New report says parents to blame for children’s poor oral health

By DTI

MANCHESTER, UK: A lack of knowledge about the importance of early oral health care measures and the availability of treatment among parents has led to almost every seventh child aged 8 or under in the UK having never seen a dentist, according to a new report by dental group mydentist in Manchester. The survey also found that one in ten of those children who had actually seen a dentist had at least one filling done, resulting in an estimated burden of £22 million annually for the National Health Service.

The report is in line with new findings by the Faculty of Dental Surgery at the Royal College of Surgeons of England earlier this week that oral health among the nation’s youth is worsening, with more children than ever sent to hospitals for tooth extractions owing to severe decay. While the Royal College of Surgeons has identified increasing sugar consumption as the main contributor, mydentist report blames parents who are unaware of or fail to implement appropriate oral health care measures at home for the dental problems.

Among its findings are that only a quarter of the children of the parents surveyed brushed their teeth for the recommended two minutes twice daily. Many parents also failed to identify things that are actually beneficial to their children’s health, such as fluoride, which is 13 per cent considered to be harmful.

On the contrary, almost a fifth of parents thought that acidic beverages like fruit smoothies, which are actually beneficial, might demineralise the teeth. But one in four believed fruit juice to be harmful, making it the third most popular drink for children.

Despite more children in the UK suffering from dental problems, many have never been taken to a dentist.

The mydentist survey was conducted among 2,000 parents throughout the UK. It found that those in Wales were most likely to take their children to see a dentist early on. Children living in the North West also scored higher in terms of personal oral hygiene, brushing their teeth for longer than youngsters in any other region.

Maltreatment case settled with five figure number

By DTI

CHELMSFORD, UK: A dentist from Benfleet in Essex is reported to have paid an amount of £16,000 to settle a lawsuit by a former patient over allegations of maltreatment. Charges against him included having damaged the facial nerves of the 49-year-old civil servant, Graham Hancock, during a third molar extraction at his dental practice in Chelmsford.

Hancock told the Essex Chronicle that he had suffered from continuous facial pain, numbness and loss of taste after having undergone the procedure in late 2013. After his condition worsened, he was sent to King’s College Hospital in London for specialist treatment.

The case was taken to court after other oral surgeons found the dentist’s work to have been unprofessional. Among other things, he failed to take a radiograph to identify the risks of the procedure and to inform the patient of other treatment options. Hancock’s solicitors said currently working at a dental practice in Basildon, the dentist is reported to have not admitted liability despite having agreed to pay the five-figure settlement.

He has also been under surveillance by the General Dental Council on several charges of misconduct and poor professional performance, including allegations of not having maintained appropriate standards of infection control and having exposed patients to dental panoramic radiography without justification while working at his former practice in Southend-on-Sea between September 2010 and October 2012.

Halitosis association launched

In order to address the lack of scientific data on halitosis, the International Association for Halitosis Research (IAHR) was officially formed on 5 June at a meeting of leading halitosis researchers during EuroPerio8 in London. As new insights into the problem of bad breath are rapidly expanding, the IAHR aims to promote research on all aspects of halitosis and its related issues and to distribute and publicise the research. “Not only do we need to create awareness among the public, but we should also enhance the information and treatment advice for professionals,” president Dr Edwin Winkel from the Netherlands said.

Despite affecting a vast number of people worldwide, sound epidemiologic data on halitosis is rare. While 9 in 10 cases of halitosis are attributable to tongue coating, gingivitis, periodontitis and other conditions in the oral cavity, a minority of cases are caused by systemic diseases or conditions.

ESSENTIAL DENTAL MEDIA
Leeds collaborates over future of oral health care in Europe

Most Brits avoid showing their teeth in photographs

Using de-identified data from millions of health records across Europe, the researchers will work with dental professionals and insurors to identify effective strategies for preventing disease in each country. Providing continuous feedback to shape best practice, a set of key performance indicators will be developed against which dentists and health care systems can measure themselves.

“The World Health Organization has said that dental diseases are the most common chronic diseases known to man. We want to change this,” said Prof Helen Whelton, Dean of the University of Leeds’ School of Dentistry and project lead. “The hope is that, by continually assessing and feeding back the performance of dental professionals and healthcare systems in keeping teeth healthy, it will foster change in practices and encourage a move to more preventive dental care.”

“We will be using secure, de-identified medical records to develop a model with a focus on preventing dental problems, which gives dentists and health systems the ability to measure their success in making patients healthier,” Whelton explained. “We will look at things such as how long teeth remain healthy with no need for treatment or, at country level, the amount spent on extractions each year. This information can be compared across different systems and countries.”

The project will have access to eight European patient record databases from countries including Britain, Denmark, Germany, Hungary, Ireland and the Netherlands. In addition to hearing the views of professionals and insurers, the project will consult with patients in the participating countries to identify their preferences and gain their perspectives on the dental care they receive.

“This is a fantastic example of collaboration between universities, the public sector and the private sector, with the aim of improving the dental health of an entire continent, and we hope this will feed into the reform of healthcare systems globally,” Whelton concluded.

By DTI

Leeds, UK: Dental treatments cost an estimated £97 billion a year across the EU, yet dental diseases are almost entirely preventable. A new research project, funded through a €6 million grant from the EU, aims to bring about a shift in dental care practices, from a focus on treating teeth by extraction and fillings to more effective oral health care treatments to prevent disease in the first place.

The four-year project will be led by the University of Leeds, in conjunction with the Academic Centre for Dentistry Amsterdam and Heidelberg University, in collaboration with NHS England, as well as universities and dental insurers from across Europe.

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Dental Circle meets in London to celebrate future of professional social media

By DTI

LONDON, UK: With temperatures skyrocketing last month in the capital, the organisers of Dental Circle could not have chosen a better time to hold its first major networking event. Consequently, hundreds of members of the professional social media website met in London to share ideas and celebrate the achievements of the ambitious platform.

And there was plenty to celebrate at the event sponsored by dental implant solutions provider Straumann. In just one year after launching, the site had in mind when launching the network works similar to exclusive social media websites like ELEQT, but one that fits in perfectly with the ethos founders Amit and Dev Patel had in mind when launching the site. Instead of being open to anyone, like Facebook or Twitter, the network network works similar to exclusive social media sites like ELEQT, but without the hurdle of having to pay once you are in. Professionals interested in joining Dental Circle just have to be registered with the General Dental Council and want to be part of an ever-growing network of professionals.

“In the current employment market, young dentists are struggling to find jobs and make the right connections. Specialists too are receiving fewer referrals and principal dentists are flooded with ambiguous CVs from across the world,” explains Amit Patel, who is also a London-based dentist. “Dental Circle is the professional network for dental professionals, with the aim of connecting all dentists, therapists, hygienists, nurses and laboratory technicians.”

Once approved, members are given a personal profile page, which they can customise with their interests and achievements, and load images of their own cases and share them with the rest of the community. From these, the best are awarded on a regular basis. Furthermore, members can join special interest groups to explore or deepen their knowledge of different aspects of dentistry. These are led by mentors, including clinical gurus such as Chris Orr and Zaki Kanaan.

“Young dentists are more ambitious than ever, looking to advance their careers through courses and investing in dental products and practices early on. Our goal was to create a website where they can find support from a variety of professional sources,” Patel said.

In addition to its online presence, which includes common social media websites like Facebook, Dental Circle has recently begun organising roadshow events that give members and other professionals the opportunity to network with prominent experts, as well as to try out the latest technologies and tools. Three of these events, intended to cover clinical topics ranging from short-term orthodontics to posterior direct restorations, are scheduled for later this year in London, Leeds and Manchester.

“The Dental Circle Roadshow events are a new concept, aimed at young dentists, helping to build foundations, but also advance current techniques,” said Dev Patel.

Registrations for each of the one-day events, which are worth seven hours of continuing professional development, are still being accepted. Professional interested in attending the workshops can register at dentalcircle.com/roadshow.

Capital prepares for International Orthodontic Congress

By DTI

LONDON, UK: The International Orthodontic Congress (IOC) is held once every five years and offers up to 10,000 orthodontists and allied professionals a unique platform to meet, network and exchange knowledge and ideas with their colleagues and peers from across the globe. The World Federation of Orthodontists (WFO) and the British Orthodontic Society, the two largest dental specialist groups in the UK with over 1,800 members collectively, will be hosting the eighth edition of the congress in London, from 27 to 30 September.

The congress lectures and presentations will be held in English, however, simultaneous translation will be provided for some sessions. In addition, during the course of the congress, several social events are planned for the evenings, including an international reception at the famous Madame Tussauds wax museum and a gala dinner at the Old Billingsgate, an extraordinary and unique venue that is situated in a prime position on the River Thames which was once the world’s largest fish market. Tickets for these events can be purchased upon registration.

According to the WFO, one of the reasons the congress is taking place in London is because of the city’s heritage and its attractions on offer. As a city of history and culture, delegates will have numerous opportunities to enjoy many of the sights, including castles and palaces, historical buildings and monuments, theatres and opera houses and other well-known places that were described by famous authors, such as William Shakespeare and Charles Dickens.

Online registration for the event is open until 17 September online but delegates can also register on-site at the registration desk on 27 September.
1. BRITISH MUSEUM
The world-famous British Museum exhibits the works of man from prehistoric to modern times, from around the world. Highlights include the Rosetta Stone, the Parthenon sculptures and the mummies in the Ancient Egypt collection. Entry is free but special exhibitions require tickets.

2. NATIONAL GALLERY
The crowning glory of Trafalgar Square, London's National Gallery is a vast space filled with Western European paintings from the 13th to the 19th centuries. In this iconic art gallery you can find works by masters such as Van Gogh, da Vinci, Botticelli, Constable, Renoir, Titian and Stubbs. Entry is free but special exhibitions require tickets.

3. NATURAL HISTORY MUSEUM
As well as the permanent (and permanently fascinating!) dinosaur exhibition, the Natural History Museum boasts a collection of the biggest, tallest and rarest animals in the world. See a life-sized blue whale, a 40-million-year-old spider, and the beautiful Central Hall. Entry is free but special exhibitions require tickets.

4. TATE MODERN
Sitting grandly on the banks of the Thames is Tate Modern, Britain's national museum of modern and contemporary art. Its unique shape is due to it previously being a power station. The gallery's restaurants offer fabulous views across the city. Entry is free but special exhibitions require tickets.

5. THE LONDON EYE
The London Eye is a major feature of London’s skyline. It boasts some of London’s best views from its 32 capsules, each weighing 10 tonnes and holding up to 25 people. Climb aboard for a breathtaking experience, with an unforgettable perspective of more than 55 of London’s most famous landmarks – all in just 30 minutes!

6. SCIENCE MUSEUM
From the future of space travel to asking that difficult question: “who am I?”, the Science Museum makes your brain perform Olympic-standard mental gymnastics. See, touch and experience the major scientific advances of the last 300 years; and don’t forget the awesome Imax cinema. Entry is free but some exhibitions require tickets.

7. VICTORIA & ALBERT MUSEUM
The V&A celebrates art and design with 3,000 years’ worth of amazing artefacts from around the world. A real treasure trove of goodies, you never know what you’ll discover next: furniture, paintings, sculpture, metal work and textiles; the list goes on and on… Entry is free but special exhibitions require you to purchase tickets.

8. TOWER OF LONDON
Take a tour with one of the Yeoman Warders around the Tower of London, one of the world’s most famous buildings. Discover its 900-year history as a royal palace, prison and place of execution, arsenal, jewel house and zoo! Gaze up at the White Tower, tiptoe through a medieval king’s bedchamber and marvel at the Crown Jewels.

9. ROYAL MUSEUMS GREENWICH
Visit the National Maritime Museum - the world’s largest maritime museum, see the historic Queen’s House, stand astride the Prime Meridian at Royal Observatory Greenwich and explore the famous Cutty Sark: all part of the Royal Museums Greenwich. Some are free to enter; some charges apply.

10. MADAME TUSSAUDS
At Madame Tussauds, you’ll come face-to-face with some of the world’s most famous faces. From Shakespeare to Lady Gaga you’ll meet influential figures from showbiz, sport, politics and even royalty. Strike a pose with Usain Bolt, get close to One Direction or receive a once-in-a-lifetime audience with Her Majesty the Queen.
Bio-Emulation movement continues to grow

By DTI

BERLIN, Germany: On 4 and 5 July, the 2015 Bio-Emulation Colloquium was held in Berlin in Germany. The event, which was organised by the Dental Tribune International team in close collaboration with the Bio-Emulation Group, attracted more than twice the number of participants compared with last year. Overall, more than 300 dentists and dental technicians attended the extensive programme on biomimetics in dentistry, including 16 lectures and 13 workshops.

After the successful premiere of the Bio-Emulation Colloquium last year in Santorini in Greece, this year’s meeting was held under the theme “Bio-Emulation Colloquium 360°”. Key opinion leaders in adhesive and restorative dentistry educated the participants on methods and techniques to achieve high aesthetic standards and emulate nature using a histotransplantation approach.

During the sessions, particularly the workshops, attendees had the opportunity to learn more about the mechanical and optical properties of natural teeth and gain knowledge on using existing techniques and materials. A considerable number of workshops were fully booked, for instance, Dr Pascal Magné’s session on dental biomimetics and restorative dentistry.” They regarded dental implants as a ‘panacea for all cases of missing teeth and overestimated their functionality,” the scientists stated.

The study examined a sample of 28 adults between 35 and 64 years old who had never been engaged in a dentistry-related job. Moreover, for inclusion in the study, participants had to have at least one missing tooth and to have heard about dental implants, but never received one or had any dental consultation regarding dental implants.

The participants were divided into six focus groups and had to discuss dental implants and their individual knowledge about them. All of the group discussions were transcribed verbatim and subjected to thematic content analysis following a grounded theory approach.

The Chinese research team found that the participants acquired information on dental implants through various means, such as patient information boards, printed advertisements, social media, and personal connections. According to the researchers, the participants expected dental implants to restore patients’ appearance, function and quality of life to absolute normality. “They regarded dental implants as a panacea for all cases of missing teeth and overestimated their functions and longevity,” the scientists stated.

The study, titled “Public perceptions of dental implants: A qualitative study,” was published online on 8 May in the Journal of Dentistry.

Study reveals unrealistic public expectations regarding implants

By DT Asia Pacific

HONG KONG: Dental implants are gaining increasing popularity in the treatment of partially dentate or edentulous patients, and both the industry and dental professionals offer detailed information about implant materials, functions and procedures.

Yet, many people are not well informed and tend to overestimate the functionality of implants, while underestimating the expertise needed for implant dentistry. These are the findings of a qualitative study conducted at the University of Hong Kong.

The researchers aimed to evaluate the public’s acquisition of information and their perceptions regarding dental implants, as well as the effects of these perceptions on their care-seeking and decision-making behaviour.

The study examined a sample of 28 adults between 35 and 64 years old who had never been engaged in a dentistry-related job. Moreover, for inclusion in the study, participants had to have at least one missing tooth and to have heard
“Xylitol is here to stay”

An interview with Professor Emeritus Kauko K. Mäkinen, Finland

During the early 1970’s, xylitol and other natural sweeteners were extensively tested in Finland as potential replacements for sugar. The series of over 20 research reports, published together in Acta Odontologica Scandinavica in 1979, became collectively known as the “Turku Sugar Studies.” Approaching the 40th anniversary of the publication, Dental Tribune had the opportunity to speak with Professor Emeritus Kauko K. Mäkinen, who led the original Turku research together with Arje Scheinin, K. Mäkinen, who led the original Turku studies, did you expect to find xylitol to be so beneficial, especially for oral health?

We did not anticipate the magnitude of this preventative effect. We considered it a welcome surprise. Later, of course, after learning how xylitol works and after we learned to understand the chemical mechanisms involved, we started to regard the findings as natural and expected.

Are there any known side effects?

Regular consumers who use xylitol for dental purposes have no side effects. If somebody accidentally consumes large single doses, for example, 20–30 grams, some individuals may have transient diarrhoea. However, sorbitol, mannitol and common milk sugar form osmotic solutions all of which are difficult to diffuse through the walls of the intestine. As a result the use of xylitol in these small amounts is well tolerated. Many general practitioners are trained in the use of xylitol for caries prevention.

“Overall caries prevention takes place as a result of multi-faceted efforts and programs, xylitol being a part of the whole.”

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Is there a measurable impact on caries levels and dental health that can be attributed to the sweetness of xylitol?

We cannot give any figures of the effect of xylitol in caries incidence in the above instances. Overall caries prevention takes place as a result of multi-faceted efforts and programs, xylitol being a part of the whole. It is impossible to differentiate between the effect of each individual preventative measure since all of them are in action simultaneously, such as tooth brushing, the use of fluorides, the application of sealants, etc.

Of course, small children must use xylitol under parental guidance. Xylitol gum is habitual and is based on the consumption of sufficiently-large daily amounts that are taken at least three to five times a day.

Do you have any data on how much xylitol is consumed in Finland or worldwide?

These figures are possessed by xylitol manufacturers and they do not provide any production-related information to us. However, the annual production worldwide must be tens of thousands of tons since xylitol is produced in China, Russia and in other countries. The first true xylitol plant in the world was in Finland and was sold to DuPont a few years ago. When production started in Finland in the 1970’s, 5,000 to 50,000 tons were made during the first few years, but overall, production is by far much larger now.

How should the sweetener be used in daily life?

My current recommendation is about 7-10 grams per day, evenly distributed throughout the day. The first dose in the morning, the last after oral hygiene at bedtime. Always after meals and sugary snacks. Use it about one stick of gum but the gum must be 100 % xylitol. One may ‘tolerate’ some maltitol in it, but no sorbitol, unless the sorbitol amount is very small (<5 %). Some companies use only 5-10 % xylitol and call their product “a xylitol gum”, which is false.

Do you think xylitol could be playing a greater role in the future, maybe in developing countries?

Xylitol is here to stay. We are already using xylitol in developing countries. Vietnam is one example and, in thinking, it is still a developing country. Xylitol is currently being used in hundreds of dental, medical, cosmetic and other products all over the world. Its popularity is increasing steadily, but not abruptly.

Thank you very much for the interview.
Sunstar awards research and promotes Barcelona session at EuroPerio8

By DTI

LONDON, UK: In order to promote research on the association between periodontal disease and diabetes, as well as oral and systemic health, the Sunstar Foundation has been organising scientific seminars around the world since 2008. During Sunstar-sponsored sessions at EuroPerio8, international experts lectured on periodontitis and its oral and systemic effects, as well as the role of nutrition in severe periodontitis and new regenerative medicine options for periodontal patients Over-good dental professionals attended the sessions.

As a partner of the European Federation of Periodontology, Sunstar also hosted the fifth World Perio Research Awards, which were established in 2003. This year, the three winning papers were those submitted by Dr Lui Tan et al. (first place) from China, Dr Marjorie Jeffcoat et al. (second place) from the US, and Dr André Luis Casia et al. (third place) from Brazil. The awards recognize research advances in oral and systemic health.

Mayumi Kaneda, Sunstar’s global public relations director, told Dental Tribune in London: “For the Sunstar Foundation, it is very important to support researchers. I feel that this is our mission as a foundation and we really believe that it helps the development of science and will also translate to the patients in the end. The trophy for the prize was designed by Italian designer Claudio Hellini. It symbolises an infinity sign and expresses our wish for researchers never to stop continuing their work. This trophy is also granted to winners of the Sunstar World Dental Hygienist Award, which application deadline will be this year on 31 December.”

“Sunstar is not only committed to supporting clinical studies and science, but we’re also committed to promoting education. Being seen as a partner in education at every stage is extremely important to us. We really want to help professionals become aware of the patient’s perspective: they are all key players when it comes to achieving a better quality of life, which is actually our foundation’s motto. We really believe in it—in all our efforts we have that goal in mind. One example is the project done in collaboration with Quintessence Publishing to produce the latest chapter of the Cell-to-Cell Communication oral and general health animated video which premiered at EuroPerio,” Kaneda stated.

Sunstar also announced the 19th Joslin-Sunstar Diabetes Education Initiative (JSEI) session, the fourth in Europe, to be held on 6 November in Barcelona in Spain. After the success of the 2014 JSEI seminar in Frankfurt/Main in Germany, which was attended by a record number of 350 delegates, the next seminar will again focus on the latest cutting-edge research on the link between oral and systemic health—which is still frequently underestimated. The format of the meeting will encourage interaction between participants at the symposium delivered by distinguished speakers from Spain and the US. Sunstar also announced that the 20th JSEI event will be held in Singapore in January 2016. Again, experts interaction between professionals, in fact, the interactive aspect is very, very important to us. We are trying to make everyone comfortable enough to ask questions, as we really want to start discussions between these professionals,” Dr Marzia Massignani, Scientific Affairs Manager at Sunstar, said.

This year, Sunstar will be introducing the interactive JSEI concept to universities across Europe. Students will be able to take part in the event via a live webinar, enabling a greater audience reach. “We are collaborating with key universities from different countries that include JSEI in their education schedule. So far, the feedback has been very good and several universities have already agreed to be involved,” Massignani stated.

The seminar is supported by the Sunstar Group, the FDI World Dental Federation and the Sociedad Española de Periodoncia y osteointegración. Dental professionals can learn more about and register for the events at www.jsdei-seminars.com. More information about the company can be found at www.sunstar.com.

With promising results from its app, Oral-B reveals new trial and whitening kit

By DTI

LONDON, UK: Users of electric toothbrushes are brushing over twice as much as users of manual toothbrushes, reaching in a worldwide trend of improved oral care patterns, the dental consumables manufacturer, Oral-B announced at EuroPerio8 in London. This promising data was retrieved from its recently improved Oral-B app, which is available to users of its SmartSeries power toothbrushes and allows dental professionals to manage and follow the brushing habits of their patients between appointments.

In addition to extended brushing times, over half of the recorded brushing sessions in the app included flossing, rinsing and tongue cleaning. Through a combination of these statistics and consumer feedback, the company deduced that users are encouraged to brush longer, but with less force, which is more aligned to their dental professionals’ recommendations. While Oral-B power toothbrushes have always offered users a great brushing experience, they are now able to assist patients in keeping up good oral hygiene between dental appointments, the company said.

Delegates were also able to experience the company’s newest Test Drive programme at one of Oral-B’s brushing booths at EuroPerio. According to the company, this gave both dental professionals and their patients the opportunity to try out their power toothbrushes, without the risk of cross-infection, by using specific handles and replacement heads that feature a sealing insert to prevent saliva from entering the brush. Further protection is provided by a disposable sheath that covers the handle itself. After cleaning and disinfecting it, the handle is ready to be used again with a fresh head.

Exclusively distributed in Europe by Henry Schein, Oral-B further revealed its 3D White Whistleres, which is an easy home-whitening treatment that is said to offer results that last up to six months. They use the same enamel-safe whitening ingredient that dentists use, which reaches below the enamel surface to remove stains. While a dental professional first applies the strips, consumers can perform all the subsequent whitening applications at home. The results are visible within 14 days, according to the company.

A Procter & Gamble oral care brand, Oral-B was a gold sponsor of EuroPerio8. It also supported two sessions that focused on the issue of hypersensitivity, the main challenges faced in professional therapy with regards to aesthetic demands and achieving long-term success.
Owning a dental practice or group has always presented challenges, but the marketplace has never been more crowded than it is now. With an ever-increasing level of choice for patients, it is more important than ever for dental businesses to stand out from the crowd. While we of course all know the value of providing a first-rate customer service, and that will always remain the most important factor, how many of us recognise the importance of creating and building a brand?

Generally, in dentistry, branding has not been regarded in the same way it is in the corporate world, where multi-national businesses expand on the strength of their brands. But now, with the growth of dental corporates and multi-practice groups, branding is becoming an increasingly important factor. That is not to say that branding is only the domain of the big players. Creating a brand which is unique and people can identify, talk about, recommend to others and remember is just as important for a single practice, and in some situations even more so, where there are other local competitors for existing and potential clients to choose from.

Effective branding is also important when looking to expand, franchise or sell one’s business. When dentists are adding another site to their existing portfolio, doing so under a brand will enable people to know who is moving into their area, and can help give confidence that this is an established dental business taking over their local site. One example being a business in North East England I act for, the Burgess & Hyder Dental Group, who now operate 11 clinics across the region under their brand. They are welcomed into each area as their brand is widely known, as is the quality associated with it.

Equally in franchising, the importance of a strong brand is crucial to enable a business to thrive in other areas relies on an existing strength of reputation. Through being part of that recognisable brand, patients will know that each site under that umbrella will offer the same levels of service and quality. Another of my clients, Damira Dental, has recently rebranded from Aspire Dental Care, and is pursuing a franchising model under its new and fresh identity. The business, which has 14 sites across the South of England, has amassed a strong reputation during its eight years in operation, and the strength of its service coupled with its branding will allow that to be replicated across the UK.

The creation of a brand identity, which can help support the expansion of a business, can also be of great importance when it comes to selling. It is much easier to market a business which is well known and has invested time and effort in standing out from the crowd. To a potential buyer, they are important factors in instilling the confidence to take on a site in a new territory.

In this day and age of dentistry being an increasingly competitive business, distinguishing oneself from the many other players has never been more important, and is something that must be given due consideration.

Amanda Maskery is one of the UK’s leading dental lawyers. She is Chair of the Association of Specialist Providers to Dentists (ASPD) in the UK and a Partner at Sintons law firm in Newcastle. She can be contacted at amanda.maskery@sintons.co.uk.

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**Why dentistry needs branding**

By Amanda Maskery, UK

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Online dentistry should be more active on Facebook

By Naz Haque, Dental Focus

It is commonly accepted that Facebook is one of the largest and most important online platforms in 2015. As it continues to dominate the social media landscape and hold a massive captive audience, the critical question is, are you utilising Facebook and, if not, why not?

Early 2015 statistics from We Are Social established that there were 1.366 billion active Facebook users in January 2015, 83 per cent of whom were accessing Facebook from mobile devices. Consider that the average social media user clocks in 2.2 hours of usage per day (15.4 hours per week), while the average daily TV viewing time for a professional is now reduced to 1.2 hours per day (8.4 hours per week)—you can see how social media is driving and changing people’s habits.

This year, Facebook has been pushing the Facebook pixel, which could loosely be compared to a website cookie. These can be created from your Facebook business page and then placed into the coding back-end of your website. The strength of these pixels is that they recognise visitors from your website and put you in a position to display adverts to this audience via Facebook.

The real beauty is when one fully recognises the power of the pixel. Your audience may have found your website via Google, Bing, Yahoo!, Yell or word of mouth. The Facebook pixel tracks them and any pages they visit on your site. If a potential customer visits your tooth whitening page, for example, you can then show them tooth whitening adverts. Or if one looks at an Invisalign page, you can show them your Invisalign offer.

Essentially, you first qualify your audience and then show them adverts relevant to their habits. The data gathered from a pixel can be used to create a lookalike audience. Facebook will monitor habits and trends in the behaviour of visitors to your pages and then duplicate this on a larger scale by identifying users on Facebook who mirror these habits within the parameters you set, such as a 5 kilometre radius of your location.

There is one other trick Facebook pixel has up its sleeve: it allows you to upload e-mail addresses of customers/buyers so you can specifically target them with adverts too—just make sure you have their consent.

Most websites are now mobile friendly and most Facebook users are on mobiles. This increases the chance of your adverts being seen even further. The average cost of a click on Facebook is 27p, you can send targeted adverts to a specific qualified audience and buy data to a mirror audience for next to nothing, and the return on investment (£150 + take-home trays) can be very attractive.

Considering all these points, I would make use of this opportunity as soon as possible in 2015 before everyone else does and drives up the cost of a click to something comparable to Google (a minimum of £2.50+).

“Most websites are now mobile friendly and most Facebook users are on mobiles.”

Naz Haque, also the Scientist, is Operations Manager at Dental Focus. He has a background in mobile and network computing, and has experience supporting a wide range of blue-chip brands, from Apple to Google. An expert in search engine optimisation, Naz is passionate about helping clients develop strategies to enhance their brand and increase the return on investment from their dental practice websites. He can be contacted at naz@dentalfocus.com.
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Endodontic treatment of teeth with significant coronal destruction is a very common clinical procedure in the restorative clinical practice. When we are faced with this clinical situation, there will be an eminent need for the use of intra-radicular retainers to obtain greater stability and retention of the restoration to the remaining teeth.1, 2

The use of a physiological pin is proposed for the rehabilitation of anterior teeth with extensively compromised root canals and with significant loss of dentine tissue.3 In this restorative method, in addition to the fibre-glass pin, a compound resin is used to model the radicular conduit with the objective of reducing the space that would be filled by the resin cement.

In this way, the combination of two restorative materials (pin and compound resin) will serve and behave biomechanically as a replacement of the dentine structure lost.4

Anatomical pins have an extremely favourable prognosis in cases of fragile roots due to loss of dentine structure and they contribute significantly to the rehabilitation of the tooth in terms of both masticatory function and aesthetics.1 In addition, the fibre-glass pins have a more uniform distribution of tension in the occlusal and radicular regions compared with metal pins.5 Etching and silanisation of the pins are of the utmost importance for promoting interfacial adherence, especially in the region prepared for the core.6, 7

This study reports on a clinical case that demonstrates the preparation technique for the anatomical pin, using fibreglass pins and compound resin, in a maxillary central incisor with weakened roots, with the objective of re-establishing the coronal portion of the tooth.

Case report

A young male patient came into the integrated dentistry clinic at Universidade Severino Sombra needing restorative treatment of tooth #21. In the clinical and radiographic examination, significant coronal destruction and satisfactory en-
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dodontic treatment were noted (Figs. 1–3).

Restoration with an anatomical pin was proposed to the patient, in order to recover the function and aesthetics of the tooth and provide for future rehabilitation of the tooth with a full ceramic crown.

First, the decayed tissue was removed from the remaining tooth structure and the fibreglass pin was selected (Exacto K, Angelus), as well as the accessory pins (Referpin, Angelus; Fig. 4).

The radicular conduit was isolated with mineral oil and the compound resin was applied (Fill Magic NT Premium, Vigoredent/COLITENE) over the remaining tooth with the aid of a #1/2 Suprafil spatula (SS White; Figs. 5 & 6).

After filling of the conduit with resin, the Exacto pin and the pre-silanised accessory pins (Silano, Angelus) were inserted with the application of an adhesive (Fusion-Duralink; Angelus; Figs. 7–9). Next, the initial photoactivation was conducted on the pin and resin for 20 seconds.

Finally, the coronal reconstruction was performed with the previously used compound resin in incremental portions and photoactivation was conducted (Figs. 10 & 11).

A marking was made on the most incisal portion of the pins to guide the subsequent cropping of the pins (Fig. 12). The anatomical pin was then removed and the final photoactivation was performed for 40 seconds (Fig. 13). Soon after, the pin was adapted to the remaining coronal structure (Fig. 14).

After the preparation phase of the anatomical pin and coronal portion of the core with compound resin, preparation for adhesive cementation to the remaining tooth began (Fig. 15).

Acid etching of the pin was performed for 30 seconds, and then it was washed and dried. The silane was then applied (Silano) for 20 seconds, as well as the adhesive (Fusion-Duralink) with subsequent photoactivation for 20 seconds (Figs. 16–18).

After the anatomical pin had been prepared, acid etching was performed on the remaining tooth for 20 seconds, followed by washing and drying it lightly to leave the dentine moist (Fig. 19). The dentine primer and the adhesive (Fusion-Duralink system) were applied and then photoactivated for 20 seconds (Fig. 20).

The cementation was done with auto-polymerisable resin cement, waiting a period of 5 minutes for the cement to chemically set (Figs. 21 & 22). Once the cementation of the anatomical pin was finished, the adhesive was applied to the coronal portion and photoactivated for 20 seconds, and the compound resin was applied in incremental portions for creation of the core (Figs. 23 & 24).

In order to complete the restorative process, the prosthetic preparation of the core was performed for future seating of a full ceramic crown (Fig. 25).

Conclusion

The anatomical pin constituted a clinical alternative for coronal and radicular reconstruction of endodontically treated teeth with significant destruction of dentine. In addition to rehabilitating the tooth, this clinical approach promotes a more balanced distribution of masticatory forces without compromising the remaining tooth structure, minimising the risk of radicular fracture.

Moreover, this restorative alternative provides the possibility of an aesthetic result with the use of a metal-free full crown.

Editorial note: A complete list of references is available from the publisher.

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Going (unintentionally) green

The unexpected bonus of switching to CAD/CAM and same-day dentistry

By Dr Joel Strom, USA

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

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

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

**CAD/CAM: Why dive into digital?**

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

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

Clinicians, too, reap several benefits. Digital scans equal easier impression procedures that enable accurate reproductions of patients’ dentitions. Restorations can be designed in the office without communication or transfer to a dental laboratory, eliminating back-and-forth exchanges that cause delays or less than optimal results. In fact, restorations can now be fabricated with more patient input, since intuitive CAD software enables dentists to easily design restorations on-screen while remaining chairside, providing patients with that “wow” factor as they see what digital technology is allowing dentists to do. Once designed, the restorations can be immediately milled and seated immediately. Essentially, in-office CAD/CAM systems are revolutionizing how restorative dentistry is practiced.

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

**Digital practice equal green practices**

Since CAD/CAM technology was first introduced decades ago, early adopters and technology enthusiasts have encouraged integration of these systems for various practical and aesthetic reasons. As the Planmeca PlanScan System (E4D Technologies) is introduced, the environmental benefits increase. While clinicians may think they are only saving themselves hassle or time by purchasing an easier-to-use piece of equipment, they’re also saving energy—literally. With digital technology, impressions can be viewed instantly on-screen, allowing any mistakes to be instantly corrected. Additionally, because digital impressions can be viewed instantly with software that allows users to see potential errors, any mistakes are quickly averted with a second digital scan that requires no extra materials or waste. It is not uncommon for dentists to take a second digital impression because of errors caused by salivary or air pockets in the impression material or to have a backup on hand in case there are problems down the road. Over time, material waste created using traditional impression methods adds up. Using digital technology not only streamlines the process but ensures that materials, time and money aren’t wasted.

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**An average dental practice uses 364 gallons of water per day. Think how much you can save by getting rid of extra washing cycles.**

**Greener materials:**

Using all ceramics instead of amalgam

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

The majority of the materials for same day CAD/CAM dental procedures are generally composite or all-ceramic blocks, so they’re non-metal-involved. These metal-free restorations can often be used without reservation for various indications, including single-unit restorations, inlays and onlays. While the benefits of these materials have been well-documented (e.g., aesthetics, ease-of-use, wear optical properties), they provide tangible environmental benefits as well.

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

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

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

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**The Environmental Protection Agency (EPA) estimates that nearly 50 per cent of all mercury entering the environment originates in dental offices.**

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

**An average dental practice uses 364 gallons of water per day. Think how much you can save by getting rid of extra washing cycles.**
Currently, the American Dental Association (ADA) does not have national regulations in place for amalgam separators, so many dental practices and laboratories aren’t compelled to use them.

Although designing and milling all-ceramic materials still requires energy and results in some waste materials, can they really compare with the toxic byproducts of metal-based restorations?

Crunching the numbers: CAD/CAM math

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

Because same-day in-office CAD/CAM dentistry reduces the number of appointments from two (or possibly more) if the restoration does not fit to one, it stands to reason that every dentist who incorporates these procedures would positively impact the environment by reducing the number of automobile trips patients make to the practice. This would result in a 50 per cent reduction in gasoline and oil product use.

With a carbon content of 2,421 grams, one gallon of gasoline produces approximately 19.4 pounds per gallon of carbon dioxide emissions. This is calculated by multiplying the carbon content (2.421) by the amount of carbon that remains unoxidized (0.99) by the ratio of the molecular weight of CO2 (44) to the molecular weight of carbon (12).

Using the state of California as an example, where approximately 10 per cent of the 100 million laboratory dental restorations are completed in the United States every year, we can calculate an approximate savings. If four gallons of gasoline are used for a round trip to the dentist for restorative procedures, that number could be cut in half saving four gallons of gasoline per restoration. Four gallons of gasoline multiplied by 10 million restorations would equal a savings of 40 million gallons of gasoline for restorative procedures in the state of California alone. This, in turn, would equal a reduction of carbon dioxide emissions by 776 million pounds per gallon each year (assuming the previously calculated 19.4 pounds per gallon measurement).

If we extrapolate to the United States as a whole, we can calculate that this would equal 400 million gallons of gasoline saved and 7,760 million pounds per gallon of carbon dioxide emissions eliminated, per year. This would have a deleterious impact on automobile trips to and from the dentist for restorative procedures. While same-day dental procedures may not save the world, their potential impact, even estimated, is undeniable.

Conclusion

In-office CAD/CAM systems’ advantages are limitless. In addition to the clear financial and practical benefits they bring, their positive impact on the environment makes the decision to upgrade even better. They remove toxic, wasteful and disposable materials and practices from the equation, replacing them with greener practices that have a tangible influence. While the clinical advantages of CAD/CAM systems and same-day dentistry continue to be rightfully celebrated, their ecological advantages should not be overlooked.

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References


Dr Joel Strom is a former president of the California State Dental Board and former course director of “Ethics in the Practice of Dentistry” at USC School of Dentistry. He graduated from UOP School of Dentistry in 1979 and completed an NIH post-doctoral fellowship at Columbia University in 1983. He has owned an E4D milling machine and camera for five years and practices general dentistry in Beverly Hills and provides consultation and litigation support in the dental health area, including corporate clients, governmental agencies and individual dentists.
Dental implantology: Evolution or the road to ruin?

By Aws Alani, UK

Teeth are highly evolved structures that have developed progressively over millions of years in attempts to protect themselves from caries and periodontal diseases. Over the years, many advances have been made that can treat these various diseases predictably. Various strategies have been developed to prevent or slow down these problems given adequate patient compliance and appropriate personal and professional maintenance.

Despite these very significant improvements, there are still instances when patients are advised that one or other tooth has to be extracted. It is the obvious sadness, heartache or despair that patients are caused by this bad news that has driven, caring clinicians to find ways to replace teeth with various devices, including dentures, bridges and implant retained prostheses.

P.-I. Brånemark, now sadly deceased, famously quipped: “No one should have to die with their teeth in a glass of water beside their bed.” His original inspiration coupled with determination, intuition, passion and an ability to surround himself with a great team of individuals with differing skills made osseo integration much more predictable. Brånemark’s landmark studies changed prosthetic dentistry dramatically, but a careful look at the design of these protocols and the implants themselves reveal that they were hugely different to the patient selection protocols and the types of implants being placed today.

Furthermore, the restorations supported on them were made of the established materials then, and obeyed traditional mechanical laws. In terms of biological cleanability, the metal, polished “high water” abutment design allowed for optimal interproximal cleaning, while the implant surface itself was also relatively smooth in comparison with the rougher surfaces we often see today. Market saturation, cost, profit and market share in many technology-driven markets often pursue innovation of some sort of change to help gain greater market share or profit. The over-commercialisation of dentistry generally creates a constant turnover of supposedly new and better products, where the common notion of “if it ain’t broke don’t try to fix it” is lost on many directors of marketing or increasingly profit-driven CEOs.

Why and where?

Where this technological change has taken implantology and what the real reasons are that this was and is happening need to be examined. Increasingly, the shadow of peri-implantitis looms like a spectre over the provision of implants. Unlike caries or periodontal disease, there is very little consensus or re-

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search that can provide a predictable cure for what now is a new breed of disease. Peri-implantitis is relentless once established within fine threads of the implant, and the bone resorption and soft tissue problems that follow can result in spectacular problems. Part of the key issue probably lies in the surface exposed to the susceptible patient’s oral environment, as most microbiologists will allege. The bacterial content and make-up of the biofilm is a reflection of the surface on which it resides. Implant surfaces have become progressively rougher in order to hasten the early osseointegration processes and to try to provide patients with their restoration quicker in an ever more competitive financial environment.

However, speed is not always helpful. Experience shows that some things are better achieved gradually.

Once exposed to the environment of a susceptible patient, the macrotopography of the threads provides an ideal ecological niche for bacterial proliferation. Further nano-level features make the implant surface a veritable inflammation super-highway for the pathogenic organisms. Predictably enough, the microorganisms found on the rough surface are usually the common pathogenic ones, but also some species are found that have previously never been discovered in the oral cavity.

**Patient selection issues**

We need to consider the types of patients whom we are now accepting for implant provision. At King’s College Hospital, the criteria for a state-sponsored implant provision largely involve patients with hypodontia and those who have suffered trauma. Usually both cohorts are likely to present with well maintained, mistakenly restored dentition with scope for oral health improvement prior to consideration for any restoration, let alone an implant. Unfortunately, we are unable to provide this treatment for smokers.

This is in stark contrast to the patients who may be provided with implants in general and specialist practice, such as patients who are likely to have lost teeth as a result of plaque-associated diseases. Indeed, it could be considered a paradox by many interested observers that some clinicians are providing patients with periodontitis in the hope of successful treatment when they have shown that they are highly prone to plaque-associated disease via tooth loss and have not demonstrated any real capacity for changing that. Patients who smoke, those with a history of periodontitis and those with poor oral hygiene are well known to be at a very significantly higher risk of peri-implantitis.

**Biological versus mechanical problems**

If we are being frank, the pathogenic bacteria-induced diseases are not the only long-term problem that we are now seeing. The reported frequency of mechanical complications has risen over the years, but the reported problems are probably only the tip of the iceberg, as many complications have not and will not be reported for a variety of understandable reasons.

Over time, the components of implants have shown notable weaknesses. Screw loosening, fractured screws, loose abutments and the instability of ceramic can be laborious and expensive to manage. One aspect, which may be lost on some, is that since they lack a periodontal ligament dental implants cannot and will never be able to accommodate to changing occlusal and non-aesthetics forces. These are very likely to cause stress within the masticatory system, thereby resulting in breakages. These forces are compounded greatly if patients exhibit paraphcnal function on a daily basis and that is sometimes an unknown risk factor until it is too late. The more implants that are placed, usually the fewer teeth are present, resulting in a more reduction in physical and functional feedback and thereby creating an increased chance of failure of some type.

**Ethical, moral and legal issues**

These problems become much more worrying when viewed from an ethical, valid consent and medico-legal perspective. This is particularly so when patients are consented to undergo elective extractions of teeth that often seem reasonably intact or treatable with conventional proven treatment strategies.

It appears that there is a worrying drift towards aggressive treatment with extractions in order to provide a supposed full-mouth rehabilitation with multiple implants. The increasingly dubious practice of sacrificing teeth for the sake of implants appears to many concerned clinicians to be quite irrational. As ethical oral health practitioners, deliberately removing savable teeth for prophylactic treatment using implants as support appears to be consciously flying in the face of increasingly apparent evidence of various complications with implants and many would consider that approach to be foolish. How many ‘implantologists’ doing that to others would genuinely have it done to themselves or done to some close family member?

**Planned obsolescence**

A state-of-the-art implant today is likely to be obsolete tomorrow. Excessively removing teeth is irresponsible, and replacing teeth with implant-retained devices means that patients are trapped in the era of the implantology in which these were placed and restored, that means issues of machining, surface blasting, roughness, platform switching, design and attempts at bone augmentation by cote, coral or Californian substances. The list goes on and on and will probably continue to expand with what many might consider human experimentation without licence.

Now comes the time for implant manufacturers to take stock of their many ‘market-driven’ mistakes, including fast initial integration with the reported frequency of mechanical complications has risen over the years, but the reported problems are probably only the tip of the iceberg, as many complications have not and will not be reported for a variety of understandable reasons.

A wiser, pragmatic approach appears to be to concentrate everyone’s efforts on saving teeth and thereby eke out their usefulness for the patient’s lifespan. Recently, a very Prof. Jan Lindhe, interviewed in the British Dental Journal, summarised the state of play as follows: “There is an eversince of implants in the world and an under-use of teeth as targets for treatment.”
Managing patients with risk factors

By DTI

GILLINGHAM, UK/GOTHENBURG, Sweden: Requests for shorter treatment times along with an increasing number of patients with risk factors place greater demands on dentists and technology. Correctly assessing osseointegration and implant stability is key in successful implant treatment. Using traditional methods such as torque and percussion tests are not suitable for monitoring osseointegration, it requires a more advanced diagnostic tool.

Gain insight from these esteemed periodontists on what they do to objectively and noninvasively identify which implants are ready to load and which ones need additional healing time.

Dr Pamela K. McClain and Rachel Schallhorn, both Diplomates of the American Board of Periodontology, have been using Osstell and the ISQ scale (Booth 43d) for a number of years now to measure primary implant stability and osseointegration.

“We are currently using Osstell when we place all implants to establish a baseline measurement of implant stability,” they say. “At the time of placement if the ISQ is too low (depending on the location—anything below 45) we will remove the fixture, possibly graft and then wait another 3–6 months before trying to place another fixture. We try to take the measurement on the buccal/lingual, and mesial/dental aspects and record the highest and lowest values.”

McClain and Schallhorn add: “We typically recheck the ISQ value at three months. If the ISQ has improved or is stable if the number was high to begin with—over 69 we will release the patient for restorative treatment. It gives us and the patient a more objective way to assess the implant stability. It’s not ready at that time we continue to recheck every six weeks until the ISQ has improved or indicates stability.”

“Since we began using this device in 2009, our decision making process has become more simple and objective. We will continue to use the Osstell value to help guide treatment decisions and as a communication tool with our referring dentists.”

Dr Paul Rosen, Clinical Professor of Periodontology & Oral Implantology, Temple University Kornberg School of Dentistry in Philadelphia, USA, also explains below why Osstell is important in his practice.

“Osstell use is critical for my implant practice. Every year, this device more than pays for itself as there are always several patients who heal slowly or who have implants placed with extremely low insertion torque. This confounds my ability to predict when healing has been adequate to proceed to the restorative phase. Osstell provides me with quantitative information necessary to make informed decisions. No longer am I the villain who slows up patient care, but it is objective data about the patient’s healing that becomes the determining factor.”

By DTI

CRAWLEY, UK: To facilitate online communication within the implant industry, Straumann has recently launched a new digital hub for dental professionals in the UK and Ireland. With a look of a stylish digital magazine, the THE REVU platform will feature news and clinical cases, among other content covering everything from the dentistry industry and marketing to business and education.

According to Straumann, THE REVU takes an original approach to blogging and video blogging (vlogging), delivering the perfect combination of branded and non-branded editorial and video content. The platform will launch with interactive questions and answers, scientific reviews and an inside look into one clinician’s journey into implants. It will tell a different story every day by bringing new and informative content to the fore in a clear and simple manner.

“THE REVU” launched by Straumann

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Peri-implantitis: Is it a crisis?

By Dr Michael R. Norton, UK

In the US over 900,000 implants are placed each year, whilst in the UK that figure was around 140,000 for 2010. The prevalence of peri-implantitis has been reported to be up to 29 percent most notably in patients whose implants are placed within a partial dentition. This yields a potentially vast number of implants, possibly as many as 185,000 in the US and UK alone that might succumb to some form of peri-implant disease on an annual basis.

The bacteria found within peri-implant lesions are similar to those found in deeper periodontal pockets, and cross infection by periodontopathogens as a primary aetiology has been implicated as a possible pathway. However the wide variety of implant designs, surfaces etc. make the treatment of peri-implantitis much less predictable and subject to much greater variability than periodontal disease, where natural teeth present a known anatomy and well defined surface structure.

In 2008 a systematic review of the literature regarding peri-implantitis using PubMed and the Cochrane library revealed little consensus on the treatment of this troublesome condition. One study reported on the efficacy of sub-mucosal debridement using ultrasonic or carbon fibre curettes, while two others compared the effect of an Er:YAG laser against that of mechanical debridement and 2% chlorhexidine as a combined therapy. Nonetheless a multitude of other studies have also been published reporting on the efficacy of tetracycline, CO2 laser, and photocatalytic decontamination amongst others in the treatment of peri-implantitis. Such a plethora of therapies makes it difficult for the clinician to choose a regimen that is both within the reach of the average clinician and has some documented reliability.

Risk factors

There have been a number of risk factors cited for peri-implantitis. Recently, in a study published in the Journal of Clinical Periodontology, a clear association was demonstrated through multi-level statistical analysis between risk of peri-implantitis and location, specifically the maxilla, while overt peri-implantitis was shown to be highly correlated to patients with a predisposing history of periodontitis, and being male. Surprisingly in this particular study no correlation was demonstrated with smoking, poor oral hygiene, and prosthesis design which are of course interrelated with some prostheses making effective oral hygiene untenable, while others present deep margins that make removal of excess cement almost impossible.

Warning signals

Peri-implantitis rarely presents unannounced unless of course the patient fails to be placed on a regular recall programme or fails to attend for regular review. Early signs are often apparent in the form of peri-implant mucositis. This condition is characterised by mucosal oedema,rubor and bleeding on probing (ROP). By definition it is not associated with purulence or bone loss. However, this condition is often asymptomatic to the patient and as such is typically only diagnosed via a routine recall. Hence there is a need to recognise that when implant treatment is completed the patient should remain on annual reviews for at least the first five years, and thereforer even every two years.

On presentation with mucositis a combination of mechanical debridement and sub-mucosal decontamination and antimicrobial therapy are indicated. The treatment should be repeated three times within a two week period, so-called Triple Therapy (Norton M).

The protocol is as follows:

1. Mechanical scaling of implant surface with titanium or carbon fibre curettes.
2. Sub-mucosal irrigation with 5–10 ml chlorhexidine (0.2 %) per site, at the deepest level of the pocket on all sides of the implant.
3. Application of Minocycline Gel 2 % (Dentomycin, Henry Schein Ltd) at the deepest level of the pocket on all sides of the implant.

Other factors that have been implicated include excess cement, like bone defects and spontaneous purulence and bleeding on palpation (Figs. 1-4). It is typically associated with deep peri-implant pocketing >3mm.

This condition is undoubtedly of increasing concern due to some principle factors, such as the almost exclusive use of roughened implant surfaces, the treatment of partially dentate patients with a history of periodontal disease, the placement of implants with inadequate bone volume resulting in facial deficiencies, as well as the use of cement retained prostheses.

Implants with a macro-roughened surface texture have presented excellent long-term data and until recently there has been very little published in the literature demonstrating a susceptibility of these surfaces to this condition. However recent work by Alhoub et al has received widespread attention with concern for the evidence that suggests some modern micro-textured surfaces may be completely resistant to decontamination.

Ultimately, if left unchecked and untreated, it may become impossible to arrest the condition, leading to wholesale failure of the case (Figs. 5 & 6). Such failures impose a tremendous strain and burden on the clinician (let alone the patient), destroying the confidence of a patient who has endured significant expense and trauma and occasion-ally results in a breakdown of commu-nication between both parties that all too often sadly results in a legal claim of negligence. Such claims can be hard to defend for patients where no warnings and/or supportive periodontal / peri-implant therapy have been undertaken.

Treatment typically requires surgical access to excise any fibrous capsule and for direct access to the implant for surface decontamination. The author’s preference is now to have used chlorhexidine and tetracycline solution for this purpose while others have reported the use of citic acid and hydrogen peroxide amongst oth-ers. The use of lasers has also been extensively reported. However in a recent systematic review a meta-analysis could only be done for Er:YAG laser as the literature on this was at the time. The author has recently completed the acquisition and treatment of 20 patients in a single study using Er:YAG water laser (Morita, AdvErl Evo) and it is hoped that publication of the results will be forthcoming. Indeed promising data has already been published to date using this same machine.

Nonetheless this methodology remains one of the most practical general practitioners and has yet to be proven predictably effective. As such most attention therefore remains focused on combining debridement via surgical intervention and topical antimicrobial therapies.
Open flap debridement, defect decontamination, and repair as well as pocket elimination have all become the mainstay of those treating this condition.

So is there a crisis? The problem is that there is no clear consensus on the prevalence of the disease since this will vary according to the cut off values for the clinical parameters measured and there appears to have been little consensus on these cut off values. As such estimates of incidence of the disease appear to vary from 12 to 43 per cent of subjects and 12 to 43 per cent of implant sites.

Furthermore there is an ongoing controversy about the initiating process of peri-implant disease since it is potentially considered a primary infection of periodontopathic origin by some while others hold that it is a secondary opportunistic infection subsequent to bone loss caused by other etiological factors such as a provoked foreign body reaction or iatrogenic dehiscence of the bone, exogenous irritants such as dental cement, bone loss through occlusal overload etc. If the latter is true then controlling the disease is theoretically more simple by controlling the conditions for the implant, such as ensuring adequate buccal bone thickness, avoiding or controlling more carefully the use of dental cement, and paying closer attention to occlusion.

In an effort to gauge the rate of mucositis and peri-implantitis requiring surgical intervention, the author audited his patient pool in the year 2014. Out of a total of 191 patient reviews constituting 795 implants only 15 patients (7.9 per cent) required triple therapy at 20 implants (2.5 per cent) for mucositis while 10 patients (5.2 per cent) required surgical decontamination at 10 implants (1.3 per cent).

As can be seen this is well below the figures proposed in the article by Zitzmann & Berglundh (2005). This may of course reflect a more liberal approach to cut off values for parameters such as pocket depth and bleeding on probing as proposed Klinge in 2012.

Nonetheless after over 20 years running a practice dedicated to implant dentistry the author’s own audited failure rates indicate that less than 1 per cent of implants present as late failures, owing to peri-implantitis or fracture fracture as a result of bone loss. This would corroborate the findings by Jemt et al in which a cohort of patients already diagnosed with peri-implant bone loss showed a slow rate of additional progressive bone loss over a 9-year follow-up with an implant failure rate of 0.1 per cent.

In all likelihood it is the author’s view that peri-implantitis is only a crisis if we allow bad implant dentistry to persist where there is a lack of control of the initiating factors as described above, and that it is more rather than less likely that it is the result of a secondary opportunistic infection rather than a direct suscept-...
Making implantology affordable

Controlling costs and increasing access to dental implant treatment

By Dr Tuss Tambra, UK

Implant dentistry is an elective restorative treatment solution with a surgical component and restorative component. If properly executed, it is one of the most successful and clinically researched treatment modalities in dentistry. Unfortunately, patients who are not disease-free are being treated with dental implants and, as a result, the litigation rate has risen sharply.

A success rate of 98 per cent is almost universally claimed when promoting implant dentistry to patients. So, if implant dentistry is 98 per cent successful, then why are more cases failing and why is litigation increasing? Lack of proper training, poor treatment planning, and poor execution (surgical and restorative) are undoubtedly the main culprits. If a clinician has the appropriate surgical and restorative training in dental implantology, does the brand of dental implant used make a clinically significant difference to the success rate? Does paying more for the implant and restorative component mean a truly better result? Why is price an issue?

Price should generally not prevent access to high-quality, well-researched and effective dental treatment. However, the current pricing structure in implantology means that a huge proportion of patients do not have the disposable income to cover the costs of such treatment. The McGill study demonstrated the numerous benefits (functional, clinical, psychological, and general health) of dentate patients in whom dental implants were used to stabilize complete dentures. The improvements in chewing efficiency, general health resulting from an improved diet and general well-being (more social interaction and avoiding screw loosening). This study also showed the impact of the loss of market share and how either bought out competitors, created joint ventures or incorporated competing products into their product lines.

Do smaller implant providers offer potential benefits? One is certainly their ability to respond more quickly to increased patient expectations of treatment. The rapid expansion of digital dentistry, CAD/CAM technology and intra-oral scanning is resulting in smaller companies being able to provide dental implants with a total, open-source guided surgery and restorative solution. With larger companies, the ability to change directions is much more difficult and time-consuming, turning an oil tanker takes more time than a dinghy.

Economic drivers

Market forces must come to bear in dentistry. In the current global economic climate, ignoring the financial implications of the decisions we make is no longer an option. Patients expect high-quality, safe and affordable treatment. For this to happen, clinicians need to source products at a reasonable price point, passing on these savings directly to the patient, reducing overheads and treatment charges and, therefore, increasing access to treatment. Some of the prestige implant companies have already felt the impact of the loss of market share and have either bought out competitors, created joint ventures or incorporated competing products into their product lines.

All CE/FDA-marked systems meet the same standard whether affordable or prestige brands.

The next step is to assess clinically relevant criteria. Since there are more than 1,300 dental implant systems available, clinicians need to assess all available clinical and scientific data and test the validity of various claims made by dental implant companies. If checking for certification/approval is the first step for a clinician, then the second should be establishing how future proof the new implant is. In the early days of implantology, dozens of companies started trading and most of them closed in a relatively short period. For early adopters of those systems, the risk was not being able to restore or maintain such systems, as parts were no longer available. Therefore, as a general dentist, one should verify the length of time for which the system has been on the market, who the parent company is and what the connection interface is (is it a clone system of a well-known implant that is no longer in patent?). In simple terms, if the company ceases to trade, can I still source components and maintain my patients?

Implant-specific considerations

A significant proportion of connection options (internal hex, external hex, tapers and conical connections) are no longer in patent. The clinical research on these has already been documented and their success rates have been well documented in a multitude of studies. As a result, most affordable implant systems are adopting the non-patented connections rather than developing their own, meaning that prosthetic components are cross-compatible with other similar systems.

A clone connection implant can thus be restored with a high-end restorative component provided by another implant company using patent-free connections by open-source milling centres that can produce these components for significantly lower costs. One caveat with open-source milling is to check the quality of the milling provided in order to avoid the complications that arise from poorly fitting restorations.

Systems like the ICX now provide non-precious metal blanks with pre-milled implant connection interfaces and ceramic blanks bonded to adhesive bases. It is a permutable implant connection that is bonded to the all-ceramic block. It is the milling of the implant connection interface that is the most vital part of the process, so if an open-source centre can obtain pre-milled connection blank, then its work is much reduced and the dentist can be rest assured of a high-quality component with an accurate fit. The benefit of adhesive bases in all-ceramic work is the improved strength of the connection and reduced fracture rates compared with all-ceramic abutments.

Is using one of the clone connections listed above an issue? All these connections function with excellent long-term, clinically documented results. The key factor for success is the closeness of fit between the internal/external implant connection and the mating surface of the abutment, also called the micro-gap. This produces a stable, rigid connection with no abutment movement under loading. A stable implant-abutment interface combined with platform switching is the key to bone preservation around the neck of the implant and avoiding screw loosening.

How can one most easily compare multiple connection platforms in a simple and easy to understand way without needing a degree in mechanical engineering? Engineer Holger Zipprich from Goethe University Frankfurt’s dental school in Germany has produced real-time videos of
several implant-abutment interface responses to loading that are available on the market. Once these have been viewed, a rational decision as to which connections are more stable (right or left) can be reached and this information then applied to selecting an implant system.

Does the system offer a wide range of prosthetic, CAD/CAM and guided surgery solutions for dental implant treatment? Once a dental implant system has gained some degree of market penetration (or traction) and has documented its clinical effectiveness, it is worthwhile taking an unbiased view of the system. Hopefully, most glitches would have been identified and corrected by the early adopters, thus reducing the risks for the more cautious clinicians.

A personal recommendation is to focus on the restorative aspects first (restoratively driven treatment). Questions to be asked include whether the system has a broad range of components, whether it meets the clinician’s needs in implant dentistry, CAD/CAM-based treatment solutions and a guide to the surgical placement of dental implants. If you are impressed by what you see, then place a few implants and monitor them closely. If the treatment outcomes are successful and you have a positive impression of the system, then there is no reason that you should not add a cost-effective solution to your implant portfolio.

What impact does the macro-geometry (implant shape) and micro-geometry (surface treatment) have in relation to long-term success? The surface treatments applied to various implant systems are designed to improve the degree of osseointegration and bone-implant contact. This is extremely important for the long-term preservation of the implant. Smooth or machined surfaces are ideal for these situations; it is the primary stability of the dental implant, combined with the closeness of fit to reduce micro-movement of frameworks, that is the key factor in determining long-term success. Any beneficial effects of a surface treatment will occur post-osseointegration and several months after loading. So, are the macro-geometry of the implant and the stability of the abutment connection more important than the surface treatment for long-term success or vice versa?

Again, it depends on what the clinician is planning to do, immediate or delayed loading, conventional or guided surgery. In these situations, it is the primary stability of the dental implant, combined with the closeness of fit to reduce micro-movement of frameworks, that is the key factor in determining long-term success. Any beneficial effects of a surface treatment will occur post-osseointegration and several months after loading. So, are the macro-geometry of the implant and the stability of the abutment connection more important than the surface treatment for long-term success or vice versa?

Primary stability is mainly governed by the implant thread design and this directly affects the insertion torque. The implant-abutment connection stability is equally important; if this is not the case, then an implant loaded with a low insertion torque and poor component fit would not be able to perform osseointegrative movement under occlusal loading with loss of primary stability and implant failure long before osseointegration would have occurred.

If one is following conventional delayed loading protocols, then the surface treatment, as well as the macro-geometry and connection stability, will affect long-term success. Do the larger prestige dental implant brands provide dental implants with the most ideal thread designs, best primary stability, and highest tolerances of fit of abutments and frameworks? Or do the various surface treatments have a clinically significant improvement in long-term success when compared with a so-called budget brand? Again, no real cross-comparison research exists. The surface roughness of the dental implant is also of vital importance, as research has found increased peri-implantitis associated with macro-roughened surfaces. Smooth or machined surfaces clinically show reduced levels of osseointegration, so the current thinking seems to be that micro-roughened surfaces provide the optimum surface for osseointegration.

An affordable implant solution

The low-cost system that would be easier for comparison is the ICX system by Straumann in Germany. On the market for several years and well known in Europe, it has recently arrived in the UK as part of the company’s global expansion. All of its research has been conducted and validated by several prestigious institutions, adding weight to the product, including the Fraunhofer Institute, which conducted the durability testing, as well as universities in Cologne, Aachen and Mainz, which also contributed with clinical research. The Robert Mathys Institute in Bettlach in Switzerland performed research on the micro-gap (tolerances of fit of abutment).

The ICX system has well-developed CAD/CAM workflow for fabricating abutments, bars and frameworks for restoration with both ICX and other dental implants in addition to pre-made components. Titanium, zirconia and non-precious restorative components for ICX and other brands are available and were supplied with the final prosthetic screw included. With some systems, the final screw is not available and must be purchased separately. ICX also has a bespoke CBT guided surgery solution called Magellan that is also multi-implant system based. The software or upload to an docking tool to the parent company server and the company will carry out the design process and fabricate the guide once the design has been approved by the dentist. Magellan can also be used to produce guided surgery drill guides for various dental implant systems, but at a fraction of the cost.

When considering an implant solution, it is at the total system costs involved with both surgical and restorative components can reduce the overall cost to the patient. The table shows a price comparison of the ICX dental implant system against multiple implant systems, both prestige brands and cost-effective systems based on 2013 costs in the UK. In terms of cost and product content, the ICX implant seems to provide an effective implant solution for patients.

How does the implant fare when tested in laboratory against the prestige systems? The Fraunhofer Institute conducted durability (ISO 4619/10) testing (figs 3a & 6b) on several implant systems, including Straumann Bone Level implants. These tests showed that the ICX implant was more fatigue-resistant than all the implants tested (figs 3a & 6b). Thus, the implant has a durable, fatigue-resistant contact interface.

The implant–abutment interface

How stable is the connection when viewed in terms of closeness of fit of the micro-gap between the implant and the abutment. The study “Osseointegration 2007”, Berlin dentist Dr Stefan Wolf Schermer examined the micro-gap between the abutment and the dental implant connection interface of several systems and showed that ICX had the smallest micro-gap-abutment was the smallest of all of those examined (figs 3a & 6b).

Closeness of fit is directly related to movement of the abutment when under load. The fatigue test figures in conjunction with the smallest micro-gap figures show the ICX implant has a well-designed and rigid connection interface that is platform switching. The macro-geometry of the implant with self-tapping apical threads provides high insertion torques with excellent primary stability. These are key components in preserving central bone around implant connection interference. The ICX implant has an etched and blasted micro-roughened surface (Ra of 1–3 μm) with a pure titanium dioxide surface with no additives.

The implant was previously described as having a hydrophilic surface. However, this claim was successfully challenged by Straumann and is no longer used to describe the implant. The surface is currently being updated.

As a prosthodontist working in private practice myself, I have found that what is outlined above is how I personally approach implant treatment for patients. The table shows the total system costs involved with both surgical and restorative components can reduce the overall cost to the patient. The table shows a price comparison of the ICX dental implant system against multiple implant systems, both prestige brands and cost-effective systems based on 2013 costs in the UK. In terms of cost and product content, the ICX implant seems to provide an effective implant solution for patients.
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