Early orthodontic treatment and oral health-related quality of life

By DTI

SHEFFIELD, UK: In Western countries like the UK, between 10 and 20 per cent of adolescents undergo orthodontic measures in some form. A recent meta-analysis conducted by researchers at the University of Sheffield’s School of Clinical Dentistry has indicated that treatment in those younger years may have a measurable impact on a person’s oral health-related quality of life (OHRQoL).

In their review, they found that levels of emotional and social well-being concerning OHRQoL improved moderately in patients who were treated orthodontically before they were 18 years old. The findings are relevant, because, until now, there has been little evidence that treatment actually improves OHRQoL.

The researchers included data from over a dozen studies reporting outcomes before and after orthodontic treatment that were conducted within the last ten years in countries like Australia, Brazil, Canada, China, Italy, the UK and the US. Of these, four were finally selected for using similar questionnaires to measure what young people thought about their teeth and how their dental appearance affected their life, before and after orthodontic treatment. All showed measurable and moderately large improvement in the areas of emotional and social well-being, according to the researchers.

The study revealed first evidence that orthodontic treatment in early age improves oral health-related quality of life. (© Nina Buday/Shutterstock.com)

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The study revealed first evidence that orthodontic treatment in early age improves oral health-related quality of life. (© Nina Buday/Shutterstock.com)

While the findings are a first step on establishing a platform for exploring this issue further, Benson admitted that the number of participants included in the studies was small and that higher-quality data is needed to substantiate the conclusions. A follow-up study investigating OHRQoL in the under-18 age group under the supervision of co-author and student Hanieh Javidi as part of her doctoral research project is underway at the School of Clinical Dentistry.

The title, "Does orthodontic treatment before the age of 18 years improve oral health-related quality of life? A systematic review and meta-analysis," was published in the April issue of the American Journal of Orthodontics and Dentofacial Orthopedics.
BDA supports victims of 22 May bomb attack

By DTI

MANCHESTER, UK: At the start of its annual congress in Manchester, the British Dental Association (BDA) has pledged to donate £5,000 to the victims of the bombing at a concert on 22 May. With this step, the professional body joins other initiatives that are aimed at supporting the families affected by the horrific attack.

Chair of the BDA Principal Executive Committee Mack Armstrong said: “We’ve been so proud to make Manchester home to our national conference, and we just want to do our bit to help our hosts and friends in the aftermath of this horrific attack.”

“Quite rightly Manchester has resolved to carry on. Our thoughts are with all the families touched by this atrocity,” he added.

According to the Greater Manchester Police, Monday’s attack during a concert by American singer Ariana Grande at the Manchester Arena left 22 people dead and over 50 injured. (Photograph, DTI)

“Quite rightly Manchester has resolved to carry on. Our thoughts are with all the families touched by this atrocity,” he added.

The BDA has been continuously holding its national conference at the Manchester Central Convention Complex since 2012. Over 4,000 dental professionals were expected to attend this year’s three-day event, which also attracted an extensive industry exhibition.

Participants of this year’s BDA conference also had to submit to extra security measures that have been put in place for the entire event. On the first day of the congress, they joined in on a minute of silence across the UK to honour the victims.

King’s Dental Institute appoints Barts professor as new executive dean

By DTI

LONDON, UK: Prof. Mike Curtis from Barts and The London School of Medicine and Dentistry at Queen Mary University of London has been appointed new Executive Dean of King’s Dental Institute, the university has said. The microbiologist succeeds Prof. Dianna Rekow, who retired from her post at the end of last year.

Currently serving as Dean of Dentistry and Deputy Vice-Principal for Health at Barts and The London, Curtis is expected to take the helm of Britain’s most prestigious dental school at the beginning of the next academic year. In the meantime, the institute will continue to be led by Prof. Mark Woolford, who took over in December as interim Executive Dean. Commenting on his appointment, Curtis pledged to maintain and enhance the pre-eminence of dentistry at King’s in education, training and research.

“Professor Curtis’ appointment is an important step for us as we embark on a new university vision and seek to consolidate the Dental Institute’s position as Europe’s most comprehensive centre for dental education, research and patient care,” said Sir Robert Lechler, Provost for Health at King’s.

Last year, King’s was rated fourth in the world in dentistry according to the QS World University Rankings in the US, as well as first in Europe. Currently, around 1,000 students are enrolled in the university, as are 300 distance learning students. Curtis will bring extensive knowledge and research expertise in the field of oral microbiology to the school. His latest research focused on the role of oral microbiome in maintaining oral health and developing disease, and key microbial virulence determinants of oral bacteria.

Incidents in Great Britain in recent years. In response, the UK government has changed the terror threat level from severe to critical and deployed armed forces nationwide to protect vulnerable sites.

“It is important to keep these in mind to ensure the security of all the wonderful dental students and researchers working there,” he added.
Dentsply Sirona steps up education offering with London Academy

By DTI

WEYBRIDGE, UK. After the merger in 2016, Dentsply Sirona began significant reorganisation of its business operations in the UK and Ireland. The 12-month transition period was finally completed with the opening of its new education centre at DENTSPLY International’s former premises in Weybridge in Surrey near London.

Adding to Dentsply Sirona’s existing training facilities around the globe, it is the first launch of a major education centre by the international dental conglomerate. Attended by Dentsply Sirona Group Vice Presidents Thomas Scherer from Germany and Teresa Dolan from the UK, the launch in June brought together dealers, key partners, such as representatives of UK dental schools, as well as dentists and dental technicians from around the UK and Ireland in order to celebrate and have a first look at the new facility, which showcases products and equipment in a clinical setting.

According to Commercial Manager George Fleeton, to whom the new centre in the UK is planned to provide up to 700 courses on-site and online to 10,000 dental professionals a year. It will offer sales and dealer training in addition to clinical training for dentists and dental office staff. Furthermore, it is planned to host special events to raise awareness of various topics that are relevant in dentistry, Fleeton added.

“We see this facility being used to train not just dental professionals but also the people working with them,” he said. “We want all people working with dental professionals to do so in a competent and confident manner.”

Dentine hypersensitivity—“A sizeable problem”

An interview with Dr David Gillam, London

Periodontology specialist, Dr David Gillam, from the Institute of Dentistry at Queen Mary University of London, is the author of practice guidelines regarding the management of dentine hypersensitivity. At this year’s Dentistry Show in Birmingham in the UK, where he held a number of lectures and presentations on this topic, Dental Tribune sat down with him to discuss the condition and what practitioners need to consider when treating patients.

Dental Tribune: Dentine hypersensitivity still seems to be an underrated condition in the majority of practices. How prevalent is it according to the latest data and are there demographics that are more affected than others?

Dr David Gillam: Dentine hypersensitivity affects any age group from 18 onwards, but the peak is probably in people in their thirties and forties. There is some evidence that sensitivity decreases with age, perhaps owing to more dentine being laid down. That does not mean that one cannot develop hypersensitivity at age 60 and above. However, there is a higher possibility of the condition affecting younger people owing to their lifestyle and dietary choices, which can lead to the erosion of dentine.

With people keeping their teeth longer, they are potentially more exposed to erosive patterns and behaviour. A different profile may yet emerge, but this is not the case at the moment. From studies, we estimate that nowadays the condition occurs on average in one in ten patients, indicating a sizeable problem.

Does hypersensitivity result solely from erosion?

In scientific data from the US, recession is considered the main cause, but this is a predisposing feature. To my mind, once the dentine is exposed, erosion facilitates hypersensitivity because it opens the tubules. There are actually two stages, the uncovering of the dentine layer and the widening of the tubules, as set out in the hydrodynamic theory.

What makes the treatment of dentine hypersensitivity particularly challenging?

Dentine hypersensitivity is one of those nuisance conditions that may have more than one cause. It also takes a great deal of diagnostic time, unfortunately. From the patient’s point of view, it is often considered a minor problem that he or she believes he or she can deal with in everyday life. That makes it difficult to identify sometimes.

I recommend that practitioners consider the guidelines and the presenting features and manage the patient accordingly. There is a large amount of valuable information available in the literature and in the industry, but most of this is product-related. However, one cannot just wave a magic wand with one solution and expect the condition to go away. Part of what I do now is to educate and raise awareness among members of the dental profession. Therapists, particularly, are a key target group for education. There needs to be higher awareness in general.

What are the key recommendations for dental professionals with patients showing signs of hypersensitivity?

Practitioners should ask the patients the right questions. Key to this is linking the problem with lifestyle and how it affects the patient on a day-to-day basis. Also, dentists should do a differential diagnosis to exclude other causes of dental pain. A large number of dental professionals do not seem to do that. They should not simply recommend a once-off solution, but one that is based on managing the presenting clinical features. This will help to diversify the clinician’s management plan.

If the dentist provides treatment, he or she should incorporate a preventative philosophy that will involve changing certain habits. The patient should be monitored within the practice’s time frame. It is not necessary to see him or her every week. Finally, the clinician should research the pain presentation and not use any specific technique just because it is endorsed by a particular manufacturer.

Thank you very much.

Cutting the ribbon (from left to right): Dentsply Sirona UK General Manager Gerry Campbell and Vice Presidents Teresa A. Dolan and Thomas Scherer. (© DTI)
Rights of EU citizens after the Brexit: An unresolved issue

By Amanda Maskery, UK

Through the UK’s impending exit from the European Union, much uncertainty has been created around the position of EU citizens in the country, including those who currently work in the health care sector. After the result of last year’s referendum, in which the UK voted to leave the EU, the formal process of withdrawal duly began when Article 50 of the Treaty of Lisbon was invoked in March. The wave of negotiations for the Brexit is now underway.

EU member states have called for the rights of their citizens to be protected and have sought assurances from the UK to that effect. The government’s immediate and continuing response has been to state that rights for EU citizens will be determined in the Brexit negotiations, along with everything else to be considered.

Of course, this will raise serious concerns for the millions of EU citizens living in the UK, and indeed, the millions of UK citizens living in the EU. Both groups of people currently face uncertainty until their position is determined through the conclusion of negotiations, the timescale for which is unknown.

The right to work and live in an EU member state derives from the free movement of persons, a fundamental treaty right. When the UK leaves the EU, on terms yet to be determined, the risk does exist that the free movement of persons will be lost, unless it can be negotiated to the satisfaction of both the UK government and the remaining EU member states. Any deal on the free movement of persons for the benefit of the UK will require a commitment to the EU by the UK on preserving the rights of EU citizens currently residing in the UK and will no doubt require a commitment that the UK will allow the future free movement of persons.

After the impending UK general election on 8 June, the next prime minister will have the unenviable task of undertaking the Brexit negotiations. Naturally, EU citizens will be concerned as to what deal will be secured on a host of matters, immigration being but one. Until the negotiations have been finalised, EU citizens who have lived in the UK for at least five years may have the option of British citizenship, should they wish to seek it.

A British citizen has the right to permanently live and work in the UK without any immigration restrictions, this is otherwise known as a right of abode. Under the current British citizenship rules, those aged 18 and over and of good character who meet the knowledge of English and life in the UK requirements and who have lived in the UK for five years before the date of their application can apply to become a British citizen. Such persons can apply on behalf of children younger than 18 (and those children do not need to pass any tests).

For EU citizens seeking some certainty and control over their future, an application for British citizenship may be the immediate answer.
HPV vaccination may lower risk of oral infections that cause mouth cancer

By DTI

CHICAGO, USA: A study conducted in the US has found that the human papillomavirus (HPV) vaccine may help reduce oral infections that cause mouth cancer.

Using data from the National Health and Nutrition Examination Survey, the study looked at self-reported records of 2,627 young adults, aged 18–33, during the period 2001–2014 and compared those who had received one or more doses of an HPV vaccine with those who had not. Focusing on the prevalence of HPV 16, 18, 6 and 11—the four types covered by HPV vaccines—prior to 2016—oral rinse samples collected by mobile health facilities were tested for the virus in Gillison’s lab. According to the results, the HPV strains investigated were found in far fewer people who had received vaccine shots, demonstrating an 88 per cent lower risk. At the time of data collection, around 18.3 per cent of young adults in the US reported receiving one or more vaccine doses before age 26, with vaccinations more common in women than men (29.3 vs. 6.9 per cent).

“When we compared the prevalence in vaccinated men to non-vaccinated men, we didn’t detect any infections in vaccinated men. The data suggests that the vaccine may be reducing the prevalence of those infections by as much as 100 per cent,” said Gillison.

Approved in 2006 to prevent cervical cancers in women, and later for other cancers, including anal cancer in men, negative stigma around the HPV vaccine being used only to prevent sexually transmitted infections and not cancer has meant gaining acceptance and awareness has been slow. Actor Michael Douglas raised the issue publicly several years ago, when he blamed his cancer on it.

Oral sex has been regarded as the main risk factor for contracting an HPV infection in the mouth or throat, according to Gillison. She explained, however, that oral sex does not give one cancer. The infection in rare cases can develop into cancer over many years.

According to the Centers for Disease Control and Prevention, 63 per cent of adolescent girls and 50 per cent of adolescent boys have started with the HPV vaccine series throughout the US. Nationwide, there are an estimated 3,200 new cases of HPV-associated oropharyngeal cancers diagnosed in women and about 13,200 diagnosed in men each year.

Drug-related oral health problems investigated

By DT Asia Pacific

BRISBANE, Australia: People with substance use disorders are more prone to dental caries and periodontal disease than the general population, as well as less likely to receive regular dental care. Hence, the oral health of these patients is a particular challenge for dentists. A new review study has now aimed to examine drug-associated oral health problems and ways for dental professionals to improve these patients’ oral health.

Drug use is associated with problems such as xerostomia, an increased urge to snack, clenched and grinding of teeth, and chemical erosion due to applying cocaine to teeth and gingivae, research has shown. In addition, lifestyle-associated factors can worsen the oral health in patients with substance use disorders. These include high-sugar diets, malnutrition, poor oral hygiene and lack of regular professional dental care.

In order to lift the burden of oral health-related problems, a cautious dental approach is needed when treating these patients. However, according to lead researcher Dr Hooman Baghaie from the University of Queensland, there are simple measures that both dentists and doctors can take to improve these patients’ oral health.

“Dentists should screen their patients for substance use, notice any advanced dental or periodontal disease inconsistent with a patient’s age and consider referral to medical doctors for management,” Baghaie said. In addition, dentists should be aware of issues concerning treatment and consent when the patient is intoxicated and be alert to the possibility of resistance to painkillers, he emphasised.

“Generally, doctors and clinicians who care for people with substance use disorders should screen for oral disease and warn patients of the oral health risks associated with xerostomia and cravings for sweet foods,” Baghaie added.

The review combined the results of 28 studies from around the world, which collectively provided data on 4,966 patients with substance use disorders. The findings indicated that one in 20 people between the ages of 15 and 64 use drugs each year, with approximately 10 per cent of this number having drug dependence or substance use disorders.

The findings mirror those of increased dental caries and periodontal disease in people with severe mental illness, eating disorders and alcohol use disorders, compared with the general population.
By DTI

BIRMINGHAM, UK: In partnership with clear aligner provider Align Technology, MiSmile has helped dentists in the UK to successfully integrate Invisalign tooth straightening in their practices for the last two years. At the Dentistry Show in Birmingham last month, it was announced that the network is expanding this growing business model to tooth whitening through a new partnership with oral health care specialist Philips.

By joining the new initiative, member practices will be able to double their treatment case load within a year, both companies said. Founded by Birmingham dentist Dr Sandeep Kumar, MiSmile currently consists of more than 50 practices across the UK that, combined, have finished over 10,000 Invisalign cases. The new whitening network will make use of Philips’s approved Zoom Whitening solution and offer a proven bespoke lead generation programme that directs qualified leads to the practice in an exclusive, ring-fenced geographical area.

Other benefits include practice-wide access to a dentistry-specific lead nurturing platform called DenGo, which, according to both companies, helps to nurture and convert these enquiries into cases and turn them into long-term patients. It will further provide on- and offline marketing tools to help a member practice promote Zoom Whitening to new and existing patients and consequently generate new revenue streams.

Network meetings, support, training and mentoring programmes help the practice principal and team on an ongoing basis, they added.

“I would like to help other practice principals apply the knowledge I have gained both with Invisalign and with Zoom to double their tooth whitening case volume,” said Kumar. “I am putting out a personal invitation to become one of the first to join the Zoom Whitening Network and benefit from the opportunities for future practice growth in an enticingly new way that is entirely proven.”

Philips further announced that it has started a new campaign exclusively aimed at dental hygienists with the introduction of a digital hub under the name ShineOn. On the platform, among other things, hygienists will have access to video testimonials, industry news, educational resources and regular ShineOn sweepstakes with giveaways. The launch in Birmingham was joined by leading hygienists, including Anna Middleton, Mel Prebble, Juliette Reeves, Christina Chatfield and Sarah Murray, who discussed shining examples of good dental hygiene practice during a joint panel on Friday afternoon.

Today also saw the official launch of Philips’s latest version of its flagship product in oral health care. Labelled the most intelligent toothbrush in the world, the new Sonicare DiamondClean Smart features smart sensor technology in both the toothbrush and the brush head with the purpose of helping patients to improve their brushing technique. The sensors track the brushing and communicate with a smart device app that provides real-time feedback and guidance to the user. Furthermore, the company’s interproximal cleaning device Sonicare AirFloss has received an upgrade and now features a new charge and fill docking station.

Philips “reveals everything” in Birmingham
Company partners with MiSmile network, launches new products and hygienist campaign at Dentistry Show

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Dentists receive new tool to combat enamel erosion

Unilever introduces REGENERATE serum in the UK

By DTI

LONDON, UK: Teeth in this day and age are constantly under attack. While sugar has been considered to do the most harm to our pearly whites, a new concern has recently emerged with the increasing consumption of soft drinks and acidic foods that are sold to millions in supermarkets and corner shops throughout the country every day.

Around 34 per cent of young adults in the UK are estimated to have significant tooth wear, according to a recent study conducted at King’s College London, for this and other reasons. If left untreated, erosion can lead not only to weakened enamel but also to other negative symptoms, like yellowing, higher transparency and sensitivity.

After three years of development, Unilever launched a new premium oral health line in May exclusively designed for dental professionals that is claimed not only to halt ongoing enamel loss but also to reverse it. According to the company, the REGENERATE serum complements the toothpaste with the same name that is already available in high-street shops in the UK and other markets in Europe, the Middle East and South America. Used in combination, they form an effective clinical solution in the practice and at home to reverse the consequences of erosion, Unilever said.

The REGENERATE Professional Advanced Enamel Serum for the three-day application comes as a complete kit containing the serum, an activator gel and two soft mouth trays. Monthly refill packages without the trays are also available from the company. "Brushing twice with the REGENERATE toothpaste additionally supports the rehardening of acid-affected enamel, the company said.

The REGENERATE Professional Advanced Enamel Serum is exclusively available through CTS Dental Supplies in Redhill.

Techceram receives distribution rights for Singaporean 3-D printing tech

By DTI

BIRMINGHAM, UK/Singapore: 3-D printing is poised to become one of the fastest-growing fields in dentistry. West Yorkshire provider of CAD/CAM solutions Techceram has recently gained access to a larger share of the market through a partnership with Singapore company Struco, which develops and builds 3-D printers for dental applications.

Under the agreement, which came into effect last month, Techceram will be allowed to distribute Struco’s full range of products to its UK customer base, benefiting from the adoption of digital dentistry in the region. According to Struco, its proprietary MSLA (mask stereolithography) technology allows faster printing than with conventional SLA printers.

“The new partnership with Struco is a key market for Struco and I am looking forward to seeing how this partnership can improve on-ground support for our customers,” he said.

Techceram 3-D Director Richard Buckle added that, in addition to increasing its product offering, the first public showing was this weekend at the Dental Technology Showcase in Birmingham, where visitors were able to experience Struco’s OrthoForm 3-D printer for orthodontics.

Struco offers control systems and software, in addition to its 3-D printing technology, for which it has formulated its own photopolymer materials. According to founder Huub van Esbroek, the partnership with Techceram is the first step to further expanding the company’s reach in the European market. Struco having just launched its latest MSLA-equipped DentalForm printer, which can print at up to 50μm accuracy at record speeds, he said he is confident that the company’s application-based approach to product development will significantly benefit the adoption of digital dentistry in the region. According to Struco, its proprietary MSLA (mask stereolithography) technology allows faster printing than with conventional SLA printers.

“We have identified Europe as a key market for Struco and I am looking forward to seeing how this partnership can improve on-ground support for our customers,” he said.

Techceram 3-D Director Richard Buckle added that, in addition to increasing its product offering, the company’s commitment to bringing the latest technology and complete solutions to its large customer base.

Carestream software available with full DEPPA integration

By DTI

BIRMINGHAM, UK: Dentists in the UK now have the option to start using Carestream’s CS R4+ management software without logging in separately, through Carestream DEPPA integration.

The new DEPPA integration is available free to all DEPPA members. With the integration, the full Carestream assessment form can now be launched in R4+’s clinical patient record and completed there in any order.

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“Good design will pay off”
An interview with Drs Mona Patel and Marcus Riedl

Just as in dentistry in general, where aesthetic aspects are becoming ever more important, dentists today are pursuing intentional design of their dental practices. With the launch of four new design lines, Dentsply Sirona Treatment Centers presents dentists with the opportunity to enhance workflows and treatment efficacy through clever and cutting-edge solutions while conveying their individual style. Dental Tribune spoke with German dentist Dr Marcus Riedl and Dr Mona Patel from the US, both of whom have ensured careful design of their practice environment based on their needs and preferences with a Dentsply Sirona line, about the role of aesthetics in daily dental practice.

Dental Tribune: Design can convey emotions and distinguish a dental practice from others. In your opinion, what relevance does design have in this regard?

Dr Mona Patel: In the US market, it has not played an important role for a long time. Now, with the newer generation of dentists, design is increasingly significant. I think it is just as important as the type of equipment that one purchases or the insurance one carries, because image is everything. In my opinion, the design of the practice is a direct reflection of how one provides care as a dentist. This correlation was not present in previous generations, but it is now.

Dr Marcus Riedl: In the US market, it has not played an important role for a long time. Now, with the newer generation of dentists, design is increasingly significant. I think it is just as important as the type of equipment that one purchases or the insurance one carries, because image is everything. In my opinion, the design of the practice is a direct reflection of how one provides care as a dentist. This correlation was not present in previous generations, but it is now.

When deciding on a particular design or the overall look of your practice, what did you put special emphasis on?

Patel: Dental anxiety is a huge component of what we have to manage, so we need to create an environment that first and foremost has a calming, spa-like feel and reduces our patients’ anxiety when they walk through the door. Secondly, in my practice, I wanted the design to be evidently smart, because that reflects my meticulous personality. I equipped the whole office with Dentsply Sirona products—in fact, it was the first all-Dentsply Sirona office in the US. I wanted to showcase the high-tech equipment and design a nice, simple office around that—not to compete with the equipment, but to enhance it.

Riedl: We too choose Honest Materials, mainly because I like

Dentsply Sirona has developed four different design worlds: Embellished Elegance, Cheerful Patterns, Honest Materials and Pure Shapes. Which one did you decide on and why?

Patel: We chose Honest Materials because our practice has all this enhanced digital technology, which can be intimidating. I wanted to balance this digital aspect of our practice with natural and organic materials. We have a lot of birch and wood—clean, sleek, simple and balanced materials that hopefully move the focus from the equipment. My design in general is very monochromatic, nothing too messy or cluttered.

Riedl: For many of our patients, the design aspect is just an outer shell, since they come to us for the content. We designed our practice for patients to feel at home. When they come into the office, they do not see any units at first. As for dental phobia, in my opinion, reducing anxiety mainly

is the responsibility of the staff. However, a calming atmosphere is a great support, of course.

Patel: In health care, whole-body awareness and preventative health are becoming ever more important. A practice today is not just about treating tooth pain, but about establishing a dental home, creating a place where patients can establish a relationship with their dentist and their hygiene team.

Dentsply Sirona has developed four different design worlds: Embellished Elegance, Cheerful Patterns, Honest Materials and Pure Shapes. Which one did you decide on and why?

Patel: We chose Honest Materials because our practice has all this enhanced digital technology, which can be intimidating. I wanted to balance this digital aspect of our practice with natural and organic materials. We have a lot of birch and wood—clean, sleek, simple and balanced materials that hopefully move the focus from the equipment. My design in general is very monochromatic, nothing too messy or cluttered.

Riedl: We too choose Honest Materials, mainly because I like

just as in dentistry in general, where aesthetic aspects are becoming ever more important, dentists today are pursuing intentional design of their dental practices. With the launch of four new design lines, Dentsply Sirona Treatment Centers presents dentists with the opportunity to enhance workflows and treatment efficacy through clever and cutting-edge solutions while conveying their individual style. Dental Tribune spoke with German dentist Dr Marcus Riedl and Dr Mona Patel from the US, both of whom have ensured careful design of their practice environment based on their needs and preferences with a Dentsply Sirona line, about the role of aesthetics in daily dental practice.

Dental Tribune: Design can convey emotions and distinguish a dental practice from others. In your opinion, what relevance does design have in this regard?

Dr Mona Patel: In the US market, it has not played an important role for a long time. Now, with the newer generation of dentists, design is increasingly significant. I think it is just as important as the type of equipment that one purchases or the insurance one carries, because image is everything. In my opinion, the design of the practice is a direct reflection of how one provides care as a dentist. This correlation was not present in previous generations, but it is now.

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When deciding on a particular design or the overall look of your practice, what did you put special emphasis on?

Patel: Dental anxiety is a huge component of what we have to manage, so we need to create an environment that first and foremost has a calming, spa-like feel and reduces our patients’ anxiety when they walk through the door. Secondly, in my practice, I wanted the design to be evidently smart, because that reflects my meticulous personality. I equipped the whole office with Dentsply Sirona products—in fact, it was the first all-Dentsply Sirona office in the US. I wanted to showcase the high-tech equipment and design a nice, simple office around that—not to compete with the equipment, but to enhance it.

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nature. In our previous office design, we used the colours white, grey and green. In order to preserve our corporate identity, we wanted to keep these and combined them with a lot of wood and glass, because we wanted to convey the nature aspect to our patients. Technology is cold and patients do not want to be confronted with it directly, so we created the look of a mountain lodge. Our floors are even called “valley station”, “middle station” and “mountain station”, for example.

Do you feel that patients appreciate the effort?

Riedl: Sometimes, it is about the little things. For example, my wife puts fresh flowers in every corner of the practice, which I love. However, design polarises. It divides our patients into at least two groups. Those who are interested in and impressed by our design appreciate it, of course. Others do not. I believe that treatment units and high-end equipment establish a sense of professionalism, quality and exclusivity. No patient can judge a dentist’s quality and knowledge at first sight, but in the eyes of the patient, design and technology often are equivalents for quality, so good design will pay off.

There are countless treatment units on the market and they differ a great deal. What did you consider when deciding on a system?

Riedl: As a dentist, I have always worked with Sirona, now Dentsply Sirona. Therefore, there was no question of the brand I would choose. In our previous office, we used the M1 for almost 30 years—I, of course, used it only for about ten years—and I did not want to change my habits and movements during treatment. Comparing the M1 with the Teneo is like comparing an old Mercedes-Benz with a new one. It is the same quality. The Teneo might be not as solid as the good old M1, but has more features that are useful.

Patel: I was designing a new office, so I had a clean slate to work with. I did a great deal of research and comparisons. For me, the look and the design were important, as were functionality, integration, longevity and being able to sanitise it easily. I was instantly drawn to Teneo, because, as I said, I do not like clutter. The fact that everything was integrated was an instant attraction to me. I found solutions to all my wishes in the Teneo. It was an easy decision to make and we designed the office around the units.

Thank you very much for the interview.
What would Dr Mo Lar do? Part 3

Considerations when buying a home

By 4dentists, UK

Over the course of this 11-part series, the 4dentists group will explore ways to tackle a number of personal and professional challenges by providing advice and guidance to fictional character Dr Mo Lar. In this article, the third in the series, the different options available to dentists looking to purchase property are explored.

Lar has been working as an associate for several years now, which means he finally has the capital to purchase his first home—the next step in his life plan. Currently, he is in rented accommodation, but by buying a home, Lar will get himself on the property ladder, which, in turn, will help assure financial security for the future.

Altogether, embarking on the adventure of home ownership is extremely stressful. It is, after all, one of the greatest financial commitments he will ever make. As Lar will need to take out a mortgage on the property—which is the case for the majority of buyers—he will need to decide which type to choose. Seeking expert advice on the kinds of mortgages available and weighing up your options beforehand can be hugely beneficial when purchasing a home.

One of the main types that Lar should be aware of is a repayment mortgage, for which the borrower is required to make a monthly payment to the lender, repaying both the interest and some of the capital. There are a number of advantages to choosing the repayment option, including it limiting the risk linked to taking out a mortgage, it being simple to understand and follow payments, and as long as you keep up with the repayments, the mortgage being repaid by the end of the term. Potential disadvantages are that there is no possibility of additional investment returns, there is a limited chance of repaying the loan early without increasing the monthly payments, and if you move house frequently, it is very difficult to build up equity in the property in the initial stages, as repayments mostly consist of interest.

Another option to consider is the interest-only mortgage, for which the borrower only repays the interest on the loan each month and the amount that is owed remains the same throughout the duration of the mortgage repayments. When the mortgage term reaches its end, the borrower is required to pay back the principal amount. In order to do so, the borrower must make sure that he or she has saved enough money to be able to repay the loan. Again, there are a number of advantages and disadvantages to taking out this kind of mortgage on a property. For instance, it provides the opportunity to make a return on the investment, there is the option to repay the loan early and it is easy to transfer the mortgage without disrupting the payment plan. However, the borrower’s ability to repay the loan is dependent upon the investment performance of the savings vehicle that has been chosen, so the risk is considerably higher than for a repayment mortgage. In addition, there are two separate payments to keep track of, one to the lender and the other to the investment company, and this can be confusing and stressful. The other option available to Lar would be a mix-and-match mortgage, which is exactly what it sounds like: you choose a combination of mortgage types to spread the risk.

Whatever type Lar chooses, it is crucial that he take into consideration exactly how much he can afford, both now and in the future. If he is looking to become a practice principal or start a practice group, for instance, this might affect his finances and how much he can pay. Lar would also need to think about how his plans to start a family would affect his mortgage affordability.

Another factor that Lar would need to give thought to is how being an associate will affect his securing a mortgage. When dealing with self-employed dentists, most lenders will request a minimum of two years’ accounts because the affordability assessment is based on net pre-tax profit and not turnover. As such, accurate record-keeping is essential, and it is for that reason that it can pay to utilise the services of a specialist accountant.

For the actual acquisition process, it is essential that the buyer employ either a solicitor or a licensed conveyancer to deal with the legal aspects of the transaction. There are a number of different options available from Internet-based companies to traditional high-street or larger commercial firms, and costs can vary significantly from one to the other. Ultimately, buying a house is one of the most expensive purchases that Lar will ever make, so it is important that he choose the right team to represent him in his purchase. Further to that, it can pay to use a company like the 4dentists group that offers accountant, legal and financial services all under one roof.

Lar is making a huge commitment buying his first home, but with concise and well-informed professional advice, he can achieve his goal in a relatively stress-free and uncomplicated way.

Next issue: How Lar can legally reduce his tax bill.
Dynamic navigation for precise implantation in cases of critical anatomy

By Dr David Burgess, UK

Introduction

Using the CBCT image as a map, dynamic navigation guides surgeons just like a GPS guides drivers. The clinician virtually plans where implants should be placed. During surgery, the navigation system dynamically tracks the drill and the patient’s jaw, providing guidance and visual feedback to ensure the implants are placed according to plan.

There are several advantages with dynamic navigation. The technology allows clinicians to place implants more accurately than free-hand. This results in improved safety and aesthetics, as it helps the clinician to anticipate and to avoid potential complications. Other advantages are the ability to have more minimal invasive treatments, which means less chair time, less patient discomfort and less recovery time. This treatment option has generally been seen as a “blind” procedure in the past, but the ability to avoid delicate anatomical structures due to the real-time surgical feedback makes so-called flapless surgery a valuable option.

In the following case report, Dr David Burgess describes how using computer-guided dynamic navigation helped him overcome clinical challenges for dental implant placement in the lower posterior region.

Case report

A 75-year-old male patient had endured a gap for five years, following removal of his lower left second molar, due to an acute apical infection. He was finding mastication increasingly difficult and sought advice about the treatment options available.

Planning for optimum implant positioning

As there was no tooth distal to the space, conventional fixed bridgework was not possible. The treatment options were either a unilateral single saddle lower partial denture or restoration of the space with two dental implants. The patient chose to have dental implant treatment as he did not wish to have any form of removable prosthesis.

What makes Navident dynamic navigation stand out is it precisely guides the surgeon to prepare and place the implant in a pre-determined position (Fig. 1). This allows me to achieve greater accuracy and certainty than I have previously been able to, using conventional protocols. Whilst there is no physical guide, a simple scanning template (NaviStent) is used to hold the fiducial in place whilst taking the CT scan, and secure the jaw reference (JawTag) for the navigated osteotomy.

In this case, the NaviStent was fabricated, the fiducial marker attached and a CBCT scan taken two weeks prior to surgery (Fig. 2). The treatment plan was created immediately after the scan (Fig. 3), with the patient present. He was able to see the proposed treatment displayed by the Navident software and appreciated that great care was being taken to achieve the optimum implant positioning, with minimal risk of potential complications (Fig. 4). The patient was impressed with, and reassured by, the state-of-the-art technology.

Confidence from continuous feedback

Treatment was carried out under local anaesthesia. Prior to

Info

Dr Burgess is holding four hands-on courses in 2017 for experienced implant dentists who want to incorporate dynamic navigation into their digital workflow. For further information, course reservations or other related requests, e-mail: dns@claronav.com
preparation of the implant sites, the simple Navident protocol for calibration and verification of the drill axis and drill tip was carried out. A crestal incision was made, with a minimal flap reflected. The software shows the drill position on the scan in real time, as it enters the jaw. This allows adjustments to be made, if necessary, whilst the site is being drilled. Two Dentsply Ankylos® CX 3.5 mm diameter dental implants were placed subcrestally in the lower left first and second molar sites, with implant lengths of 11 mm and 9.5 mm respectively.

Avoiding damage to the inferior alveolar nerve was a crucial factor in the treatment planning of this case. Access was difficult, due to the limited opening of the patient’s mouth. The issue was compounded by the plan to place an implant as distal as the second molar. These challenges were overcome using Navident’s continuous internal visual feedback, which gave the author the confidence to use the optimum length of implant, whilst staying within a safe distance from the inferior alveolar nerve and avoiding post-surgical complications, such as paraesthesia.

Navident provided guidance for accurate implant location, even with restricted visibility and the drill being impeded by opposing teeth. Tactile feedback can often be reduced when using a physical drill guide. Dynamic navigation removes this obstacle. The author was able to achieve the best possible buccal and lingual position of the implants, and their relation to each other and to adjacent teeth (Fig. 5). This would allow for optimal shape, position and occlusal function of the final restorations.

Ankylos® Balance posterior sulcus formers were fitted and the incision was closed with simple interrupted sutures. There was no need for bone augmentation. Two to three months after surgery, the implants will be restored with Atlantis® custom made CAD/CAM titanium abutments and screw-retained linked zirconia crowns.

**Conclusion**

The clinical outcome was excellent. The planned placement was restoratively driven and the implants were well positioned, with good primary stability. Having used the Navident dynamic navigation system for more than a year, the author would not want to go back to preparing and placing dental implants without its 3-D visual guidance. The patient was comfortable and reassured, with no postoperative pain, swelling, bruising or paraesthesia. He was delighted and, if he needed any implant treatment in the future, would insist on dynamic navigation.
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“The natural oral microbiome is not associated with oral disease”

An interview with University of Leeds Professor Philip Marsh

By DTI

As Professor of Oral Microbiology at the University of Leeds, Philip Marsh has received national and international awards for his research in the field and is a regular conference speaker. At the Australian Dental Congress, where he recently presented three lectures on the topics of dental biofilms and oral microbial ecology, Dental Tribune Asia Pacific had the opportunity to speak with him about the relationship between lifestyle factors and the microbial composition and how to best maintain a healthy bacterial balance in the mouth.

Dental Tribune Asia Pacific: The microbial balance of the oral cavity is essential for dental (and overall) health. Could you briefly explain this relationship?

Prof. Philip Marsh: Humans and microorganisms have evolved to have a close and important symbiotic relationship, to the extent that we are 50 per cent microbial! These microorganisms [the human microbiome] are natural and deliver essential health benefits. In the mouth, the normal oral microbiome prevents colonisation by external microbes—some of which would be potentially pathogenic—and contributes to the development of our host defences and cardiovascular system. The natural oral microbiome is closely linked to oral health and is not associated with oral disease.

The oral microbiota is vulnerable to disruption by lifestyle and environmental changes. What exactly can cause a shift and what are potential consequences?

The symbiotic relationship between the oral microbiota and the host is dynamic and can alter if the oral environment undergoes a substantial change, often as a consequence of an altered lifestyle. A clear example is when salivary flow is reduced or when an individual more regularly consumes sugar-containing foods and beverages. In this situation, the dental biofilm spends more time at an acidic pH. This leads to an enrichment of acid-producing and -tolerating bacteria at the expense of beneficial organisms and increases the risk of dental caries. Similarly, the host mounts an inflammatory response if biofilm accumulates around the gingival margin. If this fails to reduce the microbial load, then the protein-rich gingival exudate that delivers the host defences inadvertently acts as a novel supply of nutrients for the proteolytic and obligately anaerobic bacteria in subgingival biofilms. These bacteria subvert the host response and in subgingival biofilms. These bacteria subvert the host response and this exaggerated response is responsible for host tissue damage.

Is the composition of the oral microbiota mainly based on heredity or can it be managed through external factors?

Some elements of the make-up of the oral microbiota are linked to heredity, but the general composition and activity of these microbes can be managed by effective oral hygiene and an appropriate lifestyle, for example reducing the amount and frequency of intake of fermentable sugars in the diet, avoidance of tobacco-smoking, etc. An unintended side-effect of some medications can be a reduction of salivary flow, which would disturb the natural balance of the oral microbiota and increase the risk of dental caries.

Dental care products aim to reduce harmful bacteria while maintaining the good ones. Is there a danger of using too much product and thereby destroying the oral flora?

The oral microbiota is natural and beneficial and therefore needs to be managed and maintained at levels compatible with oral health. Oral care products are designed and evaluated to support the patient and maintain an appropriate level of oral micro-organisms, so if they are used as intended, there is little danger of negatively disrupting the oral microbiota. In contrast, the long-term use of broad-spectrum antibiotics can lead to the suppression of significant numbers and types of beneficial oral bacteria, and this can result in overgrowth by yeasts or environmental microbes.

Bacteria play an important role in the development of diseases such as periodontitis or caries. Are there ways to manage harmful colonisation other than with dental hygiene measures, for example with vaccines, or will there be in the future?

New strategies to promote beneficial oral bacteria and/or to suppress the likelihood of disease are being developed. These strategies include the development of oral probiotic bacteria to prevent dental disease and the use of probiotics, which are supplements designed to boost the growth of beneficial bacteria. Novel anti-inflammatory agents are being evaluated that would promote wound healing and reduce the tissue damage caused by a subverted host response to subgingival dental biofilms. Molecules that reduce biofilm formation or inhibit species implicated in dental disease are under active investigation. Some snack foods and drinks contain sweeteners that cannot be metabolised into acid by oral bacteria.

Is dentistry experiencing greater challenges with regard to biofilms and bacterial shifts today than in the past, and if so, why?

The main differences today compared with the past probably surround the increased amounts of sugar in snack foods and drinks. Also, people are living longer and are retaining their teeth into later life, so the dentition is vulnerable to dental disease for longer, and this is coupled with the fact that a side-effect of many medications taken by the elderly is a reduction in salivary flow.

What strategies for keeping a healthy balance in the mouth can dentists teach patients?

The main strategies are for patients to practise effective oral hygiene and thereby reduce biofilm accumulation and to appreciate the impact of sugar in their diet on their risk of dental caries. It may be helpful if patients realise the relationship and direct link between their lifestyle, their oral microflora, and their oral and general health and well-being.

Thank you very much for the interview.
Acupuncture: Probing its way into dentistry—Part 2

Dental applications of acupuncture in managing xerostomia, dental anxiety and gag reflex

By Dr Wong Li Beng, Singapore

Management of xerostomia
Xerostomia may be medication-induced and other common causes are autoimmune conditions like Sjögren’s syndrome and irradiation of the head or neck region. Conventional management of xerostomia includes palliative treatment, such as a saliva substitute or chewing gum, and systemic medication, like pilocarpine.

The use of acupuncture as an alternative treatment modality for xerostomia has been documented in Western medicine since the 1980s. Observational studies have demonstrated that acupuncture treatment may increase salivary flow in healthy volunteers, patients with Sjögren’s syndrome and patients who have undergone radiotherapy of the head or neck region. In a long-term retrospective study involving 70 patients with xerostomia due to primary and secondary Sjögren’s syndrome, irradiation and other causes, the patients received a course of 24 acupuncture treatment sessions over the first six months. The salivary flow rate (SFR) for stimulated and unstimulated saliva was measured six months after the baseline acupuncture treatment and according to subjective changes observed by the patients. Data for up to three years was also analysed, comparing those who chose to receive additional acupuncture treatment with those who did not. The results showed that the SFR in both stimulated and unstimulated saliva was significantly higher after six months compared with the baseline and this was consistent with the subjective improvement described by the patients. In addition, patients who received additional acupuncture treatment after six months had a consistently higher median SFR in both stimulated and unstimulated saliva compared with those who did not, suggesting that supportive acupuncture treatment given over a long period may help to maintain its therapeutic effect. This finding is in accordance with the traditional Chinese medicine (TCM) concept that the treatment effect of acupuncture may be accumulative after repeated sessions.

Acupuncture treatment may provide relief for pilocarpine-resistant xerostomic patients after radiotherapy for head or neck malignancies. However, the treatment outcome for the study cited was only based on the Xerostomia Inventory score, which is a self-report questionnaire. Acupuncture seems to be able to increase the SFR, provided that the salivary glands are still functional. For those patients whose salivary glands have been structurally affected by radiotherapy and become resistant even to pilocarpine, acupuncture may provide supportive relief to a limited extent, although the patients should be advised on realistic expectations of acupuncture therapy.

The mechanism behind how acupuncture can increase the SFR is still not fully understood. It can be a placebo effect as shown in Pavlovian conditioning, in which expectation alone of those receiving acupuncture treatment may induce saliva production. Local acupoints in the head and neck region may also directly stimulate the nerves innervating the salivary glands. Some authors have suggested that acupuncture treatment triggers the release of neuropeptides and this can affect blood flow, have anti-inflammatory properties and exert a trophic effect on the salivary glands. Another possibility may be related to neuronal activation. In a descriptive study, cortical regions were evaluated using functional magnetic resonance imaging of volunteers undergoing acupuncture treatment. It was observed that acupuncture treatment activated the parietal, Rolandic and frontal opercula, as well as the insula, overlapping with the regions involved in gestation and salivation. The authors proposed that acupuncture treatment may tap into the neuronal circuit that activates the salivary nuclei in the pons and subsequently the salivary glands via the cranial nerves. More studies are needed to investigate how acupuncture therapy may increase salivary flow.

Management of dental anxiety and gag reflex
A recent Cochrane review showed that 31 per cent of adults are fearful of dental treatment. A phobic patient may develop reluctance towards or avoidance of dental treatment and thus not seek dental care. During dental procedures, an anxious patient

“...scientific evidence for [acupuncture’s] role in pain management is strong.”
Traditionally, medications like benzodiazepines and midazolam have been used to manage dental anxiety. The use of acupunture may provide an alternative treatment modality without possible adverse drug reactions. Several reports on the use of auricular acupuncture for treating chronic and acute anxiety have shown promising results. A randomised controlled trial comparing auricular acupuncture with intranasal midazolam for managing dental anxiety suggested that both treatment methods were similarly effective. More large-scale studies are needed to verify this finding.

The gag reflex is a normal protective, physiological mechanism that occurs to prevent foreign objects or noxious material from entering the pharynx, larynx or trachea. Its causes may be somatic, that is brought about by stimulating certain trigger areas in the oral cavity, or psychogenic, that is induced by thought stimulus modulated by the higher brain centres. A hyperactive gag reflex can be a hindrance to dental procedures, such as during taking of alginate impressions for denture fabrication.

The use of certain acupoints like PC6 (neiguan) and CV24 (chengjiang) have been reported to reduce the gag reflex significantly. Auricular acupuncture too has been suggested for treating a severe gag reflex. According to the TCM theory, the acupoint PC6 (neiguan), located on the palmar side of the forearm 2 in. (50.8 mm) above the transverse crease of the wrist, falls on the pericardium meridian, which has the effect of "calming the heart which houses the spirit." It is often used to treat heart palpitation, nausea and vomiting. In providing an explanation in the context of Western medicine, it has been proposed that acupuncture may trigger an increase in circulating endorphin, which binds to the opioid receptor, exerting an antiemetic effect.

The anti-gagging point located on the ear corresponds with the area of the skin innervated by the auricular branch of the vagus nerve and adjacent to the area innervated by the auriculotemporal branch of the mandibular division of the trigeminal nerve, both responsible for the sensory and motor function of the larynx, pharynx and palatal region. It can be postulated that stimulation of the auricular acupoint may inhibit the muscular function in the gag reflex. More studies to verify the effectiveness of acupuncture in controlling the gag reflex should be carried out.

Growing interest among medical and dental professionals

A recent press report in Singapore indicated that there are an increasing number of medical and dental professionals also trained in providing acupuncture treatment. Based on the official figure at the end of 2015, there were 249 registered acupuncturists in Singapore, of which 154 were medical doctors and dentists, constituting 54 per cent of the group. In addition, acupuncture treatment for pain management is currently being offered in four major public hospitals in the country, a major step towards its recognition as a treatment modality in the mainstream health care sector.

Conclusion

The use of acupuncture has a long history and has been proven to be an effective treatment modality in TCM. The scientific evidence for its role in pain management is strong, although more large-scale studies with better experimental designs should be carried out to verify its application in other areas. The use of acupuncture in dentistry may provide an added dimension to the patient-oriented holistic treatment approach that all health care providers should strive to achieve.

Editorial note: A list of references is available from the publisher.
Martina Hingis is on everybody’s lips—as CURAPROX’s global ambassador. The Swiss tennis player has been brand ambassador since the beginning of 2016 and embodies those things that have been important to CURAPROX since the brand’s development in 1972: health and success, quality and “Swissness”, lifestyle and a contemporary media presence.

Hingis stands for a new quality standard for oral health in that she uses the CURAPROX Super-duo: the CS 5460 toothbrush and matching interdental brushes. Hingis has this to say: “I always strive to be the best, and not just on the tennis court. I rely on CURAPROX products to provide the best dental quality. That’s how you make brushing your teeth fun!”

In 1997, Hingis became the world No. 1 women’s tennis player, the youngest ever at just 17. Her achievements include a silver medal in the 2016 Summer Olympics in Rio de Janeiro in Brazil and 22 Grand Slam titles. According to Ueli Breitschmid, owner and CEO of Curaden: “Martina Hingis is our perfect match—she is a great fit for our company, which is active in more than 60 countries, because she is a health-conscious and authentic ambassador known worldwide. Together, we want to be on everybody’s lips and continue with our success story of achieving better health for all.”

Hingis adds: “Overall health begins in the mouth so that is where success has to start. I can see that myself: in professional tennis, it is very important that everything be right, mentally and physically—and that includes the mouth. We all know how much toothache can affect one. With a good taste and a clean mouth, one starts the day feeling wonderfully refreshed, and pleasant breath makes one feel more confident. This makes oral hygiene even more rewarding. It is simple: the right products make my life so much easier.”

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