinegar and soy sauce and other acidic foods). Dental erosion has been reported to be common among lac-teoversertaries due to the associated hypocalcification and high consumption of low-pH foodstuffs combined with the abrasive effect of the coarse-fresh food. Frequent tooth brushing with abrasive dentifrice as practiced by some patients can barely detect early erosion. The severity and extent of the wear must be recorded to establish the clinical baseline so that progression can be detected, and the effects of preventive measures assessed. For this, the following techniques are useful.

- **The Silicate Index**, described by Shaw et al., in which a silicate putty impression of the teeth is taken in a sectional tray, is one of the easiest and most useful methods of monitoring tooth wear.
- **The Tooth Wear Index of Smith and Knight**, which records the degree of wear on all tooth surfaces, allows monitoring of the effectiveness of preventive measures.
- **Serial (reference) impression casts** or study models recommended by Wicksen’s can be used at follow-up visits for macroscopic comparison with the teeth to monitor wear.
- **Clinical photographs** are obviously useful for monitoring wear, but the dexterity of the photographer and ambient conditions such as light reflections affect the quality of the product.

**Guidelines for Prevention & Control**

The conditions discussed above as predisposing individuals to the risk of dental erosion highlight the fact that individuals who are susceptible to dental erosion have either psychological or habitual or professional inclination to the factors predisposing them to the disorder. This would obviously pose difficulty in obtaining full compliance with preventive advice, even when the causative factor is identified. However, if implemented, the following steps may prevent or arrest the damage, modify habits or protect the remaining tooth tissue.

**Step 1: Early diagnosis**

Patients can barely detect early enamel erosion due to its smooth and shiny appearance (Fig. 1). Even when detected they rarely seek treatment until it gets to an advanced stage, when it either becomes symptomatic (sensitivity) or affects the esthetics of their teeth. The responsibility of early detection and treatment therefore falls on dental professionals.

Once dental erosion is detected, there is an opportunity for a full case history, which should include dietary history, medical history, dental hygiene habits and any other lifestyle history. This would establish the etiological factor and help in development of individualized counseling. Following diagnosis of an early lesion or the patient’s susceptibility, the following recommendations may be considered as a “damage-limiting” policy as well as a preventive policy.

**Step 2: Record the clinical situation**

The severity and extent of the wear must be recorded to establish the clinical baseline so that progression can be detected, and the effects of preventive measures assessed. For this, the following techniques are useful.

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Step 4. Preventive measures

A. Use of a remineralizing agent or neutralizing agent.

It is a common practice among individuals to remove their mouth by toothbrushing with dentifrice after an acidic Challenge, such vouches, which could serve the case with an eating disorder or chronic alcoholism. Bearing in mind that demineralization of tooth surface by acidic challenge decreases its wear-resistance, therefore rendering it more susceptible to erosion, and hence poor protection as a mouth refresher.

b. Change of condition of mouth

The temperature of an acidic and neutral environment is poten-tial; taking the drink ice-cold reduces its erosive effect, as contact of the teeth by the erosive agent and enhances rapid clearance of the debris from the oral cavity. The drink should be swallowed quickly and not sipped slowly or “swished” around the mouth.

c. Use of operative devices

Insertion of a close-fitting oc-clusal guard at high risk times (e.g., sport playing (for GERD patients), swimming in poorly maintained swimming pool (for professional swimmers) or volun-tary vomiting (for anorexia/bu-minia patients) may be considered. Application of milk or other calcium-rich substances such as milk of magnesia, to the fitting surface of the guard to neutralize any acid pooling underneath the appliance or a neutral fluoride gel, can be well used for this purpose.

d. Use of modified dietary and medicinal products

The properties and beverages that determine their erosive potential includes pH, titratable acid (total acid level), type of acid (gka), calcium-phosphate and fluoride contents, and calcium--calchettating properties, ad-here to tooth surface and saliva. This is a complex property. The com-position of some acidic dietary products has been modified with respect to the oral environment in the aim of reducing their erosive potential. 39,40 This should be con-sidered when advising individuals on the use of some dietary and medicinal products.

Step 5. Health education

Dental professionals should be as proactive as they are with dental caries in health education relating to the prevention of dental erosion. Prevention and patients should be informed of the dental implications of the predisposing factors discussed above; how to prevent or minimize the problems and the importance of full com-pliance with the preventive ad-vice. In addition, patients should be encouraged to prevent or minimize the problems and the importance of full compliance with preventive policies.

There is a need for the dental profession to work closely with medical colleagues to alert them of the dental consequences of certain medications and medical condi-tions, and how to minimize them. 39,40 This would enable the information on preventive regimes to be passed to the patients at an early stage, before the damage is done.

Pharmacologists, on the other hand, should be urged to include in the list of side-effects the potential dental erosion caused by some medicinal products when used under cer-tain conditions (eg, frequent and prolonged use of the mouthwash) or to in-duce such side-effects (eg, rinsing with remineralizing agent while using the medication). Patients with disorders or prescriptions that may predispose them to eros-ion should be informed of this and all healthcare personnel involved in their management (doctor, clini-cal professional, and patient) be advised to visit their dentist for regular dental examinations. This would be as proactive as they are with dental caries.

The remaining restorative in-terventions may be considered for protection of the eroded tooth tissue from further erosive damage and to improve appearance: porous enamel or resin bonding agents or, adhesively retained resins and fluoride sealants.

Step 7. Establish continued care

It is vital to stress that the patient’s care may result in a relapse of the condition, therefore it is essential that patients will be continuing to discuss the patient’s requirements should be established in order to check patients’ oral hygiene and monitor, tooth wear, reinforce advice and for encouragement to maintain changes. The teeth must be checked for wear against the reference casts, the photographs and the silicone index.

References

Dental Tribune Middle East & Africa Edition

MEDIA CME

Mission of Mercy for free dental care

MITCHELL, USA — A mad dash began before sunrise on Friday as several hundred people, some of whom had been standing in line since 5 a.m. or earlier, raced to position themselves to get to the front of the line for free dental care.

Mission of Mercy, which is sponsored by the Nebraska Dental Association, Nebraska Dental Foundation, numerous private dental practices and community organizations, is designed to provide free dental care for all those needing it.

Nearly 80 dentists from across Nebraska began arriving early Friday and were greeted by a Scotts Bluff County Events Center filled with folding chairs; rows of dental chairs; special areas for surgery and sterilized equipment; and volunteers, volunteers and more volunteers.

By about 10 a.m., entry was cut off, as about 700 people had entered the system and were patiently waiting. About 150 people had to be turned away but were told to come back early Saturday so they could get care.

At one point during the middle of the morning, there were 100 people waiting for oral surgery.

"It was amazing," said one of the words heard throughout the morning.

"It’s amazing how many volunteers are here," said Kristen Byam of Central City, who, with the help of dental assistant Tracy Flood of Torrington, Wy., provided fluoride line evaluations for patients before they were assigned to a specialty area.

Dental Tribune Middle East & Africa in collaboration with CAPP introduce to the market the new project mCME—Self Instruction Program.

mCME gives you the opportunity to have a quick and easy way to meet your continuing education needs.

mCME offers you the flexibility to work at your own pace and to view the material from any location at any time. The content is international, drawn from the upper echelon of dental medicine, but also presents a regional outlook in terms of perspective and subject matter.

How can professionals enroll? They can either sign up for a one-year (10 exercises) by dentists provided for free ($15) or pay ($29) per article. After the payment, participants will receive their membership number and will be able to attend to the program through the website mCME.com.

Once the reader attends the distance-learning courses, he/she can earn credits in three easy steps:

1. Read the articles.
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3. Fill in the answers and submit the answers by fax (+1 741 5688865) or E-mail info@mcppmea.com

After submission of the answers, (name and membership number must be included) for processing they will receive the Certificate with unique ID Number within 48 to 72 hours.

Articles and Questionnaires will be available in the website after publication. www.mcppmea.com

UK scientists find new oral species

LEIPZIG: According to a BBC report, researchers at the King’s College London have discovered a yet unknown bacteria in the oral cavity. The new species was found in healthy tissue as well as oral cancer cells and belongs to the Prevotella family which is previously linked to gum disease and infections in other parts of the human body. This finding also promotes the understanding of changes in bacterial activity that lead to oral problems and give a broader picture of the causation of these, the report said.

The healthy human mouth is inhabited by 700-900 different species of bacteria. Tooth decay and gum disease are the most common bacterial oral diseases and scientists have linked these to changes in the micro- floral flora found in the mouth. Other research states that they also promote a number of systemic diseases, such as low birth weight babies, diabetes, arterial sclerosis or pulmonary disease.

Inferertility by gum disease

LEIPZIG: Infertile men are more likely to suffer from chronic gum inflammation than those with healthy sperm. After studying 56 men who came to a fertility lab for sperm analysis, Israeli researchers found that more than 80 per cent had some form of periodontitis.


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Inferertility by gum disease
Predictable composite shrinkage may refine material selection

LEIPZIG: Researchers at the Fraunhofer Institute for Mechanics of Materials in Freiburg, Germany, have successfully managed to simulate the processes of shrinkage and consequent microleakage in dental composites. Their findings may eventually allow clinicians to select appropriate restorative material based on the shape of the cavity to be filled. Until now, tension in dental fillings could only be measured selectively. The precise course of tension development, however, has never been observed.

For their tests, the researchers reduced different dental fillings into the thousands of small particles and calculated how each element affects its first forming element. In addition, experimental parameters were incorporated into the individual elements. “We were using a standard geometry to find out how each material reacts to the stresses that occur when the volume shrinks, and how the flow capability of these materials changes as it hardens,” said Dr. Christof Koplin, a research assistant. “We also monitored tension occurring in the material varied widely by a factor of up to ten, particularly at the edges, as he added.

Medical tourism a new option for patients in the US

NEW YORK: According to reports by the Wall Street Journal, more and more insurers and employers in the United States are offering people to seek medical or dental treatment abroad. In an effort to control costs, a handful of health care plans are beginning to cover treatment overseas for heart surgery, hip and knee replacements and other major surgical procedures, the newspaper states. Until recently, most Americans who travelled abroad for medical care were uninsured, or were seeking procedures not covered by insurance. But despite the travel costs, countries like Singapore or Costa Rica have become attractive destinations for medical tourism because doctors there often charge less than 10 per cent of the treatment costs in the United States.

Leeds fights fear factor

Penno Palmer
DT United Kingdom

LONDON: Leeds Dental Institute, ranked the top school in the UK for dentistry, is currently looking at better ways to improve dental treatment and take the fear factor out of the patient experience at the dentist, Professor Jennifer Kirkham, research director, said the laboratory was looking for safer ways to control plaque which do not rely on toothpaste.

“We see patients in the clinic who are not able to brush effectively, who are afraid of toothpaste of the mouth may not allow sufficient access, the patient could be left with what is not a proficient brush”, she explains. “One of the new treatments makes use of a readily available compound in an innovative way to control plaque formation, using photo dynamic therapy (PDT). The patient uses a mouth wash containing an anti-bacterial agent which is activated by bright light and results in plaque destruction. This is trialled in the clinic and patient feedback helps researchers identify where further modifications are needed.”

Another research project could transform the approach to filling teeth forever, Professor Kirkham explains. “We have developed a method for Filling without Drilling, which uses a low viscosity protein based fluid which is painted onto the teeth where it infiltrates into the pores. Once inside the pores, the fluid solidifies, to become a gel which allows the cavity to be filled with a traditional drilling procedure.”

A recent US$8.9 million investment by the University of Leeds is set to bring the new Dental Clinic and Translational Research Unit to the forefront of global research and development in oral health. By linking the laboratory activity directly to the needs of patients treated in the clinic, the flagship centre for dental research and clinical practice, the University of Leeds Dental Institute, was opened at the Leeds Dental Institute in January 2009.

Bad lifestyle drives bad breath

Lynn Bradshaw
Dental Chronicle, Canada

Toronto: New research from Israel suggests that a high body mass index and alcohol consumption are associated with bad breath or halitosis. The study, led by Prof. Mel Rosenberg from the department of human microbiology and the Maurice and Gabriela Goldschleger School of Dental Medicine, Sackler Faculty of Medicine at Tel Aviv University, included a sample of 88 adults of varying weights and heights. The study subjects underwent a medical check-up, and agreed to complete a questionnaire involving 38 queries that covered general and oral health, dietary habits, as well as self-assessment of their own oral malodour levels.

Other odour assessments included odour judge scores, volatile sulphide levels (via Halimeter evaluation) and salivary β-galactosidase. The results of the questionnaire produced nine responses that were significantly associated with odour judge scores including questions on alcohol intake and BMI. Predictions of odour judge scores based on these nine responses yielded R = 0.601; when introduced together with Halimeter and β-galactosidase scores, the correlation increased to R = 0.8.

The finding that alcohol intake and BMI may be factors that help predict oral malodour.

“The finding on alcohol and bad breath was not surprising because the anecdotal evidence was already there,” says Prof. Rosenberg. “However, the finding that correlated obesity to bad breath was unanticipated.” Prof. Rosenberg concluded from the data that overweight patients were more likely to have foul-smelling breath. “This finding should hold for the general public,” he said, further adding that “the cause of bad breath is unclear, and additional evidence is required. “We have no idea of the potential causes, and we really do not know how to interpret the results,” he added.

The connection between obesity and bad breath could be caused by several factors, Prof. Rosenberg said. He hypothesises that obesity could transform the mouth that promotes dry mouth. “We have certainly opened a window of questioning here,” Prof. Rosenberg said.

X-Ray analysis identifies caries progression

KAVARAPETTAL, India: Researchers at the BMK Engineering College in Tamil Nadu, India, have developed an X-ray image analysis technique that may automatically identify the different stages of dental caries. The technique reveals the pixel intensities at different X-ray wavelengths, much as the histogram analysis of images by a high specification digital camera, and could be very useful in diagnosing and managing dental decay at its earliest stages.

R. Siva Kumar, head researcher at the BMK Department of Electronics and Communication Engineering, explained that the software reveals that the X-ray histogram and spectrum are very different depending on whether the teeth X-rayed are normal or exhibiting the early stages of caries. The researchers found that in the X-ray histogram, the pixel intensities are concentrated in different ranges depending on the degree of decay.

Caries is the most common chronic childhood disease, being at least five times more common than asthma. It is the primary cause of tooth loss in children, while between a third and two-thirds of people over 50 years depending on the country experience caries too. Detecting caries in the early stages of development is important for saving affected teeth and reducing the possibility of tooth loss and invasive surgery at later stages.
Customised CAD/CAM abutments and crown made of zirconium dioxide

Dr. Hartmut von Blankenburg, Frank Wüstfeld (Master Dental Technician)

In dental practice all-ceramic restorations have been experi-
encing enormous growth for years now. In Germany over two million ceramic restora-
tions were inserted in 2006 – after all, metal-free restorations are highly popular with patients. In implant prosthetics as well there is a distinct trend towards the use of all-ceramic systems. In implant dentistry long-term success and a predictable aesthetic outcome depend on the position of the implant and – where indicated – on the use of augmentative procedures. Recently, however, numerous studies have been pointing to the fact that instead of the im-
plants themselves it is more often the prosthetic superstructure which is crucial to long-
term success. With regard to bi-
ological and mechanical properties considerable impor-
tance must be attributed to the abutment as the interface be-
tween the crown and the intra-
ossous implant.

For highly aesthetic restora-
tions the manufacture of ceramic abutments and metal-free super-
structures has been recom-
manded for some time now. How-
ever, fabricated im-
plant abutments made of aluminium oxide ceramics, which are still available from some manufacturers, are far too weak and often lead to an unsuccess-
ful outcome. From our expe-
rience they are therefore now re-
garded as obsolete. The superior properties of high-strength zir-
conium dioxide ceramics, a frame-
work material with universal ap-
lications, has brought about a paradigm change in implant prosthetics. We have been providing implant patients with metal-free zirconium dioxide superstructures for six years now without ex-
ception.

Zirconium dioxide cer-
amics: material prop-
eties

Owing to its monophase crys-
talline nanostructure yttria-stab-
ilised zirconium dioxide has a superior flexural strength of 150 MPa to 1,000 MPa. This offers pleasant handling due to the ma-
terial’s absolute passivity in occlusal static loading. For the abutment a technical polishing of the contact surfaces must be per-
formed as a routine procedure.

A study to measure the bond strength of prefabricated build-ups showed that ceramic abutments are signifi-
cantly superior to ones made of tit-
anium. On the other hand, Albre-
hamsson et al. were able to prove that gold abutments and PBM 
ceramic abutments are stronger. This offers additional support for the use of zirconium dioxide abutments in implant prosthetics.

Advantages of zir-
conium dioxide in CAD/CAM manu-
facture

In the case of metal abutments dark metal parts can become ex-
posed on account of gingival re-
cessions and degrada-
tion of crestal bone (Fig. 1). Ceramic abut-
ments allow light transmission into the gingival sulcus, thus pre-
venting the grey of opaque metal parts from showing through the peri-implant tissue. Even if the mucosa is thick at 2.5 mm, the abutment has an influence on the shade perceived of the covering mucous membrane. Customised zirconium dioxide abutments are the best way of ensuring pred-
dictable aesthetics.

Owing to its strength for substan-
tial material grinding the process-
ing of prefabricated build-ups made of zirconium dioxide, alu-
minium oxide or titanium is prob-
lematic. If the ceramics over-
heat, cracks occur in the mi-
crostructure of the material. In ad-
dition, reprocessing is always very time-consuming because it has to be performed manually. In the case of cast mesostructures made of precious metal it is often not possible to budget for the cost, and the use of large quantities makes it difficult to create a pore-free cast. With zirconium dioxide the dental technician has, for the first time, a material at his disposal whose absolute homogenity is not altered by further processing.

In the case of customised CAD/CAM abutments and zircon-
ium dioxide crown frameworks the ZENO® Tec system (WIELAND, Pforzheim, Ger-
many), in conjunction with w i.tal system implants (WIELAND, Wiernsheim, Germany) is setting new standards in terms of user-friendliness, economy and flexi-
bility.

Case study: initial situ-
at
tion

For a 41 year-old female pa-
tient the plan was to provide her single gap at tooth 46 with a w i.tal implant (diameter 4.5 mm, length 15 mm). Since the bone available was more than sufficient and the proportion accounted for by soft tissue was acceptable, no aug-
mentative procedure was per-
formed in this case. In the aestheti-
cally sensitive anterior area we

Stripping and impres-
sion-taking

A three month settling-in phase was followed by stripping. A first impression post in situ was taken using an im-
pression post customised in the dental laboratory, under absolute irrita-
tion-free conditions. For the closing impression we use Im-
pregnate® (3M Espe, Seefeld, Ger-
many). The standard impression post was casted with GC Pat-
tern Resist LS (GC Europe, Leu-
ven, Belgium) and when the im-
pression has taken in the shape of the emergence profile it is cut flush with the bone.

Taking the final im-
pression

After 14 days the final impres-
sion was taken using an impres-
sion post customised in the dental laboratory, under absolute irrita-
tion-free conditions. For the closing impression we use Im-
pregnate® (3M Espe, Seefeld, Ger-
many). The standard impression post was casted with GC Pat-
tern Resist LS (GC Europe, Leu-
ven, Belgium) and when the im-
pression has taken in the shape of the emergence profile it is cut flush with the bone.

Laboratory manufac-
ture of a customised gingiva former

For the emergence profile a customised gingiva former was made of ZENO® PMMA discs A/B. The former was then inserted into the impression post. After 14 days the former was removed from the ergonomically packed former.

Fig. 1: Preparation of the implant bed with a shaping drill.
ensures perfect allocation even in confined gaps. On the order sheet created the design can be freely selected to suit requirements: first the build-up is defined and then the crown is mounted. On request an anatomical crown can also be designed with PMMA, with the aid of which the veneer is made later by the CAO (Computer Aided Overpress) method.

When designing, first of all the transition is defined between the build-up and the crown (Fig. 11). This area should not be made deeper than 1 mm subgingivally because the cement surplus has to be removed under visual control. Now the emergence profile is finished off (Fig. 12). In doing so it is possible to keep the point of implant emergence much slimmer and only allow greater width at the top. The cross-section provides a good overview here. The 3D view is displayed in the adjacent window. When the parameters have been defined, build-up can commence.

The program indicates the basic shape of a molar. However, it can be replaced by any other shape of tooth if, for example, only a premolar will fit the gap. The build-up can be customised quickly; its size can be increased or reduced by dragging the corners (Fig. 13). It can also be completely moved. By turning at the arrows the build-up can be tilted and adapted to the line of the crown. For the extent of the groove a preset can be selected. Then material can be applied or eroded.

The screw diameter is defined. Here it is possible to widen the screw opening to suit requirements so that the screwdriver is not guided too closely (Fig. 14). After completing this operation the computer blocks out the screw opening and proposes the prep line for the crown. The cement gap is also defined. Manual customisation by the technician is possible here as well (Fig. 15). Owing to the option of scanning the opposite jaw and displaying it on the monitor, when designing a cusp-supported crown the occlusal space can be measured out accurately for the veneer porcelain. If an anatomical crown is to be made of resin by the CAO method, it is now first brought into position. Owing to deformation...
points the shape can be properly adapted to the antagonist. Making the tooth seemingly abraded is therefore feasible. Only when the anatomic design has been finalised is the crown computed in such a way that it represents an anatomically reduced shape (Fig. 16).

Finally the data is saved and three data records are generated (Fig. 17). This way each element can be milled from a different material. For the build-up we have selected the pre-shaded ZENOR® Zr Discs B2.

(Fig. 18). The latter were also re-shaded with Zircolor in order to obtain a dental neck in the shade A 5.5. The crown itself was milled from an unshaded Disc (Fig. 19) and then brought up to shade A 2 with the dye Zircolor. The overpress crown was milled from ZENOR® PMMA Discs (Fig. 20). After fusion there are three parts available with excellent fit (Fig. 21). Cementing is again performed with Super Bond C&B. The titanium connector was blasted with the aid of the Rocaltex™ system (3M Espe) and conditioned with silane solution ESPE™ SIL. The emergence profile was high-polished. For this purpose we use diamond burs of various grain sizes. An optimum transition is achieved by affixing the crown margin to the build-up direct. Valuable production time is saved by simultaneous fusion of crown and build-up.

In the present case study two crowns were made on the build-up: one for conventional veneering by means of ZIROX® veneer ceramics PressX™ Zr (WIELAND) and another for overpressing with the ceramic PressX™ Zr (WIELAND). The crown made of PressX™ Zr is chiefly made on a machine. We prefer it as a low-cost alternative to the all-ceramic crown. Since the finishing of the PMMA crown is performed with a relatively large tool (diameter 1 mm), the fissures are finished with a smaller contour. Shading the structures reduces the light transmission capacity of the crowns to a certain extent. Light refracting takes place in the extrinsic dye, which is why this technique is reserved for the posterior region.

(Fig. 22). The layered crown does not leave much to be desired. Ow ing to the many modifiers and well-matched destinies a highly aesthetic crown can be achieved with minimal input.

Insertion

The CAD/CAM custom-shaded ZENOR Tec abutment was screwed into place under torque control (Fig. 23). The groove comes to rest exactly para-marginally in the hygienically uncritical area. We cement final crowns to implant abutments on a semi-permanent basis using the cement ImProv™ (Dentegris, Düsseldorf, Germany) (Fig. 24).

Sources of error

Since patients with implant-borne restorations can bite firmly again and attachment of the implant abutments is not regenerative (slightly resilient) as with teeth, masticatory forces are enormous. It is therefore important for the dental technician to model the zirconium dioxide coping with cusps support in order to ensure that the layer thickness of the veneer porcelain is consistent. Here the ZENOR Tec system provides reliable, flexible design and monitoring options. For example, ceramic fractures, so-called chipping, can be avoided. In order to allow perfect light transmission through the crown into the ceramic abutment down to the subgingival area we do not use opaque glass ionomer cements or zinc phosphate cements in the aesthetically relevant region. They would cause the cement margin to be revealed. Apart from causing technical difficulties, the use of prefabricated abutments constitutes the risk of positioning the shoulder too far subgingivally. As a result, this area cannot be monitored. If remnants of cement remain, this causes periimplantitis (Fig. 25).

Conclusion

Whilst there were no clinical studies available during the initial phase of making restorations with zirconium dioxide, there are now results from several multi-centre long-term studies. CAD/CAM restorations made of zirconium dioxide prove to be just as reliable as the golden standard. However, especially in implant dentistry...
they allow a quantum leap in terms of biocompatibility and aesthetics. By optimising the software, improving milling strategies, increasing the level of automation and extending the range of materials available some systems, including the ZENOB® Tec system, have succeeded in raising the level of economy and precision substantially. In this instance, the flexible design software does not limit dental technicians or dentists in their many different decisions to be taken with regard to treatment and design. In addition, particularly in the combination of implant dentistry and metal-free prosthetics made of zirconium dioxide frameworks, the fact that the ZENOB® Tec system is fully compatible with the implants in the wTAL system is of inestimable importance to patients, dentists and dental technicians.

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10 Strange Facts About Einstein

1. Einstein Was a Fat Baby with Large Head

When Albert's mother, Pauline Einstein gave birth to him, she thought that Einstein's head was so big and misshapen that he was deformed.

2. Einstein Had Speech Difficultly as a Child

As a child, Einstein seldom spoke. When he did, he spoke very slowly until he was nine years old. Einstein's parents were fearful that he was retarded - of course, their fear was completely unfounded!

3. Einstein Was Inspired by a Compass

Pauline Einstein gave birth to Einstein's Compass. When he was nine years old, Einstein's parents were fearful that he was turned, the needle always pointed in the same direction. He became estranged from his wife. For a while, the couple tried to work out their problems - Einstein even proposed a strange "contract".

4. Einstein Failed his University Entrance Exam

In 1905, at the age of 17, Albert Einstein applied for early admission to the Swiss Federal Polytechnical School (Eidgenössische Technische Hochschule or ETH). He passed the math and science sections of the entrance exam, but failed the history, languages, geography, etc. Einstein had to go to a trade school before he re-take the exam and was finally admitted to ETH a year later.

5. Einstein had an illegitimate Child

In the 1980s, Einstein's private letters revealed something new about the genius he had an illegitimate daughter with a fellow student Mileva Marić (whom Einstein later married). In a letter from Einstein to Mileva from September 19, 1905, Einstein also mentioned for the last time. After that nobody knew anything about Mileva Einstein-Marić.

6. Einstein Became Estranged From His First Wife, then Proposed a Strange "Contract"

After Einstein and Mileva married, they had two sons: Hans Albert and Eduard. Einstein's academic successes and world travel, however, came at a price - he became estranged from his wife. For a while, the couple tried to work out their problems - Einstein even proposed a strange "contract" for living together with Mileva.

7. Einstein Didn't Get Along with His Oldest Son

After the divorce, Einstein's relationship with his oldest son, Hans Albert, turned rocky. Hans blamed his father for leaving Mileva, Einstein's Compass, and for not considering marrying Mileva. Einstein and Mileva worked together on a project and then separate.

8. Einstein Was a Ladies' Man

Einstein left Mileva, Einstein's Compass, and son after the divorce. He considered marrying Eila Lowenthal. Actually, Einstein also considered marrying Elsa (his infidelity is listed as one of the reasons for the split), but she demurred.

9. Einstein, the War Pacifist, Urged FDR to Build the Atom Bomb

In 1959, alarmed by the rise of Nazi Germany, physicist Leó Szilárd convinced Einstein to write a letter to president Franklin Delano Roosevelt warning that Nazi Germany might be conducting research into developing an atomic bomb and urging the United States to develop its own. Einstein was heavily involved in this research.

10. The Saga of Einstein's Brain: Picked up in a Jar 13 Years and Driven Cross Country in a Trunk of a Buick!

After his death in 1955, Einstein's brain was removed without permission from his family - by Thomas Stoltz Harvey, a Princeton Hospital pathologist who conducted the autopsy. Harvey took the brain home and kept it in a jar. He was later fined for his refusal to relinquish the organ.

Although Einstein was a brilliant physicist, the army considered Einstein's security risk and (to Einstein's relief) did not invite him to help in the project.

The German dentist over-powered a female patient in her home and yanked out two dental bridges from her mouth because she had failed to pay her bill.

German dentist extracts payment from patient

German dentist over-powered a female patient in her home and yanked out two dental bridges from her mouth because she had failed to pay her bill.

The dentist from the Bavarian town of Neu-Ulm is now under investigation for assault and theft after arriving at the woman's home with his medical instruments to perform the unwarranted surgery.

According to police, the dentist knocked on the door of the 55-year-old woman on Monday evening and without saying a word forced her into her living room and tied her hands.

In a scene reminiscent of the movie Marathon Man, he then forced open her mouth and removed the $320 worth of dental work which the woman's insurance company had refused to pay.

According to the victim, he never said a word.

"The dentist is being investigated for assault for the way he forced open her mouth, and theft for taking the bridges," said Christian Owsinski, a police spokesman.

"The woman was in pain when she showed up at the police station," Mr Owsinski said the dentist, who has not been named, had not been arrested.

If convicted he could face discipline from both the health insurance company and the dental association that could jeopardise his practice.
DTI publishing group met in Athens

New licence partners and e-learning projects introduced—2009 meeting to be held at IDS Cologne

Daniel Zimmermann
DTI

In addition to the new media, the e-learning branch will be developed further as well. The company was able to win internationally esteemed partners such as Silicon Valley-based Adobe for new media, the company is publishing Dental Tribune America is going to hold a free of charge symposium during the Greater New York Dental Meeting in November. The meeting is one of the biggest dental events in the United States and attracts more than 60,000 dentists each year.

Since 2005, the Licence Partner Meeting has taken place on an annual basis during the International Dental Show in Cologne, Germany, as well as a hosting country where Dental Tribune is being published. Two years ago, the meeting was held in Sofia, Bulgaria and Milan, Italy, later this year. Furthermore, American affiliated company Dental Tribune America is having the group, new events were discussed such as two international congresses in cosmetic dentistry in Las Vegas, USA, when the American affiliate was founded.

In its efforts to meet its mandate to update the clinical, technical and practical skills of the practicing dentists, The Institute of Dental Sciences in Karachi initiated the intensive comprehensive practical implantology surgical session for general dental practitioners who wish to seriously include Dental Implants as part of their routine DENTAL PRACTICE.

Publications of the DTI Group are published in over 60 countries and supply more than half a million dentists all over the world with the latest information and news in dentistry. Along with the positive development of the group, new events were discussed such as two international congresses in cosmetic dentistry. Publications of the DTI Group are published in over 60 countries and supply more than half a million dentists all over the world with the latest information and news in dentistry. Along with the positive development of the group, new events were discussed such as two international congresses in cosmetic dentistry.