Thirty two-year old dentist is the first Thai woman to climb Mount Everest

By DTI

BANGKOK, Thailand: As the first woman from Thailand to do so, a dentist from Prachuap Khiri Khan has successfully summited Mount Everest. Napassaporn Chumnarnsit, who works at the provincial hospital in the southern town, reached the peak of the world’s highest mountain already on the morning of 23 May as part of the Thai Everest 2016 expedition.

Chumnarnsit successfully climbed Everest through the popular southern route starting in Nepal. The mountain can also be ascended from a northern route in China, as well as sixteen other routes.

Chumnarnsit is one of the latest of almost 7,000 climbers to have ascended Everest since the first successful attempt by New Zealand mountaineer Edmund Hillary and the Nepalese Sherpa Tenzing Norgay in 1953. In 2016, over 400 people successfully reached the summit, according to figures from the Nepalese Ministry of Culture, Tourism and Civil Aviation.

This year’s climbing season was overshadowed by the death of six people, most notably Australian climber Maria Strydom, who began suffering severe symptoms of altitude sickness 15 minutes away from the peak and died soon thereafter.

In total, the mountain has claimed 265 lives over the last 70 years. Only two years ago, 16 Nepalese climbers died in an avalanche in the Khumbu Icefall, which resulted in the mountain being closed for most of the 2015 climbing season.

Also notorious was the 1996 disaster, which took eight lives and was documented in a book and feature film.

Part of the Mahālangūr Himal section of the Himalayas stretching from Nepal to Tibet, Mount Everest is the world’s highest mountain with a height of 8,848 m. It overtops K2, which is approximately 250 m lower, and the nearby Kangchenjunga at the India–Nepal border. Every year, hundreds of climbers from all over the world attempt to scale the giant peak.
First special needs dental clinic opens in Singapore

By DTI

SINGAPORE: The first dental centre functionally designed to cater for the elderly and people with special needs was recently opened at the National Dental Centre of Singapore in Outram. The Geriatric Special Care Dentistry Clinic offers a full range of oral health services customised for patients with complex medical needs, including a wheelchair-tilting device that allows patients to remain in the wheelchair during dental treatment.

The National Dental Centre opened the clinic in response to Singapore’s rapidly ageing population and growing demand for oral health care among seniors. Although critical, oral health is an often under estimated component of the overall well-being of geriatric and special needs patients, he said.

“We must also invest in training dental healthcare professionals to better serve our seniors and undertake more research in disease trends in geriatric dentistry,” Gan stressed. In addressing this issue, the clinic will serve as a training ground for the next generation of oral health professionals who are specialising in this field.

As reported by Channel NewsAsia, the Ministry of Health is already offering scholarships for dentists who are keen to take up the challenges of geriatric and special needs dentistry. So far, four dental professionals have completed specialty training under this programme in the clinic.

Being the first of its kind in Singapore, the clinic has seen more than 4,000 patients to date. A second geriatric and special needs dentistry clinic is being planned at the upcoming Centre for Oral Health at the National University Health System and is expected to open for service in 2019.

King’s College London collaborates with China’s largest dental group

By DTI

BEIJING, China & LONDON, UK: King’s College London Dental Institute is extending its international reach with the launch of a number of activities that will see the institute partner with BYBO Dental Group, one of China’s largest dental providers, over the upcoming months. The collaboration started in July with a distance learning programme that will offer BYBO staff across China training and information on the management of tooth wear and occlusal change.

In addition to the distance/ blended learning programmes, face-to-face lectures by King’s academics, including Prof.Sean Raman Bedi, Martyn Cobourne and Francis Hughes, were held at various sites in China. The programmes were designed to provide the new information available to the BYBO staff in both English and Mandarin.

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By continuing to provide professional education, the partnership will include staff exchange, as well as the transfer of clinical expertise and protocols, over the next three years.

Estimated to be worth £3.6 million, the collaboration agreement was first announced at the end of 2015.

“King’s Dental Institute’s commitment to improving oral health knowledge and provision in practice around the world shines through in this collaboration,” commented Prof. Dianne Rekow, Executive Dean of the Dental Institute, on the partnership. “Not only is it a fantastic opportunity to share our world-leading expertise with BYBO, but it also offers us a unique chance for us to learn from one of China’s most renowned dental providers.”

Founded in 1993, BYBO consists of 200 chain dental clinics with approximately 6,000 employees across China, according to its figures.

Wheelchair-bound patient being treated on wheelchair tilting unit.
HOUSTON, USA: World Hepatitis Day is one of four official disease-specific World Health Organization (WHO) health days. It aims to raise awareness about viral hepatitis, which can be transmitted through unsafe injection practices and inadequate sterilization in the health care setting. Hepatitis C is associated with liver cirrhosis and other diseases. For example, a new study has shown that individuals infected with the hepatitis C virus are at a greater risk of developing oral cancer.

In the study, researchers at the University of Texas MD Anderson Cancer Center investigated medical records of 409 patients with new-onset primary oropharyngeal or nonoropharyngeal head and neck cancers, as well as 694 controls with smoking-associated cancer of the lung, esophagus or urinary bladder, who were all tested for the hepatitis C virus from 2004 through 2014 at the center.

They found that the prevalence of the hepatitis C virus was higher in oropharyngeal cancer patients (14 per cent), particularly human papillomavirus-positive oropharyngeal head and neck cancers, as well as 694 controls with smoking-associated cancer of the lung, esophagus or urinary bladder, who were all tested for the hepatitis C virus from 2004 through 2014 at the center.

They found that the prevalence of the hepatitis C virus was higher in oropharyngeal cancer patients (14 per cent), particularly human papillomavirus-positive oropharyngeal cancer patients, and nonoropharyngeal head and neck cancer patients (20 per cent) compared with controls (6.5 per cent).

The study, titled “Association between hepatitis C virus and head and neck cancers,” was published in the August issue of the *Journal of the National Cancer Institute* by Oxford University Press.
Henry Schein completes Asia investment

By DTI

KYOTO, Japan/MEVILLE, USA: Last week, Henry Schein announced the completion of a 50 per cent equity investment in One Piece Corporation, a subsidiary of J Morita. Henry Schein first entered the Japanese market in October 2014, with an investment in its own Dental Supply, a full-service provider of dental consumables, implants and equipment.

“We are delighted to move forward with our partnership with Henry Schein,” said Haruo Morita, President and CEO of J Morita. “We share a devotion to innovation, the ability to adapt to changing market conditions, and a strong commitment to industry leadership that will enhance our efforts to help practicing dentists in Japan deliver quality oral health care.”

With the partnership, Henry Schein has expanded its presence in Japan, the second-largest dental market in the world. One Piece is composed of eight dental dealers throughout Japan, which serve approximately 6,000 dental clinics and had aggregate sales of approximately US$152 million in the 2015 fiscal year.

Commenting on the partnership, Henry Schein CEO Stanley M. Bergman said: “We are committed to the Japan dental market and with Kenichiro Iwase, assuming the leadership of Henry Schein Japan, we look forward to a strong partnership that will bring new services and solutions to the Japanese dental community.”

Japan has approximately 90,000 dentists and about 84,000 dental clinics. With the addition of One Piece, Henry Schein Japan will serve approximately 20 per cent of Japan’s dentists.

Red and white aesthetic harmony

By DTI

SINGAPORE: In order to help clinicians to create lifelike direct resin restorations, dental materials company SHOFU has introduced Beautifil II Enamel and Gingiva. Developed as complementary extensions to Beautifil II, both are made from specially modified multifunctional organic fillers and nano-fillers, providing them with exceptional handling characteristics, longer working time, high abrasion and wear resistance, of dental consumables, implants and equipment.

As well as stable shades, the company said.

Moreover, effortless and superior polishing with sustained polish retention achieves lasting aesthetics. SHOFU’s proprietary S-PRU fillers release fluoride and exert an anti-plaque effect on the restoration surface. A special one-push syringe ensures controlled dispensing of the smooth and creamy material that is easy to sculpt into fine details to recreate the surface textures seen in natural teeth and gingivae.

Beautifil II Enamel is available in four naturally translucent and opaque shades that facilitate lifelike shade reproduction and value adjustment in the final restoration to meet individual clinical needs. Beautifil II Gingiva offers five natural shade variations of pink to easily mimic the patient’s gingivae while restoring areas with receded or missing gingivae or papillae, cervical defects, root caries or erosion, or exposed porcelain-fused-to-metal margins and abutments to achieve red and white aesthetic harmony.

The bond agreements between the two companies provide Straumann with the right to convert them into MegaGen shares. An additional agreement with the main shareholders of MegaGen entitles Straumann to purchase an additional number of shares in MegaGen to obtain a controlling stake in MegaGen.

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Straumann’s decision to exercise the conversion right and call option has triggered the process in the agreements to determine the conversion rate and the price of the additional shares. MegaGen has disputed the conversion price and calculation procedure and has initiated arbitration in Seoul in South Korea under the International Chamber of Commerce rules. Expediency is in the best interest of all parties involved, and Straumann is in the process of responding in order to close the deal as soon as possible. This could take up to two years, depending on the progress of the arbitration.

Straumann CEO Marco Gadola explained: “Our investment has helped MegaGen to drive its growth strategy and to achieve good results in 2015. However, with its domestic market highly penetrated and our industry consolidating rapidly, we are firmly convinced that it is in the best interest of MegaGen’s employees, customers and shareholders to have a strong global partner who can help the company to provide complete solutions and to expand internationally. At the same time, MegaGen complements our portfolio with differentiated products and could help us to address the value segment more effectively particularly in the Asia-Pacific and Middle East regions.”
“The journey of innovating the clinical workflow has just begun”

An interview with Nobel Biocare and Digital Imaging President Hans Geiselhöringer

From 23 to 26 June, Nobel Biocare held its global symposium in the world metropolis of New York in the US. The company staged a truly exceptional event with a high-class educational programme at the Waldorf Astoria in Manhattan. As the official media partner of the event, Dental Tribune International had the opportunity to meet with Hans Geiselhöringer, President of Nobel Biocare and Dental Imaging, at the symposium for a short interview.

Dental Tribune International: Has the global symposium met your expectations?

Hans Geiselhöringer: We are extremely happy with the symposium because it has exceeded our expectations in every sense, from the record number of participants to the motivation of our team and customers to engage in discussions, as well as the quality of the speakers and their presentations. We have always had high standards at our meetings, but I must say that I was really thrilled by the way innovation was presented not only by our company but also by the clinicians and experts themselves.

In addition, I found the NEXT GEN forum in particular incredible, as it gave us confirmation that we are on the right track to doing more for the younger generation of implantologists. I was positively surprised to see how enthusiastic and open our young clinicians are to working hard with us to move this project forward.

Overall, we have seen at this symposium that the future is bright, and I strongly disagree with some critical voices that suggest that there will no longer be real innovations in implantology.

With regard to training of the next generation of dental professionals, what kind of role can or should Nobel Biocare play in implant education?

“I believe that even experts cannot predict the impact of the Brexit on the industry.”

In my opinion, the journey of innovating the clinical workflow has just begun.

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Dental implant manufacturer MIS announces future strategies

By DTI

BARCELONA, Spain: Founded in 1995, MIS Implants Technologies started out as a small implant company in the discount segment, but has developed into a successful global business over the past 20 years. At a press conference held during the MIS Global Conference in Barcelona in May, the management team gave a detailed outlook on the company’s future strategic developments, product innovations and potential growth markets.

In order to pursue considerable growth and address challenges in the implant market, MIS made a number of organisational changes to the company structure several years ago. One of these was integrating research and development functions into the marketing and sales department, a move that transformed the department’s way of working.

Since 2013, Donon Peretz, Senior Vice President of Marketing and Development, has been guiding the R & D division at MIS. MIS management identified three markets offering opportunities for considerable growth, namely Germany, the US and China, where MIS only recently opened a new subsidiary.

"The key to continuous growth is innovation. However, it is not easy to drive innovations from in-house. Therefore, our marketing team, who is most exposed to the current opportunities of the market, has contributed a lot to exploring and bringing new ideas to research and development, and we are progressing rapidly in expanding our portfolio with this approach," he said.

He further explained: "Today, the dental implant market is divided into the premium, the value and the discount segment. We predict that about five years from now this will no longer be the case. The main reason is that dentists will no longer accept low-value discount implants. MIS is currently leading the value segment and will continue to do so."

MIS CEO Idan Kleinfeld added: “Today, it is crucial to offer complete solutions and in line with our philosophy ‘Make it Simple’, our primary principle is to simplify every stage of the implantology process. The combination of mechanical design of the V3, biological properties of the new B+ implant surface, and digital technology with the MGUIDE, allows us to provide clinicians with highly effective solutions that produce safe and predictable results."

"We want to become the most innovative company in implant dentistry and we are now close to fulfilling this aim with our latest developments," Kleinfeld concluded.

To continue leading the value market

"...dentists will no longer accept low-value discount implants."

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"We want to become the most innovative company in implant dentistry and we are now close to fulfilling this aim with our latest developments," Kleinfeld concluded.

"The Brexit will affect us as Nobel Biocare directly. I do not yet know how. However, I can tell you already that there will be significant innovations presented. The potential that we are going to bring to the market will be of the same magnitude as that experienced at the symposium over the past few days.

"Nobel Biocare will accelerate its delivery of significant and meaningful innovations, each developed with the well-being of the patient in mind.

Thank you very much.

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Thank you very much.
As a business consultant, I have been providing training, coaching and mentoring services to UK and Irish dentists and their teams for the last 23 years. Additionally, I have had the opportunity to work with clients in a number of European and other countries, including Turkey, India, the US, Canada and Australia. I consider myself a bit of a rebel and love to talk about innovation in business and how it applies in dentistry and the wider health care environment.

In this article for Dental Tribune I want to take you back to the mid-1990s and my first experience of working with UK dentists, providing team training workshops all across the country. Inevitably, there would come a point in one of those early workshops at which an attendee would raise his or her hand and, instead of asking a question, make a statement that came down to something like “Chris, this is all very good and exciting, but you need to understand that here in [insert place name] things are different.”

Candidates for “insert place name” ranged from the valleys of southern Wales to the West End of London, from north to south, from crowded to thinly populated areas; references were made to cosmopolitan, suburban and rural communities. The speaker would elaborate and suggest that whatever idea I was proposing would fall on stony ground because of the idiosyncrasies of the local population or macro- and micro-economic circumstances.

As a speaker, one learns to deal with such objections and concerns with empathetic listening and compassion, but I gradually realised that in each of these locations, there were dentists who were just getting on with the job and enjoying great success, because they were either oblivious of or immune to those self-limiting beliefs. Now, do not get me wrong here, if your dental practice is situated in a town where a significant proportion of the population is dependent on one major employer that then closes down, even the greatest optimist and positive thinker would have to take a reality check and respond. Thankfully, such economic disasters are relatively few in number. Most of the time, the aforementioned statements of difference are a self-fulfilling prophecy on the part of the conference questioner.

The caring speaker will try to engage the attendee in meaningful dialogue, but experience shows that, sadly, the critic rarely wants to be persuaded away from his or her unfalsifiable hypothesis. Bringing this phenomenon into the second decade of the twenty-first century, the most frequent use of the phrase “ah, but it’s different here” relates to the digital marketing landscape. Whenever I comment in writing or at a conference on the explosive growth of digital, there will inevitably be a listener who wants to tell me that people in his or her postcode are not on the Internet, do not use social media and do not have e-mail addresses. Mirroring my earlier experience, I then meet dentists in the same location who are happily generating digital sales.

A recent internal survey of my top clients (located across diverse geographical and economic locations) revealed the starting fact that almost 66 per cent of their website visits were from mobile devices—smartphones and tablets—thus demonstrating that website appearance on a 27-inch iMac screen is no longer as important as how it looks on mobile.

If I now refer back to the international locations in which I have had the opportunity to work, I can think of not one of the listed countries in which I would argue that the situation is different. Perhaps the most notable of these is Pune in northern India, where I was privileged in February to deliver a two-day workshop to 50 dentists from that city and nearby Mumbai. Halfway through the morning on my second day there, an attendee rose to his feet and requested a hand mike and I knew what was coming: “Chris, we have all enjoyed your lecture so far, but you need to understand that here in India things are different,” he said.

I listened, acknowledged and then simply carried on, because the knowledge that Mumbai is now regarded as the health care tourism capital of the world, that technology is influencing society as rapidly as anywhere and that the traditional Indian business model of sole-trader dentists with no nurse, no hygienist and no associate is rapidly being replaced by dental corporates and retailers, as is the case everywhere. In my original travelogue, I had listed of countries, there is not one excluded from the information and connection revolution that is reshaping all of our lives.

People are people. The independent traveller of 50 years ago would have commented on diverse cultures. In 2016, the same traveller will comment on similarities, whether good or bad. The global village contains dental patients and they have similar needs and expectations of value. So if you are looking for tips on how to improve your dental business, you now gain a global perspective when observing best practice.
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Melanin depigmentation of gingiva using various laser wavelengths have been reported for over ten years.\(^1\)\(^-\)\(^5\) Layer by layer, the mucosa is ablated to the basal layer of the epithelium where the melanocytes are located. Lasers have been compared with the use of scalpel and diamond bur (Fig. 1).\(^6\)\(^-\)\(^9\) By incorporating the optical properties and absorption characteristics of 810 nm together with specific power parameters, a non ablativ technique was developed (Fig. 2).\(^10\)\(^-\)\(^11\)

Another similar non-ablative technique described as microcoagulation was also reported using a 20 W 980 nm diode laser.\(^12\) The 445 nm blue wavelength was introduced in the dental market in 2015. By using 320 µm uninitiated fibre delivering 1 W continuous wave of 445 nm, the same non-ablative procedure and result can also be realized.

**Background with non-ablative technique**

Diode laser at 810 nm is poorly absorbed in water, but it is well absorbed by pigment such as haemoglobin and melanin. The use of high power, short pulse duration concentrated the thermal energy on the surface over deep tissue thermal conduction with lower power and long pulse.\(^3\)\(^4\) The author has used the 810 nm wavelength (elexxion Claros 810 nm diode laser, elexxion AG, Singen, Germany) with the power parameters of 30 W, 20 kHz, 16 µs giving an average power of 10 W. Under local anaesthesia, a non-initiated fibre was used. The fibre was placed at a distance of 2 mm to 5 mm from the pigmented mucosa. Coagulation can be observed with immediate effect upon irradiation. A constant movement must be performed in order to avoid thermal damage deep into the tissue. Water irrigation can be used as coolant during the treatment.

There is no surface ablation of the pigmented mucosa but rather the haemoglobin and melanin absorbing the laser energy (Fig. 2). This technique (Figs. 3–6) showed a treatment time of two minutes compared to the ablative technique time up to 30 minutes in an area of first premolar to first premolar of one dental arch. The wavelength of 445 nm is much better absorbed by melanin and haemoglobin than 810 nm (Fig. 3). Hence, a much lower power density may be used to produce the same effect.

**Case outline**

A 26-year-old female patient of Chinese ancestry presented with melanin pigmentation in 2007. Congenital melanin pigmentation of the labial gingiva was diagnosed. Depigmentation on the upper arch using 810 nm at 30 W, 20 kHz, 16 µs was carried out. Eight years post-op showed mild relapse of pigmentation, but the patient was satisfied with the cosmetic appearance (Figs. 3–6). She now wanted the melanin pigment on her lower anterior segment to be removed (Fig. 8).

**Purpose**

Pigment removal in the requested sites was discussed using 445 nm diode laser. The same technique would be used and the patient consented to the treatment.

**Material and method**

SIROLaser Blue (Dentsply Sirona) with an emission wavelength of 445 nm was used at 1 W, CW delivered through a 320 µm fibre.

**Procedure**

Depigmentation technique is the same as described with the 810 nm wavelength (above). Under local anaesthesia, a non-initiated 320 µm fibre delivers the energy at a distance of 2 mm to the pigmented area with constant movement. Immediate change to pink colour without surface ablation of the pigmented mucosa was observed.

**Fig 1:** Depigmentation by ablation.

**Fig 2:** Depigmentation by absorption of melanin and haemoglobin.

**Figs. 3–6:** Depigmentation on upper arch using 810 nm at 30 W, 20 kHz, 16 µs, pre-op, immediate coagulation, three weeks post-op and eight years post-op.

**Fig 7:** Absorption spectra of biological materials. (Courtesy of J. Meister)

**Figs. 8–11:** Depigmentation of lower arch using 445 nm at 1 W CW, pre-op, immediate post-op, one day post-op and one day post-op laser peel between 31, 41.—

**Fig. 12:** Three days post-op (photo taken by patient on holiday).—

**Fig. 13:** Two weeks post-op.
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served. The procedure took approximately 40 seconds to complete between lower left and right canine region.

Results
In this case, the mucosa turns pink without any signs of surface mucosal ablation except one spot between teeth 41, 42 (Fig. 9). Sub-surface coagulation of blood vessels gave a pink coloured appearance. There was very mild post-op discomfort for about one hour after loss of the anaesthetic effect. No analgesics were required as the discomfort feeling disappeared fast.

Laser peeling of mucosa between 31 and 41 was noted during photograph taking at one day post-op review (Figs. 10 & 11). The three day post-op photo taken by the patient showed that the laser peel disappeared with new gingival mucosa formation (Fig. 12). Two weeks post-op showed complete recovery of the gingival mucosa without melanin pigmentation (Fig. 13).

Discussion
There has not been much information on this new wavelength. From Fig. 7, the absorption coefficient for haemoglobin is estimated at $7 \times 10^2 / \text{cm}^{-1}$ and $10^3 / \text{cm}^{-1}$ for melanin. Penetration depth for haemoglobin is calculated at 140 µm and 10 µm for melanin. The penetration depth of haemoglobin and melanin with 810 nm are 2 mm and 0.1 mm respectively. Furthermore, scattering curve showed less tissue scattering effect with 445 nm than 810 nm.

In view of the low scattering effect together with high absorption of haemoglobin and melanin to 445 nm, 1 W CW was used. Power density of 88 W/cm² (Fig. 14) delivering at 88 J/cm² fluence at 2 mm distance was calculated. Although the power density of 1697 W/cm² (Fig. 15) delivering 543 J/cm² fluence used by 810 nm is higher than 445 nm delivered, the eight years post-op showed stable gingival contour with no recession (Fig. 16). The understanding of the optical properties of the wavelength, power parameters and laser tissue interaction are important information for the clinician to achieve the desired treatment outcome.

Conclusion
The use of 1 W CW 445 nm blue diode laser is effective in non-ablative depigmentation of oral mucosa. This non ablative technique provide immediate aesthetic result with very short procedure time. To the author’s knowledge, this is the first case presented using 445 nm for melanin depigmentation.

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

Dr Luk reports no potential conflicts of interest.
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“There certainly is a learning curve to technology”

An interview with dental technician Lee Culp, CEO of Sculpture Studios

Having been at the forefront of the digital evolution in dentistry for 20 years now, Lee Culp can be considered a true digital pioneer. At this year’s International Expert Symposium, hosted by Ivoclar Vivadent in Madrid in Spain, he lectured on the impact of digital restorative dentistry for improving communication and teamwork in daily practice. Dental Tribune had the opportunity to speak with him about his fully digitally operated dental laboratory, Sculpture Studios, and when he realised that the future of dentistry is digital.

Dental Tribune: Although dentistry is evolving towards the digital world, the dental community still seems divided when it comes to acknowledging the relevance of digital dentistry.

Lee Culp: Yes, we have those who embrace digital technology and there is the group that is still concerned about, confused about or fearful of digital technology, but there is also the group in the middle, which is the largest one. They have bought the equipment, but not made the change yet. For example, they have a scanner, but they do not really do anything with it. One could say that they have not fully committed yet to using the technology to its fullest.

As software and fabrication processes continue to evolve, practitioners need advanced training. Do you think there are enough educational opportunities available today and are they adequate?

There certainly is a learning curve to technology, and from my point of view, the digital companies do not necessarily do the greatest job of training. They are good at basic training upon sale, but there is just not a great deal of advanced training out there. We run a digital academy back in the US and we offer a large number of courses. However, there need to be more in each country, because more people want to know how to accomplish advanced things, such as smile design, implant placement, surgeries—all of those things. There is a great need for education but not enough education providers.

What is the focus of your company?

For one, it is a dental laboratory where we create dental restorations, but we also conduct a great deal of research, both on materials and on technology for many different companies. For example, I have served on a number of development teams for several of the major Ivoclar Vivadent products. In our laboratory, we assisted in the development of the product Empress Esthetic, as well as the Ivoclar Denture teeth. We are hired as consultants to work on projects from companies, and we provide education to dentists and laboratory technicians—all digitally based.

I know exactly when that was. CEREC (Sirona) hired me as a consultant to help create a laboratory system. When I started with CEREC, it could not produce a 3D representation of a tooth. It produced many lines on the screen and one had to interpret those lines to make out a tooth.

It was incredibly difficult. So, the aha moment was when the engineers and marketing people came over from Germany and they hooked up the computer to a projector and a screen and I saw a tooth moving. I knew right away: this is it!

With all the digital possibilities available, will traditional expertise and technical skills become somewhat obsolete?

Whatever design is produced on the computer and by machine, the final 25 per cent has to be done by hand. One still has to mould, carve, glaze, colour—whatever we do. We do not lose this; we just get to the artistic part faster and more efficiently now, but one still has to be a very well-trained technician or dentist. A bad technician is not going to be able to take an impression with vinyl, one is probably not going to be able to take an impression with digital technology either.

In your lecture, you spoke about how digital technology can improve communication. Could you please explain that aspect?

It is mainly about the amazing visual possibilities. With the new technology, I have the case digitised in the computer. I can move it around, invite the dentist to view the screen and discuss everything while I change something on the computer. The dentist understands my challenges and sees the situation from my perspective, and I do not have to verbalise it over the phone.

This facilitates long-distance communication too, for example if specialists or patients live in remote areas.

Yes, we have had cases from all over North America, Great Britain, Denmark and Australia, to name a few, and apart from the time difference, the digital technology enables one to work closely together on cases wherever one is in the world. It also makes the workflow much easier because everybody involved is on the same page.

From your perspective, what are the next developments to expect in the digital field?

If one imagines diagnosis and treatment planning to be on the far left of a scale and the process of making the restoration on the right, digital technology is already very advanced on the manufacture side. However, it has not progressed as much in terms of the planning process, except for implants maybe—but implant planning does not consider the overall picture, the entire mouth. It is just planning software to put something somewhere surgically.

Right now, we have software for the last 50 per cent, now we need software for the first 50 per cent. Companies like Scanbox are starting to respond, as they are starting to realise the importance of the diagnosis and treatment planning process.

Another development is predictable software. I believe that every child in the permanent dentition starts to erupt, should be given a full-mouth scan every six months. With each scan, we would know what to be aware of in terms of tooth movement, tooth wear, bone and tissue changes. In dentistry today, we mostly do not act before there is an obvious problem. Therefore, we need to have predictive software to change that, namely processes and technologies that can sound the alarm before something is seriously wrong.

Thank you very much for the interview.
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Single-use hand instruments
Making a case for their use in general dental practice

By Robert Jagger, UK

A wide range of single-use disposable dental and surgical instruments is now produced by a number of manufacturers. Instruments are available for purchase either singly or as procedure kits and are priced relatively as a realistic alternative to decontaminating reusable instruments. Paradoxically, single-use instrumentation is rarely seen as a viable alternative by dental professionals, who typically associate single-use instruments with cheap unreliable plastic devices and a very limited product range. In reality, there are mirrors, probes, restorative instruments, endodontic instruments, minor oral surgical instruments and extraction forceps for both adult and paediatric use.

Procedure packs too are available for specific procedures and contain all of the necessary instruments. Examples of packs include those for dental and periodontal examination, restorative procedures, maxillofacial biopsy, minor oral surgery, and periodontal microscopy. This article seeks to challenge current clinician perceptions of single-use instrumentation by examining the potential benefits of high-quality single-use instruments in daily practice.

Quality
Single-use instruments can be of extremely high quality and may be almost indistinguishable in use from reusable instruments. Clinicians often comment that they are impressed by their quality and functionality and that they appear far too good to throw away after just one use. These instruments are a significant step forwards from the poorer quality equipment that was previously available.

Before selecting a supplier of single-use instruments, however, it is critical to ensure that they comply fully with all relevant British and European medical device regulatory standards and that they are manufactured from medical-grade surgical steel and undergo rigorous, quality assurance checks and batch testing. Purchasing instruments from a supplier approved by the British Dental Industry Association will provide practitioners with assurance that they are dealing with an appropriately regulated manufacturer.

Sterilisation
One of the most significant changes to have affected the dental profession in recent years has been the emphasis on rigorous sterilisation and cross-contamination procedures (HTM 01-05). Decontamination in Primary Care Dental Practices.1 Dangers posed by prion diseases, such as variant Creutzfeldt-Jakob Disease (vCJD), remain even with the most effective dental sterilisation processes. The prion associated with vCJD is able to survive steam autoclaving under standard exposure conditions,2 suggesting that some reusable surgical instruments are potentially being utilised in a contaminated state. Use of single-use disposable instruments ensures that instruments are not contaminated, protecting patients and clinical staff alike.

Dental Costs
Most general dental practices are now equipped with HTM 01-05 compliant equipment. Re-processing dental instrument trays, however, inevitably leads to significant wear and tear and ultimately instrument damage. Regular sharpening and replacement of reusable instruments too is necessary for instruments such as locators, chisels and elevators. This can add substantial costs to the reprocessing of reusable instruments. Re-processing protocols dictate that a dental practice must hold significant stock of expensive reusable instruments, much of which often lies redundant at any given point in time.

Single-use instruments can provide a cost-effective continual cover to unexpected emergency situations in which reusable instruments may be unavailable, for example when managing unplanned surgical complications or when washer disinfectors or sterilisers are inoperable and significantly clinical time may be lost while waiting for the arrival of a skilled service engineer. Single-use instruments enable clinicians to forecast true procedure costs accurately, as there are no hidden costs associated with the decontamination, sterilisation and packaging of reusable instrumentation.

Convenience
Among other applications, single-use packs allow rapid and efficient management of dental extractions that become complicated by, for example, crown fracture. Contingency stock of single-use surgical packs (comprising integral single-use scalpels handles and blades, tissue retractors, periosteal elevators, dental elevators and suture packs) enables highly convenient, efficient and cost-effective management of complications.

Single-use conservation and examination packs provide a cost-effective means of extending the length of daily clinic treatment sessions, especially towards the end of the day, when access to sterile reusable instruments may be compromised owing to sterilisation equipment downtime or cleaning routines (when nursing staff are therefore unavailable for clinical duties).

In endodontics, clinicians can more effectively identify and control procedure costs and maximise their return on time-consuming and costly procedures with the use of single-use rubber dams and root canal obturation packs. Safety-conscious patients are increasingly requesting that single-use instruments be used for their treatment because they feel more comfortable if the hand instruments used to perform their procedure are brand new and have never been used on another patient. Single-use instruments eliminate infection prevention concerns associated with the reprocessing of reusable instruments.

Single-use dental scalars are an efficient solution for dentists, dental hygienists and dental therapists, since every instrument is guaranteed to be sharp for every procedure, enabling reduced treatment times and less patient discomfort. The Instrapac Periodontal Micro-surgery Pack (Robinson Healthcare) is designed to facilitate complex periodontal surgical procedures in a cost-effective way, ensuring that are designated as a specialist clinical waste stream and as such must be disposed of in accordance with UK and European clinical waste management regulations. Historically, this has meant that they were disposed of alongside clinical sharps waste and ultimately conveyed to incineration and landfill. This has previously given rise to concerns over their adverse environmental impact.

However, a recent innovative partnership between Robinson Healthcare and one of the country’s largest specialist healthcare waste management companies, Healthcare Environmental Group (HEG), has led to the development of a unique UK-wide recycling programme for single-use surgical steel instruments. Under this initiative, HEG is now able to provide disposable dental practices with a unique reusable Healthcare Sharps waste container. The company has a fleet of dedicated, regulation-compliant, purpose-designed vehicles and the capacity to service individual dental practices and clinics with scheduled waste collection and deliveries. Containerers are tracked from practice to recycling station using GPS tracking and trace technology. Depending on the annual volume of steel recycled, HEG is potentially able to offer a payback to dental practices that use the Healthcare Sharps recycling service. Overall, HEG operates nine processing and energy recovery sites across the UK, providing an energy recovery programme that maximises the environmental benefits.

Conclusion
The use of high-quality single-use instruments can provide significant advantages to dentists in general dental practice, particularly in terms of sterility, convenience, efficiencies and reduced operating costs. Packs, such as surgical, restorative, periodontal and implant packs, can be particularly helpful. The purchase costs of the single-use instrument option are less significant when the substantial hidden costs of reusable instruments are considered, and their cost in use is typically significantly less than the reusable instrument option. Furthermore, recent advances in the way that these instruments may be recycled have effectively addressed environmental concerns.

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

Robert Jagger is a consultant in restorative dentistry for the University of Bristol Dental Hospital and a senior clinical lecturer at the School of Oral and Dental Sciences. He can be contacted at R.Jagger@bristol.ac.uk.
The emergence of STO and its future implications in general practice. ByAws Alani, UK.

The provision of orthodontics can be a life-changing experience for young patients whose “crooked” teeth can affect their confidence and self-esteem. Indeed, where mature patients present with a history of malalignment, it equally benefi cial and attaining results can be achieved. In government-funded systems, patients with congenital abnormalities receive treatment that is essential to their ongoing oral health. Restorative dentists work closely with orthodontists, who can appreciate how small details can aid in achieving positive restorative outcomes.

As a young dentist, I corrected a tooth in crowsbite with a simple T-spring appliance. It was enjoyable and brought a different type of delayed gratifi cation satisfaction to the more cerebral but tenuous molar endodontics or the more artistic and incomplete composite build-up. I was not a specialist, but I managed to do some orthodontics. In contrast to my experience, general dental practitioners are now more routinely providing tooth movement with the emergence of short-term orthodontics (STO). This has resulted in some conjecture as to the methods of achieving “straighter” teeth. Indeed, some may consider STO as an emerging entry competing with specialist orthodontists, but should it be?

The specialist training pathway for orthodontics involves a competitive-entry three-year full-time course linked with the achievement of a master’s level qualification that many may feel daunting by indeed, navigating the pathway from start to finish can be diffi cult academically and fi nancially when factoring in fees and loss of earnings during training. Once qualiﬁ ed, the majority of these specialists reside, like the majority of all specialists, in the south-east of England. With this skewed distribution of specialists and assumed need for access, it might seem prudent for general dental practitioners to contribute to meeting the need for orthodontists.

Indeed, the long-cited managed clinical networks have yet to be fully realised, although all planning and documentation related to managed clinical networks identify general dental practitioners as integral to the function of the network. The number of orthodontic therapists has gradually increased over the last ten years or so since inception of the fi rst courses in Wales and Leeds. Therapists are allegedly more cost-effective to train and employ in a large orthodontic practice; however, unlike their hygienist or therapy colleagues, they cannot practise without a specialist’s treatment plan and supervision.

Patients who qualify for orthodontic treatment under the UK government-funded system need to be assessed according to the index of orthodontic treatment need. There will be an obvious shortfall of adults or adolescent patients with minor malocclusions who do not meet the criteria who would like their teeth straightened. This cohort may have to seek treatment privately from orthodontic specialists or general dental practitioners. As such, these minor or straight-forward cases may be managed in a number of different settings utilising various techniques with the advent of STO. This may have resulted in some territorial paranoia between the two camps of traditional orthodontics versus STO systems. Conversely, it may be that differing scientific, technical and ethical ethos on managing the same problem is the source of the debate.

Quick and easy? Commercialisation has modifi ed the provision of orthodontics in the UK. Indeed, there are now orthodontic brands with courses attached and a faculty of individuals who promote their particular product. Companies tend to boast that their product is the best with limited complications and treatment being low risk, predictable and easy. Somewhat surprisingly, courses are being run on how to convert patients into orthodontic clients. There are books describing strategies on promoting and increasing revenue. They outline detailed strategies on attracting more patients than one’s local competitor—or is that a colleague? Sounds more like capitalism than commercialism to many inter- ested observers.

The rapid development of STO has not escaped the venture (or some may say vulture) capitalists. In the same vein as DIY whitening and sports guards, one can now have one’s teeth straightened via online companies using products delivered by Her Majesty’s Royal Mail and not cut the middleman (i.e. the dentist). To my knowledge, STO has yet to make it on to the price list of Samantha’s, a beauty salon in Peckham.

What may cause fear and worry is that the provision of tooth movement set against a backdrop of a focus on increasing revenue and patient conservation may detract from the real reasons we are providing the treatment. The risk and benefi t of treatment must remain balanced or be rebalanced in favour of the patient.

The best things in life are rarely quick, easy and without refl ection. While learning or training, one gains stature from one’s mistakes and learns by way of osmosis from those of individuals one hopes to emulate. Becoming an expert in many a fi eld requires time, effort and experience. Orthodontics is a complicated discipline that is diffi cult to deliver optimally and effi ciently. Treatment planning should be performed in person not only to appreciate the challenges the patient presents with but also to develop a lasting patient rapport. Equally important, patients need to be diligent during treatment and forever more for purposes of retention. Is it possible that a one- or two-day course with a treatment plan lasting half a year or less can provide equal op-timal results to a specialist orthodontist utilising traditional means?

In any case, placing a time limit on any treatment could be considered contentious. Patients ask me all the time “How long is this treatment going to take?”. I always reply “I’ll tell you when it’s finished.” As such I am rarely wrong.

Advertising cosmetic treatments the fair dinkum way

The Australian health minis-try—recently examined the pro-vision of cosmetic procedures and in particular the modes of pro- moting the treatments. The work ing group found that advertising and promotion more often than not focused on the benefi ts to the consumer, downplaying or not al-ways mentioning risks. The group went on to identify advertising practices that were not driven by medical need and where there was significant opportun-ity for fi nancial gain by those promoting these. They identifi ed the need to

DT launches new international ortho mag

By DTI

HONOR KONG. The orthodontic segment has grown signifi cantly within the past 20 years owing to new technologies and products, as well as an increase in adult patients requesting orthodontic treatment. In response to this trend and to update dentists on the most signifi cant develop-ments in the fi eld, Dental Tribune International (DTI) has added ortho—international magazine of orthodontics to its portfolio. The 2016 issue includes articles on clear aligners, vibration therapy and rapid maxillary expansion, as well as the latest product infor-mation and event previews.

The new high-gloss English-language magazine adopts an interdisciplinary approach involv-ing orthodontics, oral surgery, periodontics and restorative den-tistry, and aims to serve as an educational tool, providing comprehensive knowledge and information on the newest tech-nology that can profi table benefi cially be inte-grated into treatment concepts. The publication, which will be dis tributed at all major international orthodontic congresses and ex-hibitions, presents the latest re-search and case studies, as well as trends in procedures and tech-niques.

In order to connect with ortho-dontic specialists, the DTI team is scheduled to attend a number of orthodontic events around the globe in 2016, including the 24th Congress of the European Ortho-dontic Society, which will take place between 11 and 16 June in Stockholm in Sweden, and the fourth Scientifi c Congress for Aligner Orthodontics, to be held on 18 and 19 November in Cologne in Germany. DTI will be providing comprehensive live coverage of these and other events on its website. In addition, e-newsletters about the respective events will be sent to orthodontists worldwide.

From 2017, a new issue of the ortho magazine will be published twice a year with a print run of 4,000 copies. An e-paper edition of the magazine is available free of charge via the DTI online print archive.
Ortho Tribune Asia Pacific Edition | 7+8/2016

**ORTHO NEWS**

### Relapse of confidence

In a recent publication from an indemnity provider, orthodontics was identified as an emerging area for claims against their clients. This is likely to be the tip of the iceberg, whose size will probably continually grow as more and more orthodontics is provided and the repercussions of which may only become apparent gradually in the future.

In the now highly litigious arena of UK dentistry, the failure of orthodontic treatment against the backdrop of Montgomery v. Lanarkshire Health Board is likely to result in increased litigation. The movement of teeth into what the patient and the dentist feel is the correct position may be possible in the short term, but in the long term complications may arise owing to a variety of soft- and hard-tissue factors that cannot accommodate this new and supposedly "right" position. Indeed, orthodontics requires the appreciation of detail where symmetry and alignment are "king", but long-term stability is the likely "empress". Relapse of position is a common complaint and where patients have paid handsomely for a result they may have been happy with at the time of the cheque clearing, over time tiny tooth shuffles can result in disproportionate and vehement dissatisfaction. Where teeth are moved indiscriminately, recession in the labial segment is a complication difficult to explain and remedy in the high lip line of a conscientious and ambitious corporate female patient. Indeed, more haste, less speed may result in increased litigation.

### Clear steps to business building

A cornerstone of a successful business is the repeat customer who values the dentist and his or her service and returns with no qualms or misgivings about what the dentist feels should be provided. A successful business relies on patients returning in the long term owing to their positive experiences. Focusing on short-term gains without due consideration of quality or reliability of the treatment provided has potential repercussions for patients, the business of dentistry and perception of the profession.

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- From straightforward industry report
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**International magazine of orthodontics**

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Regulate promotion and advertising ethically with factual, easily understood information from a source that is independent of practitioners and promoters. This is unfortunately not always readily available. In some Australian jurisdictions, there are specific guidelines that need to be adhered to for promotion of cosmetic treatments and they specifically cover before and after treatment adverts, which we know in the UK is a popular practice among the cosmetically driven. This is commonly one ideal, perfect case showcased on the front end of the practice website with no mention of any problems, either acute or chronic. Another aspect of the report detailed prohibition of time-limited offers or inducing potential customers through free consultations for the purposes of treatment uptake. The latter is something that has seen STO promoted by way of voucher deals on the Internet or via smartphone applications. Others may consider such a practice as loss leading; one could ask who is losing and who is gaining and at what price?

One important aspect of the report identified the wider social impact of cosmetic procedures in that people may become increasingly dissatisfied with themselves and their appearance, culminating in deeper concerns for the person and reducing scope for individuality. Many dentists throughout the country may have a slipped contact here, a rotation there or a space distal to a canine who are unlikely to be waiting in earnest for the next voucher deal alert on their iPones. Inducing misgivings or raising concerns about the patient’s tooth position where the teeth are otherwise healthy and the patient presents with no concerns could be considered unethical and worryingly dishonourable.

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Individuals play the game, but teams win championships

What it takes to build the ultimate practice unit

By Lina Craven, UK

It is said that all teams are groups, but not all groups are teams. What separates the two is interdependence. A true team is focused on a common purpose; team members support one another and enhance each other’s work and contribution. Andrew Carnegie captured this accurately when he said, “Teamwork is the ability to work together toward a common vision. It is the fuel that allows common people to attain uncommon results.”

I know that achieving the ultimate team is possible, because when I was a dental nurse many years ago in America, I was part of an ultimate team. What made us great was our leader, Dr. Derrick Tagawa. He and his partner had a very clear vision and they knew exactly what was needed from each one of us to ensure the practice achieved its desired results. In turn, each one of us knew that every challenge we faced was an opportunity for personal, professional and practice growth.

Practices with a motivated, focused and empowered team produce excellent results; consequently, patient satisfaction is high and practitioners realise increased financial rewards. Achieving such a team is not pie in the sky but it does require complete commitment from the whole team. Based on my own experience of being a part of a highly performing team and my observations as a consultant to practices, here are my key principles for the creation of an ultimate team.

Do not confuse being the boss with being a leader. Leaders set the tone for the practice. They help by positive example. Successful teamwork starts at the top with leaders who provide strategic vision and establish team goals. Effective leaders clearly define their vision and share it with their team to establish a common purpose.

Any successful relationship can only survive if values are shared, believed and agreed upon; values like honesty, respect, integrity, commitment to each other, commitment to the practice success. Shared values help to build an effective team and to establish its culture, conduct, rules and policies. The key is to ensure the entire team agrees on the same values and is prepared to work by them. According to the world’s finest flight demonstration team (the Blue Angels, US Navy), “without shared values, peak performance isn’t possible”, and “a team’s values must align with its purpose, mission, and actions”.

Every team member, from the leader to the cleaner, must learn to communicate clearly and effectively. Successful relationships are built on positive, honest and open feedback. Is information shared openly and honestly in your team? Does gossip or negative chatter exist in your practice? Team members must learn to address concerns, deal with conflict and accept responsibility for the success of other team members. When conflict occurs, it must be dealt with honestly, directly and openly as soon as possible and in line with the team’s adopted values. Foster positive attitudes and creative thinking — attitudes can either make or break the team dynamics, so there is no place for negative people.

Do all your team members have clear and up-to-date job descriptions? Are they all qualified to undertake their roles? Are there written procedures for every area of the practice? Often, team members say they are not sure who is responsible for something, or they do not have a job description, or they were promised training when they started, but have not yet received any owing to the practice being too busy.

Successful leaders embrace the power of teamwork by tapping into the innate strengths each person brings to the table.”

Blue Angels, US Navy

“Successful leaders embrace the power of teamwork by tapping into the innate strengths each person brings to the table.”

Blue Angels, US Navy

“Successful leaders embrace the power of teamwork by tapping into the innate strengths each person brings to the table.”

Blue Angels, US Navy

Consistency is critical to creating the ultimate team, it fosters credibility and trust. Ken Blanchard and Sheldon Bowles wrote in their book Raving Fans, “customers allow themselves to be seduced into becoming raving fans only when they know they can count on you time and time again.” This is also true for teams — just replace the word “customers” with “team members.” I often hear people say things like “one day we’re instructed to some- thing and the next day it becomes something else.” If you want to be part of the ultimate team, be consistent.

It is said that what motivates individuals the most is recognition — a pat on the back or a word of praise here and there can be very well done. Embrace this principle and, although it may feel awkward at first, if it is done often enough it becomes a habit. Sam Walton, founder of Walmart stores, said: “Appreciate everything your associates do for the business. Nothing else can quite substitute for a few well-chosen, well-timed,

sincere words of praise. They’re absolutely free and worth a fortune.”

Building the ultimate team does represent a challenge, but once achieved it is hugely rewarding. There is no point implement- ing one principle in isolation. It is like baking a cake without the eggs.
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Conservative smile design for the general dentist

By Dr Rami Chayah, Lebanon

Abstract

This article discusses the advantages of short-term anterior tooth alignment using the Inman Aligner system, particularly for general dentists. The article will give a brief description of the Inman Aligner appliance and its use in short-term orthodontics, and it will answer three major questions the general dentist should ask himself or herself during the treatment planning process. In support of this treatment modality, three case scenarios general dentists see daily will be given as examples.

Introduction

General dentists face the daily challenge of performing instant veneers for patients with misaligned anterior teeth who refuse orthodontic treatment, many of whom regard fixed orthodontic treatment as too long a commitment for achieving their desired aesthetic results. In today’s fast-paced life, some patients are not prepared to wait or to go through long treatments. One of the greatest benefits of short-term anterior alignment is that many people who would refuse comprehensive orthodontic treatment may accept short-term removable alignment techniques such as the Inman Aligner system.

The Inman Aligner is a simple removable appliance; a modification of the removable spring retainer. It uses super-elastic coil springs to apply highly efficient light and consistent forces on both the labial and lingual surfaces of the anterior teeth (Figs. 1 & 2). The appliance is fabricated on a cast on which, based on a surgical model, the anterior teeth needing correction have been removed and reset in the ideal position in wax on the working cast. When the patient wears the appliance, the built-in forces generated by the spring coils will correct the malaligned anterior teeth (Fig. 3).

What distinguishes the Inman Aligner appliance from other short-term orthodontic systems such as Invisalign (Align Technology) and Six Month Smiles is its low cost, low risk, and short learning curve for general practitioners. Only one appliance is used from the start to the end of the treatment. Sometimes, several clear aligners may be used to rotate resistant canines. The system is well received by patients because it is fast and relatively cheap. It also accommodates today’s active lifestyle. Usually, most cases take from six to 16 weeks. Patients can take the appliance out during meals or work meetings.

As with any other treatment technique, the Inman Aligner has its limitations. Hence, case selection is imperative, as the Inman Aligner is not suitable for posterior orthodontic treatment or Class II or III treatment. Only certain types of movements are possible and some patients will still need conventional orthodontic treatment or indirect restorations. Certain criteria should be met before treatment proceeds. At consultation, other orthodontic alternatives should be offered. The dentist must quote for the long-term retention maintenance and should look for any skeletal discrepancies. Compromises must be signed off.

Treatment concept and case presentation

Dentists need to consider three questions about treatment during the treatment planning process. The first question: can the patient’s teeth be...

Fig. 1: Inman Aligner appliance. — Fig. 2: Illustration of the Inman Aligner showing the appliance components. — Fig. 3: Inman Aligner appliance in the mouth. Case 1 — Fig. 4: Frontal view with the teeth in occlusion before treatment. — Fig. 5: Frontal view with slightly open bite showing the status of the teeth before treatment. — Fig. 6: Frontal view with the teeth in occlusion after alignment and bleaching. — Fig. 7: Close-up frontal view of the maxillary teeth after AAB. — Fig. 8: Right side view of the maxillary teeth before AAB. — Fig. 9: Right side view of the maxillary teeth after AAB. — Fig. 10: Left side view of the maxillary teeth before AAB. — Fig. 11: Left side view of the maxillary teeth after alignment and bleaching. — Fig. 12: Full face before treatment. — Fig. 13: Full face after treatment. — Fig. 14: Frontal view showing the patient’s natural smile before treatment. — Fig. 15: Frontal view showing the patient’s natural smile after treatment. — Fig. 16: Full face showing the patient’s natural smile before treatment. — Fig. 17: Full face showing the patient’s natural smile after treatment. — Fig. 18: Occlusal view showing the maxillary arch before treatment. — Fig. 19: Occlusal view showing the maxillary arch after treatment.
fixed without orthodontic treatment in a very short period. In order for the general practitioner to answer this question, he or she should first establish whether the patient does not wish to pursue orthodontic treatment because of the time commitment and cost. Would he or she also refuse short-term anterior tooth alignment? Would the occlusion be improved even though a Class I molar or Class I canine relationship may not be achieved? Patients may prefer short-term alignment techniques because of the shorter treatment time and the lower cost.

Case 1

The first case presented is a good example of a scenario relevant to the question above. The patient was a young woman at college who presented at my office requesting a full smile makeover of 20 veneers; she desired a “Hollywood smile” as expressed in her own words. Her complaint was the retracted maxillary right and left central incisors, the incisal edge wear on the maxillary central incisors and mandibular anterior teeth, the pointy shape of the maxillary and mandibular canines, and the yellow colour of her teeth overall (Figs. 1-5). It could be argued that it would be highly unethical to prepare the sound enamel, transforming her ten maxillary teeth into stumps, for the rest of her life, especially at this young age. After long discussion and explanation of the disadvantages of the shortcut route of preparing her teeth for ceramic veneers, this option was excluded. Several other options were available and discussed with her, but because she wanted a smile enhancement in a short period of time, conventional fixed orthodontic treatment was also excluded. After checking her bite, it was observed that there was insufficient interocclusal space to shift the maxillary central incisors forwards without opening the bite. However, the patient accepted use of the Inman Aligner system to a short treatment time and flexibility regarding being able to take the appliance off during the day while eating.

The treatment plan was to follow the ABB protocol, alignment, bleaching and bonding. This concept still constitutes a smile makeover but in a very conservative manner. Taking into consideration her age and her sound enamel tissue, this was agreed to be the most progressive means of carrying out her smile enhancement. First, her maxillary teeth were aligned using the Inman Aligner system with an expander for nine weeks. Two extra-clear aligners were used in the last two weeks of treatment to re-rotate the maxillary lateral incisor. Once the maxillary teeth had been aligned and adapted to without any extraction, the teeth were bleached with custom-fitted super-soft trays (Fig. 6). This was achieved by preparing the maxillary and mandibular incisal edge under using composite to a complete direct technique. The patient was very happy with the final result (Figs. 7-9).

Case 2

The second question to be considered regarding treatment: would some of the teeth be aggressively prepared or end up with root canal treatment if treated with restorative dentistry without alignment and would the overall outcome be better with alignment rather than without? This question addresses the ethical dilemma general dentists face every day. We often have cases with overlapping anterior incisors in our office.

The patient presented in this case was bothered by the look of his overlapping maxillary central incisors (Figs. 20 & 21). His mandibular teeth were also crowded, but for some reason, his concern was only with his maxillary teeth. He had started to hide his smile in front of his friends, feeling embarrassed to show his maxillary teeth. After the full orthodontic examination and discussion about all of the treatment options, including comprehensive orthodontic treatment, the patient chose the removable Inman Aligner system owing to its flexibility in that the wearer is able to remove the appliance for several hours a day and because of its short treatment time. The maxillary left central incisor would have been aggressively prepared had it been treated restoratively. By using a simple anterior alignment technique, the treatment took only eight weeks to straighten the teeth and a great deal of sound enamel tissue was preserved by conservatively resolving the unesthetic appearance of the maxillary teeth (Figs. 22 & 23). The treatment plan was to align the teeth first and then to reassess the restorative work needed (Fig. 26). The appliance was used for 11 weeks and only worn for 8 to 10 hours a day. During the last three weeks of alignment, the patient began to bleach his teeth. By week 12, the teeth were straight and the patient initially requested to veneer his smile, but after mocking up the design directly in his mouth, he was discouraged from pursuing this option owing to the amount of tissue that would be lost. The aggressive preparation of the incisal edges (Fig. 25) was carefully considered and the patient was committed to pursuing the restorative treatment to achieve a more aesthetic result (Figs. 26 & 27). This approach, he can demonstrate a more positive way of practicing dentistry, helping other dentists to view the dental domain in a different way. The patient came to terms with the aesthetic demands, pre-alignment is essential to produce minimally invasive veneers with minimal enamel loss. This clinical approach guarantees the strength of bonding to the enamel is much greater.

Conclusion

The goal of this article is to encourage general dentists to reflect on the importance of considering short-term tooth alignment alone or in conjunction with restorative dentistry when treating patients. Hopefully, these three questions and cases will prompt readers in thinking through the process of this treatment modality.

Disclosure: Dr Chayah is the trainer for Inman Aligner Training in the Middle East. He provides hands-on, full-day, certificate courses to general practitioners.

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