The Inman Aligner is a revolutionary appliance described as the "missing link" between cosmetic dentistry and orthodontics. It can move teeth in the anterior region quickly, safely and predictably using a single appliance. Whether it's a standalone treatment or prior to further cosmetic dentistry, patients and dentists love the speed of treatment. At last, conservative, no-compromise cosmetic dentistry has become a great option and is now available in the UAE.

The Inman Aligner will be launching the highly recommended hands-on course "The New Concept of Alignment, Bleaching and Bonding (ABB)". Taking place on November 10 between 9am – 6pm attendees will be able to get started right away. Certified providers can access free online support, revision courses, marketing materials, downloads and the 'Spacewise' crowding calculator.

By Inman Aligner

The 5th Dental Cosmetic International Conference joint event with 2nd Global Conference of the American Academy of Implant Dentistry on 08-09 November at the Jumeirah Beach Hotel in Dubai will host the newest product in aesthetic orthodontic treatment provided by Inman Aligner.

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Emirates Dental Society Attends Annual World Dental Congress On Dental Technology And Oral Health To Bring Back Key Learnings To The UAE

The Emirates Dental Society urges UAE residents to adopt a complete oral health regimen, of brushing, flossing, dental visits and even chewing sugar-free gum, and announce intention to host a mega dental congress in Dubai next year.

Dubai, UAE. According to recent research conducted by SEHA, (Abu Dhabi Health Services Company), 64% of school children in the Emirates show signs of tooth decay, largely due to poor dental hygiene. Furthermore, data shows tooth decay is a largely preventable condition to be the most prevalent chronic health condition in the UAE affecting more than 80 percent of the population. In an effort to combat these staggering statistics and further advance oral care in the UAE, a delegation from the Emirates Medical Associations Dental Society (EDS) headed by its President, Dr. Aisha Sultan Alsuwaidi, attended the 2013 Annual World Dental Congress (FDI) in Istanbul, Turkey on 28th-31st August.

According to Dr. Aisha Sultan and based on Emirates Dental Society surveys and data resources, “Four out of five people residing in UAE exhibit signs of tooth decay” commented Dr. Aisha Sultan. This is particularly alarming given the fact that tooth decay is largely preventable through good oral hygiene habits such as brushing at least twice daily, flossing, chewing sugar-free gum and regular visits to dentists.

Dr. Aisha Sultan continued, “Each year at FDI, we are able to bring back key advances to the Emirates that might help improve the oral health practices of our residents. For example, scientific evidence shows that something as simple as chewing sugar-free gum following meals has significant oral health benefits. It stimulates saliva, which washes away food debris, and ultimately leads to healthier teeth and gums. This is one simple and perhaps underutilized and underevaluated option that helps prevent tooth decay and begin to establish a good oral health care routine.”

In an effort to promote oral health awareness and good oral hygiene practices in the UAE, the EDS is collaborating with the Asia Pacific Dental Federation, the UAE Ministry of Health and the Emirates Medical Association to host an international dental event in Dubai next year. The Asia Pacific Dental Congress (APDC) will be held at the Dubai World Trade Center from the 17th to the 19th of June 2014. The congress is expected to attract more than 3,000 dental industry experts from approximately 45 countries. As such, APDC Dubai 2014 is set to become the largest dental industry event in the region.

Dr. Aisha Sultan, President of the Emirates Dental Society and Chairperson of APDC, commented, “Our aim is for the APDC to feature a broad scientific program that truly underlines pioneering research and technological developments which have the potential to change the landscape of oral healthcare and hygiene. The global dental community recognizes the positive impact of good oral hygiene on the general wellbeing of the society. The theme for APDC 2014 is Improving Quality of Life through better Dental Care. APDC will not only provide an opportunity to uplift the dental profession in the region, but will also showcase our commitment to improving the general health and the overall wellbeing of the natives and residents of the UAE and beyond.”

To learn more about APDC Dubai 2014, please visit http://apdcdentalcongress.org.
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The Dental Company
Snoring And Sleep Apnoea – A Role For The Dentist

By Dr. Danielle Stephenson

Sleep apnoea has been known, and reasonably well understood, by the medical profession for a considerable time. Indeed, there are accurate descriptions of sufferers in some of Charles Dickens’ work. However, the disease process was not understood during the Victorian period and it wasn’t until the 1980s that technology was developed to help treat the problem. The last decade in particular has seen far greater understanding of the disorder and the introduction of simple, cost-effective solutions that deliver real benefits for patients.

Sleep-related breathing disorders are caused by varying degrees of collapsibility of the pharyngeal airway and range from simple palatal snoring to obstructive sleep apnoea. Simple snoring (affecting up to 45% of the adult population) is itself a health hazard. It has been shown to lead to poor memory, inability to concentrate, excessive daytime sleepiness, inability to establish patency and normal ventilation. Snoring is present in nearly all OSA patients and is classically very loud and intermittent. The snoring may be accompanied by gasping and some patients may wake with the feeling they are choking or gagging. Most problematic of all for sufferers is excessive daytime sleepiness as a result of the hypoxia and poor quality sleep arising from the multiple arousals from sleep. Left untreated, OSA is also thought to place patients at increased risk of hypertension, coronary artery disease, heart failure, cerebrovascular disease and sudden death.

Dr. Ama Johal, Consultant and Senior Lecturer at Barts and the London Queen Mary’s School of Medicine and Dentistry and a leading expert in the field of sleep-related breathing disorders, said: “There is ever increasing awareness of sleep-related breathing disorders and the role mandibular advancement splints play in treating them. CPAP – continuous positive airway pressure – remains the gold standard treatment for severe cases of OSA. However, mandibular advancement splints, provided by a patient’s dentist, can offer a much simpler and more comfortable solution which can effectively treat many cases of mild and moderate OSA and eliminate snoring. There are a number of appliance designs on the market but not all have the same evidence base behind them.”

With an increasing awareness of the problem there has been an increase in demand for the provision of mandibular advancement splints to treat these conditions, the demand coming both directly from patients attending dental practices and also on referral from medical colleagues.

Nicolas Bell, Managing Director of training company CPD Dubai agrees. “We are aware of the increasing demand from dentists to be able to provide mandibular advancement splints to treat a range of sleep-related breathing disorders. These disorders can have a profound effect on sufferers, their partners and those around them and we think this can be both a professionally and commercially satisfying area for dentists to get involved with. We have invited Dr. Ama Johal to come and speak on the topic to increase understanding amongst dentists in the region and improve their ability to safely assess and treat patients using mandibular advancement splints.”

The treatment of snoring and sleep apnoea using mandibular advancement splints is a rapidly expanding market both in Europe and North America, but despite large numbers of sufferers in the region, there are relatively few dental practitioners in the Middle East who can provide effective appliances. Samer Sabbagh, Managing Director of Qualident Dental Laboratory, said: “We view mandibular advancement splints as a core product we need to be able to provide to practices across the UAE and beyond. We have been working with a UK company called S45 to undertake the required training to fabricate the Sleepwell appliance which is by far the most clinically proven and effective design. The Sleepwell is a soft, slim-line, two-piece appliance that unlike many similar appliances allows full lateral movement with the degree of advancement being fully adjustable. We are also looking to support local dentists with marketing and education materials for patients.”

Contact Information

Information on CPD Dubai, licence renewal requirements and upcoming courses can be found at: www.cpd-dubai.com

Snoring and Sleep Apnoea – A Role for the Dentist will take place on October 12th at The Address Hotel, Dubai Marina.

Please visit www.cpd-dubai.com for more information and to make your booking.
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Esthetic Long-Span Bridge Using BruxZir

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By Mark McMie, DMD

One of the challenges that we face in dentistry today is how to build a long-span bridge with maximum esthetics in mind. In the age of implants, we can usually shorten the span by adding in a few implants or eliminate the need for a bridge all together by using implants to replace those missing teeth.

However, when those problems where we don’t have the quality or quantity of bone that we need, a medical history that won’t allow implant surgery such as free bleeding, a high risk host such as a poorly controlled diabetic, smoker, etc. Often times a patient’s desire for the look of a natural smile will send the complex surgery of a sinus lift or bone graft to make an acceptable site for implants.

Patients should be given the options and risks associated with each approach and allowed to make an informed decision with the dentist’s guidance. For a missing tooth there could be five or more options presented to the patient as ways to restore the space.

A case history

In 1998, a 30-year-old female presented with an abnormally loose tooth #12. Upon radiographic and clinical examination, it was noticed the gingiva was little to no root left on teeth #10–13. Teeth #8 and #9 appeared normal as did tooth #14. Her gingival health was optimal and her medical history was unremarkable, and she was taking no medications at the time.

The patient recalled that when she was 14 years old she was hit in the face right above these teeth with a gold club during a friend’s backswing, which probably lead to the resorption of the roots of the teeth in question. All options and risks were explained to the patient.

The sinus floor was 3 to 4 mm from the crestal bone. Implants with a sinus lift to allow room for placement were discussed. The patient did not like the idea of surgery and the healing time that would be required for a permanent restoration.

A partial was discussed; however, the young patient did not want to have a partial and was worried her esthetic demands would not be met. More options for less permanent treatment were offered, but the patient did not desire them.

The patient chose to do a long-span bridge, double abutting on teeth #8 and #9 with pontics to replace teeth #10–13 and use tooth #14 as a distal abutment. This would meet the patient’s demands for esthetics and be a non-removable restoration. She would have the permanent restoration after an impression would it would take to undergo implant therapy.

Porcelain-fused-to-metal was used on the original bridge work done in 1998. The highest noble metal content available that could span a four-pontic length was used. The porcelain work was done with a layered porcelain technique to provide a life-like appearance.

In February 2011, the patient, who was now 52 years old, presented with a broken tooth. She was eating a peppermint, incised it with the distal of tooth #8 and fractured the porcelain in an incisal gingival direction. About 2 mm of porcelain came off toward the distal contact.

The metal substructure of the bridge was showing. The piece of porcelain was intact. She was on her way to a meeting she could not get out of and desired a temporary fix.

I tried the piece of porcelain in and found it to be adequate but not an exact match for #8. Some of the porcelain had chipped away and was lost. I rough-ened the surface of the bridge in her mouth in the area that needed the repair then placed K-enamel Gel by Kuraray to clean the area. I used Primer Porze from Kuraray on the metal substructure. On the porcelain, I placed Clearfil Ceramic Primer. Clearfil Majority flowable composite was placed on the metal and on the piece of chipped porcelain. I refit the porcelain and light cured. All of these materials to do the repair are readily available in the Clearfil Repair Multi-Purpose kit from Kuraray.

It makes life simple to have everything you need in one place. The patient was able to get on her way and made it on time to her meeting (Fig. 5). You can see the repair on the distal of #8.

Material selection

In the pre-op photo (Figs. 1, 3, 5) you can see there is the telltale sign of a metal allergy to the metal that is in the bridge. The dreaded “black gum” look. In addition, there is a difference in the thickness of the gingiva on teeth #8 and #9. The patient had already made the choice of a bridge, now we had to decide which material to use.

The patient reported that she has metal allergies to jewelry unless it is gold. So odds are high that any metal we use that is not 80 percent gold or more is going to cause a metal allergy and the dark gingiva. However, a metal that high in gold will bend on this long of a span, so we ruled out the metal that high in gold will bend on teeth #8 and make it on time to her meeting (Fig. 5). You can see the repair on the distal of #8.

BruxZir was the material of choice for this case. BruxZir is a solid zirconia material that is sold to laboratories in a pre-sintered disk. CAD/CAM technology is then used to design and mill the restoration.

BruxZir Zirconia exceeds the flexural strength of typical zirconia (up to 1,465 MPa versus 1,200+ MPa for typical zirconia). BruxZir exhibits three to six times the fracture toughness (also known as the KIC value) of typical zirconia.

To better understand this concept, consider that a piece of steel or lead has high fracture toughness, whereas glass or brittle materials have a low KIC value. This property gives it high impact resistance. It also has excellent resistance to thermal shock. This low thermal expansion means the restorations will remain very stable in the mouth.

BruxZir is available in all the Vita Classic shades. Due to the esthetic demands of the patient, a monolithic colored restoration would not be acceptable. By performing a “cut back” on the facial of the bridge, we could achieve the desired esthetics and have the necessary strength. The advantage of BruxZir zirconia over other zirconia frameworks with overlay porcelain is that the lingual and occlusal surfaces do not have the opportunity to be bond or chip.

The old bridge had metal lingual on #8 and #9 (Fig. 3) and a metal occlusal surface on tooth #14. This allowed minimal tooth reduction. Using BruxZir allows us to use the same minimal reduction, as low as 0.5 mm, thereby conserving tooth structure. In addition, BruxZir allows us to have the esthetics desired with no additional reduction (Figs. 3, 4).

If using a zirconia framework system that required full-contour porcelain, we would need to reduce tooth #14 substantially. This theoretical reduction would give a clinical height on the prep of around 1 mm. This would be an insignificant abutment for a bridge of this length. Minimal preparation of the tooth structure, especially on #4, makes BruxZir an ideal material.

Additional considerations were given to try to balance this smile. The patient wanted to change the anatomy of #7 and add a little more length. A resin was added to this case on tooth #7. IPS e.max lithium disilicate by F0ssolar Vivadent was chosen for the veneer material. IPS e.max lithium disilicate is an all-ceramic material that is available in a millable block or pressable ingot using the lost wax technique. IPS e.max CAD blocks have a flexural strength of 360 MPa versus 400 MPa for the IPS e.max press.

Blocks and ingots are available in various shades and levels of opacity to achieve a final shade match. A stump shade is recommended for IPS e.max due to the level of translucency. IPS e.max press was used for the veneer and is indicated for anterior crowns and bridges with one pontic as well as posterior single units. A gingival recontouring procedure to match gingival heights was performed on teeth #8 and #9 using radiopaque electrosurgery.

Lab portion

This case was sent to Oral Arts Dental Laboratories, a full-service lab located in Huntsville, Ala. I took a stick bite to establish the horizontal plane along with full upper and lower impressions and bite. Once the model work was completed, the models and dies required digital scanning. BruxZir is a CAD/CAM fabricated material and thus must be digitally designed by a technician using a digital scanner and design software. Once the final contours and design...
are complete, the file is “nested” or positioned on the zirconia disk (Figs. 10, 11) and milled to a full contour approximately 30 percent larger than the final restoration. Once the restoration is milled and removed from the disk, it is dipped in the appropri- ate coloring solution and sintered in an oven for 6.5 hours at 1,530 degrees Celsius where it shrinks to its final size. I requested that Oral Arts e-mail me the initial design for my approval before milling (Fig. 7). The case met my expectations on design and we proceeded with fabrication. On large- complex cases, I enjoy the option of approving digital case design via e-mail before case completion. After the bridge framework was sintered and checked for accuracy of fit and margins (Fig. 8), IPS e.max Ceram was stacked and baked onto the facial surfaces for enhanced esthetics. IPS e.max Ceram is a stackable ceramic powder within the IPS e.max system. The veneering ceramic is the key to highly esthetic results, both on li- thium disilicate and on zirconium oxide (Fig. 9). The veneer was then waisted to a cut- back shape with mamelons, invested, burned out using the lost wax tech- nique and pressed using IPS e.max Press lithium disilicate. Once the veneer was divided, it was layered using IPS e.max Ceram to further improve esthetics. Final delivery and cementation One of the challenges of cementing a case like this is the fact there are two dental materials side by side. Teeth #7 has an IPS e.max veneer and teeth #8 and 9 will be BruxZir with porcelain facials. IPS e.max is more translucent than the BruxZir, thus allowing more visibility of the cement and tooth that is prepped.

The cement chosen for the bridge was Panavia SA Cement, a self-adhesive resin. I choose a self-adhesive resin cement for the bridge because it has ease of use in that it can be light cu- red, but if the light doesn’t penetrate the zirconia completely it will auto cure. This gives strength but also keeps the cementing process simple; it also would work on a full crown made of IPS e.max.

The cement for the veneer was Clear- fill Esthetic Cement EX, a resin se- ment. Veneer preps do not have a re- tentionary and resistant form. The veneer needs to have the maximum strength that resin bonding can give. I can get light though the veneer to fully cure the cement so an auto-cure option is unnecessary. Clearfil Esthetic Ce- ment EX is one of the strongest bonds available and will work excellently on this veneer or a full crown made from IPS e.max.

Both restorations, the veneer and bridge, were tried in and contacts and occlusion checked. The colors were very close to exact between the two restorations. Clearfil Esthetic Ce- ment EX comes with try-in paste, so we used the try-in paste and found that Universal colored try-in paste on both the bridge and veneer made a perfect match. K-eschuster gel was used to clean both restorations, the abutments were cleaned using a prophyl cup and sim- ple flour pumice with no fluoride. Panavia SA Cement was placed in the bridge abutments and the bridge was placed on the teeth. There is no need for a silinating agent on Bru- xZir because Panavia SA Cement will bond to the zirconia. Then it was light cured in place and the excess cement cleaned off.

An advantage to this type of cement is that it gives the benefits of resin bonding, and if you can’t get the cu- ring light to the cement through the material it will auto-cure in five minu- tes on its own, thus giving the benefit of a resin cement but the ease of use of a glass ionomer. The veneer was treated with ceramic primer before resin bonding using Clearfil Esthetic cement in the Universal shade and light cured, then the excess cement was cleaned up.

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The bottom line
In 2011, many labs reported the number of metal-free restorations surpassed the number of porcelain fused-to-metal restorations for the first time. Most of these metal-free restorations are full-contour zirco- nia and lithium disilicate. Porcelain fused-to-metal restorations have reigned as the predominant tooth- colored, indirect restorations for 50 years, so they have a long, successful history. On the other hand, BruxZir has a much shorter history and most labs have only had it available for less than four years. The demand on the dentist to place aesthetic restorations that are strong and will last has lead to BruxZir’s large market share.

Learning new ways to employ this ma- terial is a must, and new innovative techniques can evolve to meet our patients’ demands.

References is available from the author.

Contact Information
Mark McOmie, DMD, attended the University of Utah. While attend- ing the university he worked as a lab technician for several years. He then furthered his education at the Uni- versity of Louisville School Of Den- tal Medicine, graduating and entering pri- vate practice in 1998. McOmie has presented research at the Kentucky Dental Association, International Association of Dental Research, and the American Association of Dental Research. He is a member of the Ten- nessee Valley Dental Study Group, Chattanooga Area Dental Society, Tennessee Dental Association, and the American Dental Association. McOmie also has hospital privileges at Memorial Hospital, where he rou- tinely presents lectures in dentistry. You may contact him at markmcomie@gmail.com.
The use of sugar-free gum provides a proven anti-caries benefit, but other oral health effects are less clearly elucidated. Oral health, particularly caries-reducing, benefits of sugar-free chewing gums have been well documented in many studies and reviews. In addition, chewing gum is increasingly being viewed as a delivery system for active agents that could potentially provide direct oral care benefits. Chewing sugar-free gum promotes a strong flow of stimulated saliva, which helps provide a number of dental benefits:

- the higher flow rate promotes more rapid oral clearance of sugars;
- the high pH and buffering capacity of the stimulated saliva help neutralise plaque pH after a sugar challenge;
- studies have shown enhanced remineralisation of early caries-like lesions and ultimately prospective clinical trials have shown reduced caries incidence in children chewing sugar-free gum.

Scientific evidence shows that chewing gum has a place as an additional mode of dental disease prevention to be used in conjunction with the more traditional preventive methods.

**Benefits of chewing sugar-free gum**

**Oral clearance and saliva stimulation, plaque pH neutralisation**

The major benefits of sugar-free chewing gum are mediated through oral physiology: stimulation of the salivary glands to produce a strong flow of saliva (a 10-12 fold increase over unstimulated saliva) is elicited by a combination of masticatory and gustatory stimuli. Although saliva flow rates are highest during the first five to seven minutes of chewing, when the sweeteners and flavour release is maximal, a two-fold increase in flow rate (over unstimulated flow) is maintained for as long as the gum continues to be chewed. One of the immediate short-term effects of this enhanced saliva flow is the increased clearance of sugars and food debris from the oral cavity. The higher flow rate, pH and buffer capacity of stimulated saliva further help neutralise acids found in the mouth, and in particular help raise the plaque pH. The short-term neutralisation of plaque pH out of the demineralisation danger zone can also be supplemented by medium-term benefits, as it has been shown that frequent chewing increases baseline (unstimulated) saliva flow rate and increases the resting plaque pH and subsequent ability of the plaque to form acid from sugars. Some studies have suggested that chewing gum is better tolerated than artificial saliva for symptomatic relief of xerostomia.

Remineralisation and clinical caries reductions

In addition to the pH neutralising effect, the increased rate of delivery of soluble calcium and phosphate ions from the stimulated saliva helps to remineralise surface enamel lesions, as shown in a number of in situ remineralisation studies. Clinical studies conducted in children who chewed gum at least three times daily for two or three years show that they have significantly lower rates of decay than children who do not chew gum. Furthermore, those caries-reducing effects have been confirmed by systematic reviews. Indeed, the American Dental Association has recently provided clinical guidelines for the use of sucrose-free polyol chewing gums in high caries-risk children and adults.

**Extrinsic stain reduction**

Chewing gum can reduce extrinsic tooth stain, either by removing existing stain or inhibiting its formation, whilst the addition of specific active agents (typically polyphosphates) may provide additional efficacy. However, it should be noted that these types of claims are cosmetic and do not directly affect oral health, and the magnitude of the effect is small compared to bleaching therapies. On the other hand, accelerated oral clearance of staining agents such as tea or coffee, by chewing gum stimulated saliva could conceivably reduce the formation of extrinsic stain over time and help prolong the benefits of a dental prophylaxis. Interestingly, chewing gum has been found to counteract the short-term sensitivity associated with professionally-applied bleaching treatments, although the mechanism of this effect is not clear.

**Effects on plaque and gingivitis**

There is evidence that regular use of chewing gum, in conjunction with normal oral hygiene procedures, provides a slight, but significant, reduction in plaque scores, although one other study did not show this effect. In addition, two of these stud-
ies showed effects on inflammatory parameters, such as bleeding score or gingival index.\textsuperscript{13} A recent systematic review concluded that chewing sugar-free gum provides a small but significant reduction in plaque scores when used as an adjunct to normal plaque control measures.\textsuperscript{14} Therefore, any claims regarding effects of sugar-free gums without active ingredients should be interpreted only as a potential adjunctive effect, not intended to substitute chewing gum as an alternative to regular brushing and flossing.

Active agents for remineralization/caries prevention: There have been many attempts to improve the inherent remineralizing effect of chewing gum-stimulated saliva by changing the delivery of specific active ingredients. See an overview of some of these actives below.

Specific polyol effects
Sugar-free gums are usually sweetened with polyol (sugar alcohol) sweeteners, such as sorbitol, mannitol, xylitol, or maltitol. These polyols have all been certified as safe for use by appropriate plaque pH testing; thus, while their inherent sweetness helps stimulate saliva, their role as additional calcium and phosphate levels of saliva, raising the level of saturation of the immediate tooth environment with respect to these ions to aid remineralization.\textsuperscript{15} Calcium lactate added to chewing gum has also been shown to provide an enhanced remineralization benefit.\textsuperscript{16,17}

Calcium and Phosphate salts Other approaches to improving the inherent anti-caries effect of sugar-free gums have focused on the use of suitable calcium or calcium phosphate levels to supplement the natural calcium and phosphate levels of saliva, raising the level of saturation of the immediate tooth environment with respect to these ions to aid remineralization.\textsuperscript{18} Calcium lactate added to chewing gum has also been provided to enhance the remineralization benefits.\textsuperscript{18,19}

Potential negative effects of chewing gum
It is worth acknowledging that there are some concerns over chewing gum use, including its potential to be a choking hazard in young children, to be subject to littering, and exert a laxative effect. Consumers should be reminded not to give gum to children younger than school age and to dispose of chewed gum responsibly. The laxative threshold of most polyol sweeteners used in gum is typically more than 15 g/day, which would require consumption of 10 or more sticks of chewing gum per day to achieve.

Conclusion
The scientific evidence supporting the non-specific benefits of chewing sugar-free gum has been reviewed and endorsed by key dental organizations across the globe including FDI (World Dental Federation), the ADA (American Dental Association) and the EFSA (European Food Safety Authority). Traditionally, preventive dentistry has focused on sugar restriction, plaque removal and fluoride, fluoride sealant, fissure sealants and education. More recently, these approaches have been modified by improved diagnostic methods to allow early identification of disease, together with an accurate assessment of disease activity. There is an opportunity for offering chewing gum to be considered as another preventive modality to provide an additional layer of prevention by helping maintain the oral ecology in high and lower risk individuals and populations. Whilst it is not the intention of this article to provide clinical guidelines for the use of sugar-free chewing gum, the aim is to inform practitioners so they can accurately answer his or her patients’ questions regarding this topic and be able to provide appropriate guidance about chewing sugar-free gum and its oral health benefits when used as a supplement to usual oral care regimens. While chewing gum may not be a treatment for oral diseases, by helping generate a healthy flow of saliva, it may help offset the perturbations in the oral ecology that lead to clinical disease states.

References
Applying CBCT To Endodontics Can Reveal Deficiencies That Otherwise Might Go Undiagnosed

By Ernesto Jaconelli

When on site CBCT technology systems first became affordable the early adopters were Implantologists. The significant improvement that a 3D view brought to the accuracy and success of implant preparation was immediately apparent encouraging investment in the new technology. However a CBCT, 3D scan can bring the same benefits to other dental procedures and in particular to Endodontics.

Dr. Alan Holland is the founder of the highly successful Bristol Specialist Dental Clinic which incorporates Bristol Endodontic Clinic and Bristol Oral Surgery Clinic. He is the principal Endodontist and has developed his Clinic to offer state of the art excellence. For the past twenty years the Endodontic Clinic has offered solutions to complex endodontic problems.

Alan became one of the early Endodontist Adopters of CBCT when he decided to invest in his own CS 9000 3D System (was originally Kodak now Carestream Dental) in January 2012. An important consideration when choosing the CS 9000 3D was its ability to produce high definition 76 micron images focused on a 3.5 x 5 mm quadrant view with no distortion in length and angulation. This ensures truly accurate images with no magnifications or distortion. The effective patient dose is similar to a conventional panoramic scan and so justifies its use for a wider range of cases.

Alan explains, “The in-house 3D imaging service attracts those patients for whom diagnosis of complex endodontic failures and atypical anatomical anomalies is rendered transparent using the new technology. With the introduction of 3D scanning, Endodontists now have the ability to critique their work in much greater detail. Often a shocking realisation is that what appears to be an excellent result in a 2D parallel radiograph, when viewed in a 3D format reveals an aspect of anatomy which highlights deficiencies that would otherwise go undiagnosed when retracing failed endodontic cases or diagnosing complex Oral Surgery problems”.

This is best illustrated by the following case: A referred case of an upper first molar previously root treated some 2 years earlier showed a well adapted root filling with perhaps a slight indication of an area which may have healed or still be in the process of resolving. Intermittent mild symptoms had prompted the patient to return having had no sensation since root fillings completed within our clinic. As a precaution a 3D scan was taken which shockingly revealed the extensive unresolved apical infection. The cosy appearance of a 2D radiograph disguising extensive lesions is perhaps a much more common occurrence and the dedicated Endodontic journals are now littered with articles on the nature of complex endodontic lesions, resorption and anomalies which quickly establish that a procedure is either likely to succeed or fail before the patient is subjected to an expensive and perhaps fruitless procedure. (Three captioned clinical images supplied to support this case)

“3D CBCT allows us to offer better, more accurate diagnosis and enhances the patient’s perception and confidence in the knowledge that their endodontic needs are being met in a safe and thoroughly professional environment”.

When Alan originally invested in the CS 9000 3D System he fully expected it to be monopolized by the Oral Surgeon. It proved to be an important adjunct to many Oral Surgery procedures but surprisingly about 80% of the use has been dedicated to Endodontic Diagnosis. “The CS 9000 3D offers an unprecedented vision into the heart of the root canal anatomy which using the 3D rendering is a veritable revelation to patients to whom regular radiographs often remain a black and white mystery. With the rendered image we can easily explain what needs to be done and why. Complex surgical problems are easily understood and treatment plans more readily accepted”.

Alan chose Hulbert Dental as the supplier of his CS 9000 3D and this he believes was just as important a consideration as choosing the equipment itself. Training and support is essential when introducing any new technology to your clinic. This was very competently supplied by Tony Hulbert himself. But the relationship did not end there! Tony and Alan have formed a partnership supported by Carestream Dental to provided CBCT Application and Compliance training to all those who are now incorporating 3D imaging in their practice. The courses are essential for those dentists either considering investing in their own systems or referring patients to clinics such as Bristol Specialist Dental Clinic. These CPD courses contribute significantly to the education and knowledge sharing process aimed at delivering best practice within the profession.

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New Treatment Center, SINIUS TS, Offers Maximum Flexibility

By Sirona

Salzburg, Austria: starting in October, Sirona will be rolling out the OTP version of SINIUS, which was previewed at the IDS. Its mobile support arm system means that dentists can adjust the center ideally to their individual working positions, allowing practitioners to work ergonomically at all times.

The SINIUS TS treatment center from Sirona sets standards when it comes to flexibility and the technical support of the most ergonomic working position possible: With the OTP unit, the tray can be moved in all directions independently, thus allowing it to be flexibly positioned near the patient without having to readjust the dentist element. This solution not only offers practitioners unique freedom of movement – it is also easier than ever to work in an ergonomic position in every situation. “With SINIUS TS, we have once again expanded the central theme of efficiency and flexibility, features that all SINIUS centers have. The capabilities of the OTP system help dentists to position all elements of the center optimally and ergonomically,” says Susanne Schmidinger, Head of Product Management at Sirona.

Flexibility is also the keyword for the additional design of the dentist element and tray: The dentist element is particularly suitable for treatments in the 12 o’clock position and can be easily moved in any other position. The 420 mm vertical range of movement allows the dentist to optimally adjust the element for sitting and standing treatments. Thanks to the practical clip system, the tray can be easily removed and cleaned. In addition, the large placement area on the dentist element and tray provide more than enough space. SINIUS TS has particularly compact dimensions thanks to its functional and space-saving support arm system. The unit can also be easily positioned in smaller rooms.

Expanding the efficiency class
To date, SINIUS, Sirona’s efficiency class, has been available in the sliding track and swivel arm versions (SINIUS CS). Like its siblings, SINIUS TS is equipped with the intuitive EasyTouch touchscreen interface, which also allows the dentist to control the optional integrated endodontics function with a stored file library and ApexLocator. To save time while complying with hygiene regulations, sanitation adapters have been integrated into the SINIUS centers, which makes sanitation bowls superfluous. In addition to the three versions (sliding track, swivel arm, OTP), with SINIUS dentists can also choose between six application packages and many individual options, and can configure their center to their exact requirements.
It is without a doubt that Dental Technicians are a very important part of the dental team for the success of the dental treatment – from the small prosthetic cases to the complicated implantology clinical cases, almost in all fields of dentistry. The industry changes and advances with rapid speed innovation and new developments in dental technology. Working hard daily and spending long hours in the laboratories, how will the dental technician access, understand and apply these fast-moving state-of-the-art technologies?

The first Dental Technician Forum will take place at IDEM Singapore 2014 as an innovative extension to IDEM to include programs for the entire dental team. This two day dedicated scientific program will include groundbreaking lectures from the industry key opinion leaders, workshops and an extensive trade show focused entirely on the dental laboratory profession. The two informative and enjoyable days will see international speakers share and discuss cutting edge knowledge and innovations in the dental technician industry to the dental technicians from Asia Pacific, Europe and the Middle East. The event will provide twelve hours CPD over two pleasant days out of the laboratory filled with networking, knowledge and fun.

The Dental Technician Forum at IDEM Singapore will provide excellent networking opportunities, creating an environment for discussions, questions and the exchange of valuable feedback, while viewing the latest trends and developments, systems and technologies at the product display area.

Topics to be discussed:
- Everything from Smile Design to CAD CAM
- An Aesthetic Approach to Material
- Shade Selection
- CAD/CAM options for scanning, milling and 3D building of models and restorations
- Ceramic systems, materials and their applications today
- Implant Prosthodontics - Incorporating the latest implant products and techniques

Session and Speaker details will be released later. Dental Technicians who register for this forum are also entitled to attend the sessions in the IDEM Singapore Scientific Conference.

For more information contact Dr. Dobrina Mollova at: info@cappmea.com
1 COMPLETE SENSITIVITY TOOTHPASTE
SPECIALLY DESIGNED WITH
7 BENEFITS*

All-round care for dentine hypersensitivity patients*1-6

We are constantly evolving our specialist range to meet the differing needs of dentine hypersensitivity patients. That’s why we developed Sensodyne® Complete Protection.

References:

*With twice daily brushing
Dear friends and colleagues,

On behalf of the Board and the Scientific Committee of the Lebanese Dental Association (LDA) we would like to welcome you to the 2013 Beirut International Dental Meeting (BIDM).

These are stimulating times for the LDA as we continue to grow and adapt, always remaining open and responsive to new ideas. Our organization is confronting many challenges and we are meeting these challenges in a time of nation-wide and global change. The BIDM2013 is an exciting forum in which we continue to meet and bring together inspired professionals from all over the world and ensuring that the Lebanese Dental Association remains at the cutting edge.

We would like to take this opportunity to give you an idea of what you can expect and what we hope to achieve over these four days. The Scientific Committee has put together an unprecedented group of over 130 speakers, 45 of whom travelled from abroad especially for this conference, to deliver lectures and to lead workshops and problem-based panel discussions (PBLD). Presenters will share comprehensive cases on nearly every aspect of dental practice to Share Solutions.

We, at the LDA, are transforming the way we operate to continuously improve our ability to build relationships among academics, practitioners and the dental industry in a quest for better and safer patient care. Our organization and partners have continued to meet the challenges of our field and to excel despite the many challenges. We should all be very proud of where we are today and excited about where we are headed.

Finally, we would like to thank you for attending the BIDM2013 and bringing your expertise to our gathering. You have the vision, the knowledge and the experience to help us pave the way into the future. You are truly our greatest asset, and we could not accomplish what we do without your support. Throughout this congress, I urge you to stay engaged, keep us proactive and help us shape the future of the LDA.

Prof. Elie Azar Maalouf
President
Lebanese Dental Association

Dr. Nabih Nader
Chairperson
LDA Scientific Committee

Prof. Elie Azar Maalouf, President of the Lebanese Dental Association

Interview:
““We should All Be Very Proud Of Where We Are Today And Excited About Where We Are Heading.”

> Page 2

Scientific Programme

Nearly 100 speakers participate in the congress which will focus on treatment planning as a means of addressing the challenge commonly faced by dental clinicians – how to reach the goal between “a patient’s wish” and “the perfect result”.

Pre-congress courses and workshops will take place on Wednesday September 25th at the same venue. There will also be a wide range of other attractions including multiple parallel Oral sessions, live video transmissions, research sessions in Clinical and Basic Research, a poster presentation, and a series of pre-congress ‘step-by-step’

> Page 2-3

Exhibition

BIDM 2013 is opening its conference environment to welcome a range of industry exhibitors who will have direct access to all Middle East Congress participants, thanks to the integrated layout of the exhibition area a with the main conference hall and LDA Desk. With its best-in-class infrastructure and extensive facilities, the Congress Palace is an excellent choice for the event. It offers great conditions for loading and unloading of stand material and the event schedule includes plenty of time to assemble and take down booths.

> Page 4

Visit Our Booth:
A103

Lebanese University - Rafic Hariri Campus, Hadath

Previous LDA Event
By Mr. Rodny Abdallah
Dental Tribune Middle East

F

Founded in 1949, the Lebanese Dental Association (LDA) represents the dentists in Lebanon. A professional association devoted to the development of dentistry and the benefit of its members, the industry and wider community as a whole, it is acknowledged by government, public and private sectors both nationally and internationally. Every year, the LDA hosts the Beirut International Dental Meet- ing (BIDM), presenting a large scale of products and services available for the dental community in Lebanon.

President Professor Maalouf Biography

A Periodontist and Implantologist by profession and was the Head of the Periodontology Department at the Lebanese University School of Dentistry (2006-2011). Has a DDS from St. Joseph University (USJ) Beirut Lebanon 1985, CES A Anatomophysiologist Paris V Mont Royal 1986, CES B Periodontology Paris VII Garancières 1987 France, CES B Periodontology Paris VII Garancières 1987 France, Doctorate in Periodontology 2010 Lebanese University Beirut, Lecturer at the Lebanese University from 1988, Director of Post graduate program in Periodontology 2002-2005 and has accomplished more than 100 lectures in Periodontology and Implantology locally and Internationally.

“Sharing your knowledge is always a noble task.”

Comparing with your beginnings, how can you define the evolution of dentistry in Lebanon?

It is amazing to witness the huge transition of traditional dentistry into the digital era. I have had the chance to live the two worlds. Lebanon takes pride in sharing state of the art dental techniques and technology. Today radiography for example has changed the face of imaging by providing for colleagues and patients a clearer view of the dentition for a better disease diagnosis and treatment plans. We are now able to make an x-ray with a small sensor and show the patient the tooth on the computer in just a few seconds. Lebanese dentists were pioneers in adopting this new technology. Many other aspects have changed in dentistry; for example filling materials: Amalgam is no more the material of choice for many dentists with Composite replacing it by all means. I also would like to mention other dental gadgets that have caused a huge impact in our daily practice such as lasers, CAD CAM systems, digital photography, and computer assisted Implantology as well as more.

How important is the involvement of digital dentistry?

Digital dentistry has gone very far in our careers. The future of dentistry is here where we are now. Technology has made our lives as dentists easier. It has helped us to serve our patients in a better way and on a higher level. We have experienced that the digital equipment has saved us a lot of time and money. I will give you one example about the importance of the involvement of the digital dentistry. Today any dentist placing implants in his office should have access to Cone Beam imaging because it allows for accurate and precise treatment planning. With 3D, you place the implant in the software and virtually go all around it seeing every single angle and how close it is to neighbouring teeth and major structures such as the sinus or the mandible nerve. We could have never done that in the previous years before the digital technology entered our dental industry.

“Dentistry today is living a new age of metal free restorations.”

How important is the role of the dental Lab technician in the dental team?

In today's complex arenas of dentistry, a Lab technician has to have a broad understanding of anatomy, light, color and anatomy. They really need to upgrade their skills in order to be at the same level with their dentists. Continuing educational courses are as much important to dentists as to dental technicians. In Lebanon we have a high number of qualified dental technicians. Dentists working in teams need a skilled dental lab technician to join. His role is major in all aspects because he can achieve a good communication and knowledge. How big is the influence of the dental industry in Lebanon?

The dental industry plays a major role in Lebanon. It has grown fast in the recent years. Overall dentistry is experiencing steady and healthy growth. Dental companies are providing many services for general and cosmetic dentists. Demand for dental services is driven largely by population growth and awareness. Today most people recognize the advantage of preventive care. They also understand the importance of doing minimal invasive work when they decide to replace missing teeth. Implants are playing a major role in this regard. This matter is giving a huge boost to the dental companies to provide more innovative products and always invest in technology to find better solutions for the dentists and patients. Some of the dental companies in Lebanon are studying the market and they fill any gap whenever found. We have almost all major dental materials. Do you have any goals for the Lebanese Dental Association to achieve in the next three years?

One of our major targets is to transform the Lebanese Dental Association into a professional enterprise where LDA members would find several facilities from our new website that will allow them the advantage of having a private email, forum to exchange ideas and cases, communicate and also interact with each other on a professional level as well as providing them with a special page dedicated for different dental branches with multiple articles. Another target is to provide all Lebanese dentists the chance to upgrade their skills and gain additional knowledge by continuing education at our center in Sodeco and CAPP designates this activity for 20.25 continuing education credits.

Interview: “We should All Be Very Proud Of Where We Are Today And Excited About Where We Are Heading”
in all other provinces. We are working to fulfill a dental insurance and bank loan program for patients as well. One of our latest achievements is a custom exclusive partnership agreement with a dental online college in Germany from which all Lebanese dentists can benefit from a free access to visualize scientific online videos for the next two years. The "Delegates registered for the congress are eligible to receive ADA CERP continuing education."

As president of the Dental Arab Federation, can you brief us on its role and importance in the dental field? Dental Arab Federation was established to create a forum of support, education and cooperation. In our region, there are tens of thousands of highly skilled Arab dentists, physicians and other professionals, who could do much better through introducing each other.

Please identify your goals and ambitions for the next 2 years as part of your mandate as President of the Arab Dental Federation? This is another important issue, my vision is to create a Committee from the entire Arab world where we can exchange our experiences in the dental fields, organise series of continuing education with many levels from basic to advanced in all dental fields. Finally organise a congress where all Arab countries participate and this congress will give us an idea about the level of dentistry in the Arab world.

What is the main focus of BIDM? We do not tell you about this event ourself.

The BIDM2013 is an exciting forum in which we continue to meet and bring together inspired professionals from all over the world and ensure that the Lebanese Dental Association remains at the cutting edge. I would like to take this opportunity to give you an idea of what you can expect and what we hope to achieve over these four days. The Scientific Committee has put together an unprecedented group of over 130 speakers, 45 of whom travelled from abroad especially for this conference, to deliver lectures and to lead workshops and problem-based learning discussions (PBLD). Presenters will share comprehensive cases on nearly every aspect of the dental practice. For the first time this year, the delegates registered for the congress are eligible to receive ADA CERP continuing education points by attending accredited scientific sessions throughout the congress. This has been made possible through our partnership with the external Continual Medical Education provider Center for Advanced Professional Practices. Throughout this congress, I urge all dentists to stay engaged, remain proactive and help us shape the future of dentistry.

As we know the experience and knowledge in the dental field can help us understand the need of dentists and their requests and to improve their situation by finding solutions to their problems. I have always enjoyed my role as an academic. Sharing your knowledge is always a noble task, I have always been committed to help and assist people. We should all be very proud of where we are today and excited about where we are heading.

What are your recommendations to the dentists and fresh dental graduates?

 programs are offered in English and French speaking universities and are approached from Anglo-Saxon and European points of view. "BIDM2013 is an exciting forum."

How will your rich knowledge and experience help you handle the responsibilities as President of the Lebanese Dental Association?

As you know the experience and knowledge in the dental field can help us understand the need of dentists and their requests and to improve their situation by finding solutions to their problems. I have always enjoyed my role as an academic. Sharing your knowledge is always a noble task, I have always been committed to help and assist people. We should all be very proud of where we are today and excited about where we are heading.

What are your recommendations to the dentists and fresh dental graduates?

My modest experience permits me to say to all freshly graduated dentists that the diploma is just the beginning of your career. It is like a drop of water in a glass. only knowledge, experience and continuing educational conferences can improve our skills. My advice is that they should not be satisfied with just being a General Dentist. One must aim high, obtain additional knowledge and training, and go for a specialty in the dentistry.

Prof Medaout, it has been an honor to interview, is there anything else you would like to share with the readers?

I am thankful to Dental Tribune Middle East and I hope that we can collaborate more and more with CAPD and Dental Tribune Middle East in the future. I will be expecting your full support and cooperation to make our partnership as fruitful and successful as possible.
42ND CONFERENCE OF THE ARAB DENTAL FEDERATION
23RD BIDM • BEIRUT • LEBANON • 26-28 SEPTEMBER 2013

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SENSITIVE TO THE NEEDS OF YOUR DENTINE HYPERSENSITIVITY PATIENTS

Sensodyne® understands that dentine hypersensitivity patients have differing needs

Sensodyne® Complete Protection, powered by NovaMin®, offers all-round care with specially designed benefits to meet your patients’ different needs and preferences. With twice-daily brushing, Sensodyne Complete Protection:

- Clinically proven to provide dentine hypersensitivity relief1-3
- Contains fluoride to strengthen enamel
- Helps to maintain good gingival health4-6

Sensodyne® Complete Protection, powered by NovaMin® – an advanced approach to dentine hypersensitivity relief

NovaMin®, a calcium and phosphate delivery technology, initiates a cascade of events on contact with saliva which leads to formation of a hydroxyapatite-like restorative layer over exposed dentine and within dentine tubules.2, 9-13

In vitro studies have shown that the hydroxyapatite-like layer starts building from the first use4 and is up to 50% harder than dentine.3, 9-14

The hydroxyapatite-like layer binds firmly to collagen within exposed dentine10,15 and has shown in in vitro studies to be resistant to daily physical and chemical oral challenges,9,14-17 such as toothbrush abrasion16 and acidic food and drink.14-17

In vitro studies show that a hydroxyapatite-like layer forms over exposed dentine and within the dentine tubules:5, 8, 10, 13, 13

Adapted from Tai et al., 2006. In vitro cross-section SEM image of hydroxyapatite-like layer formed by supersaturated NovaMin® solution in artificial saliva after 5 days (no brushing):52

References:

Good brushing technique can be enhanced with the use of a specially designed dentifrice to help maintain good gingival health.4-6, 10

In clinical studies, NovaMin® containing dentifrices have shown up to 16.4% improvement in plaque control as well as significant reduction in gingival bleeding index, compared to control toothpastes. 4-6

Significant reduction in gingival bleeding index (GBI) over 6 weeks with a NovaMin® containing dentifrice

Adapted from Tai et al., 2006. Randomised, double-blind, controlled clinical study of 95 volunteers given NovaMin® containing dentifrice or placebo control (non-aqueous dentifrice containing no NovaMin®) for 6 weeks. All subjects received supragingival prophylaxis and polishing and were instructed in brushing technique.4-6 GBI scale ranges from 0–3.

Sensodyne® Complete Protection helps maintain good gingival health

In vitro studies have shown that a hydroxyapatite-like layer forms over exposed dentine and within the dentine tubules:7, 9-13

Mean GBI*

Baseline NovaMin® containing dentifrice

6 weeks Placebo control

58.8% reduction from baseline in 6 weeks with a NovaMin® containing dentifrice

...
3Shape Releases CAD Solution For Post And Core Restorations

By Bruce Frederic Mendel

3Shape, the provider of 3D scanners and CAD/CAM software solutions for the dental industry, announces the launch of its CAD solution for Post and Core restorations – which includes dedicated Post and Core intraoral scanning with 3Shape TRIOS® and unique CAD design workflows in Dental System™ 2013. 3Shape’s Post and Core solution utilizes special scanning capabilities, 3Shape Scan Posts™, and sophisticated software tools for reliable capture and optimally shaped and functional Post and Core designs. The solution saves time by allowing lab technicians to design all layers in a single digital workflow.

3Shape Scan Posts™ – for use in clinics and labs
3Shape has developed special Scan Posts™ to facilitate accurate capture of the Post and Core restorations’ positions and depths. Scan Posts™ are approved for both intraoral use in the lab and for model scanning in the lab. Scan Posts™ are autoclavable, and they come in various shapes and sizes to support drill systems from major suppliers. Patent Pending.

Flexible input – takes scans from TRIOS® and from dental lab scanners
3Shape’s Post and Core solution can be used with 3Shape TRIOS® digital impressions and 3D scans of gypsum models. Dentists with 3Shape TRIOS® can kick start Post and Core cases in the clinic by capturing and sending highly reliable input to the lab for direct designing. A special dual-scan workflow using 3Shape Scan Posts™ ensures accurate capture of true depths and positions of the root canal. If gypsum models are the input source, lab technicians simply insert Scan Posts™ in the model before scanning.

Sophisticated design tools
In the lab, technicians align the captured Scan Posts™ and let the software calculate positions and depths automatically. By first designing the anatomy layer and applying dedicated Post and Core modeling tools, technicians can create optimally shaped and functional Post and Core designs that are matched to the clinical case and ready for manufacturing through wax print & cast, milling, or laser sintering.

Frederic Rapp, Director of Crown Ceram dental laboratory in France says: “In combination with TRIOS®, 3Shape’s Post & Core design software gives us a fast and easy way to model optimally shaped and robust Post and Core restorations. The full digital workflow makes it very easy to design parallel post and cores, or work with cases involving multiple posts.”

All types of Post and Core cases
Labs can design Post and Core cases for standard crowns, single-piece retained crowns, and anatomical single-piece retained crowns that are cut back for veneering.

3Shape’s Post and Core design solution is fully functional in the released Dental System™ 2013 software, and with 3Shape TRIOS®. 3Shape Scan Posts™ are available for both dental clinics and labs through 3Shape distributors. Please contact your local 3Shape representative for details and purchase information.

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Madinat Jumeirah Resort
Dubai, UAE • May 7-9, 2014

REGISTRATION
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Tel #: +1 205-986-1235
Oral Management Of Oncology Patients Requiring Radiotherapy

By Professor Ibrahim NASSEH,
Dr. Saydeh SOKHN

I
ntroduction
Surgery, chemotherapy and radiotherapy are the options for treatment of head and neck cancer. Each modality is associated with a number of considerations related to treatment of the cancer and quality of life of the patient.

Radiation therapy plays an important role in the treatment of patients with head and neck cancer. Depending on the location of the malignancy (primary tumor, lymph node metastases), the salivary glands, oral mucosa, jaws have to be inevitably included in the radiation treatment portals. The complications must be considered thoroughly so that every effort is undertaken to minimize the oral morbidity for these patients before, during and after cancer treatment and throughout the patient's lifetime.

With over 1.4 million new cases of cancer diagnosed each year and a shift to outpatient management, dentists are more likely to see some of these patients in their practice; so they need to know about potential oral side effects. Preexisting or untreated oral disease can also complicate cancer effects. Preexisting or untreated oral disease can also complicate cancer effects. Preexisting or untreated oral disease can also complicate cancer effects. Preexisting or untreated oral disease can also complicate cancer effects. Preexisting or untreated oral disease can also complicate cancer effects.

To prevent or at least better manage cancer diagnosed each year and a shift to outpatient management, dentists are more likely to see some of these patients in their practice; so they need to know about potential oral side effects. Preexisting or untreated oral disease can also complicate cancer effects. Preexisting or untreated oral disease can also complicate cancer effects.

This paper offers the dental team an overview of the consequences associated with radiotherapy to facilitate collaboration with the patient's medical team.

1. The role of pre-treatment oral care
A thorough oral evaluation by a knowledgeable dentist before cancer treatment begins is important to the success of the regimen. Pretreatment oral care achieves the following:

- Decreases the cost of care.
- Provides an opportunity for patient education.
- Prevents or reduces later incidence of bone necrosis.
- Prevents or reduces later incidence of tooth decay.
- Prevents or reduces later incidence of periodontal disease.
- Prevents or reduces later incidence of oral infections.
- Prevents, eliminates, or reduces oral pain.
- Minimizes oral infections that could lead to potentially serious systemic infections.
- Prevents or minimizes complications that compromise nutrition.
- Provides an opportunity for patient education about oral hygiene during cancer therapy.
- Improves the quality of life.
- Decreases the cost of care.

With a pretreatment oral evaluation, the dental team can identify and treat problems such as infection, fractured teeth or restorations, or periodontal disease that could contribute to oral complications when cancer therapy begins. The evaluation also establishes baseline data for comparing the patient's status in subsequent examinations.

Open communication with the patient's oncologist is essential to ensure that each provider has the information necessary to deliver the best possible care.

1.1. Pretreatment oral evaluation
Ideally, a comprehensive oral evaluation should take place 1 month before cancer treatment starts to allow adequate time for recovery from any required invasive dental procedures. The pretreatment evaluation includes a thorough examination of hard and soft tissues, as well as appropriate radiographs (panoramic and CBCT) to detect possible sources of infection and pathology.

Also take the following steps before cancer treatment begins:

- Identify and treat existing infections, carious and other compromised teeth, and tissue injury or trauma.
- Preserve, eliminate, or reduce oral pain.
- Stabilize or eliminate potential sites of infection.
- Extract teeth in the radiation field that are nonrestorable or may pose a future problem to prevent later extraction-induced osteoradionecrosis.
- Conduct a prosthodontic evaluation if indicated. If a removable prosthesis is worn, make sure that it is clean and well adapted to the tissue. Instruct the patient not to wear the prosthesis during treatment, if possible, or at the least, not to wear it at night.
- Perform oral prophylaxis if indicated.
- Time oral surgery to allow at least 2 weeks for healing before radiation therapy begins. For patients receiving radiation treatment, this is the best time to consider surgical procedures.

Oral surgery should be performed at least 7 to 10 days before the patient receives myeloablative chemotherapy. Medical consultation is indicated before invasive procedures:

- Remove orthodontic bands and brackets if highly stomatotoxic chemotherapy is planned or if the appliance will be in the radiation field.
- Consider extracting highly mobile primary teeth in children and teeth that are expected to exfoliate during treatment.
- Prescribe an individualized oral hygiene regimen to minimize oral complications. Patients undergoing head and neck radiation therapy should be instructed on the use of supplemental fluoride.

Radiographic examination is essential in assessing the presence of abscesses, evaluation of periodontal status and determination of the existence of metastatic disease. Previous dental experience and exposure may also serve as a useful prognostic indicator.

1.2. Pre-radiotherapy extraction
The majority of patients who develop osteoradionecrosis (ORN) are those who were dentate at the time prior to the commencement of radiotherapy. Tooth removal accounts for the vast majority of trauma related ORN, so all teeth located within the primary beam of the radiation portal should be closely scrutinized. Early consultation with the radiation oncologists and therapists is essential.

A number of factors influence the clinician’s decision as to which teeth need to be removed prior to the commencement of radiotherapy. There is still much controversy surrounding the extraction criteria for radiotherapy patients, but the following need to be considered:

1.2.1. Non-dental factors
a. Radiation dose
If the radiation dose to the bone of the mandible and maxilla is less than 5000cGy, then according to the literature, there should be minimal risk of osteoradionecrosis after radiotherapy. The radiation oncologist must give this information to the dentist prior to the initiation of head and neck radiation.

b. Location of radiation portal
At some oral oncology clinics, recommendations for dental extractions prior to radiotherapy are limited to those areas of the mandible and maxilla that are going to receive greater than 5000cGy. If there are teeth outside the potential high dose field of radiation, that are symptomatic or have a hopeless prognosis, they should be extracted prior to radiation, if time permits.

c. Patient prognosis
If the prognosis of the patient is extremely poor or if the tumor is growing rapidly, the radiation oncologist may decide that radiation needs to proceed without delay. After extraction, 2-3 weeks healing time is recommended before head and neck radiation therapy begins.

d. Patient age
The younger the patient, the longer the teeth must be maintained disease free. If dental extractions are required (due to tooth decay or periodontal disease) in areas that will receive high dose radiation, the patient will be at significant risk for osteoradionecrosis. The risk of osteoradionecrosis in irradiated areas is present for the duration of the patient’s life. There is no “safe” time limit to wait for extractions or surgery.
in these areas. Therefore, the patient needs to be informed of the potential lifelong risk before radiation therapy is initiated, even if the teeth are very healthy.

a. Patient finances

If the patient cannot afford dental care that is required after radiation therapy, serious consideration needs to be given as to whether any teeth should remain in the proposed high dose field of radiation.

b. Patient compliance

If the patient has demonstrated lack of motivation in previous dental care and oral hygiene, or has a severe dental phobia, serious consideration needs to be given whether any teeth should remain in the proposed high dose field of radiation.

d. Root canals

Teeth in the proposed high dose field of radiation should be considered for pre-radiation therapy extraction if root canals are not considered contraindicated. Root canals should remain in the proposed high dose field of radiation.

e. Impactions

Impacted teeth, especially third molars, will lie in the proposed high dose field of radiation should be considered for extraction prior to radiation if there is pathology associated with the teeth or if the teeth have a communication with the oral cavity.

f. Large fillings, fractures, occlusal wear

Teeth with large fillings, fractures or occlusal wear should be considered for extraction prior to receiving high dose radiotherapy.

g. Large dose field

Teeth that are large in size should be considered for extraction prior to receiving high dose radiotherapy.

h. Unopposed teeth

Teeth that do not have contact with a tooth in the opposing arch should be considered for extraction prior to receiving high dose radiotherapy, if they are in the proposed high dose field of radiation.

2. Management during treatment

It is extremely important to keep the mouth clean and healthy during head and neck radiation, to help reduce the risk of oral infection. A professional dental cleaning prior to radiation is highly recommended. Further care may include using "superbrush tooth-brushes" that will not cause irritation, fluoride gel are needed for patients with interruptions of the lingual and superior cortices. No root resorption could be detected on any of the involved teeth.

3. Clinical Case 2

Post-radiation spontaneous mandibular fracture.

The patient complains of pain after extraction and curettage of the wound. The CBCT of the angle of the mandible shows an incomplete healing in the site of extraction, with ill-defined borders, discontinuity of the mandibular borders and bone sequestration (fig 4-6).

Conclusion

The clinical management of carcinomas of the head and neck region causes oral sequelae that can compromise patients’ quality of life and necessitate abandonment or reduction of optimal therapeutic regimens, which in turn reduces the odds of long-term survival. Such sequelae can be prevented or at least better managed if dental and medical health care providers work together. It is therefore essential that dentists have an understanding of cancer therapy and a sound working knowledge of the prevention and management options for the oral sequelae of cancer treatment. The careful, thorough consideration of the complications of radiotherapy and chemotherapy must be considered so measures can be undertaken in every phase of treatment to alleviate unendurable discomfort and suffering. It is the responsibility of the general dental practitioner to help the patient navigate the minefield of the potentially devastating legacies of cancer therapy. So your oral health needs to be as good as possible before the start of treatment to avoid problems later.43

References


Rest of references is available from the author.

Fig. 6: 3D representation

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End of Article

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Dubai School Of Dental Medicine Welcomes Second Batch Of Students

By Dubai School of Dental Medicine

Dubai School of Dental Medicine (DSDM), a home-grown specialist dental school located in Dubai Healthcare City (DHCC), has welcomed its second intake of postgraduates.

The batch of students includes 26 dentists, enrolled into the five accredited postgraduate MSc programmes, testament to the school’s established position as a recognised leader in dental education, research and clinical practice.

The three year Master of Science programmes on offer incorporate clinical training at the level of Specialist Trainee. The courses provide appropriate preparation for external specialist clinical examinations including the Membership Examination of the Royal College of Surgeons of Edinburgh, and therefore have a higher credit than that typically required for Master’s degree.

Welcoming the students at this week’s orientation, Marwan Abedin, CEO of DHCC, said, “DHCC is an internationally recognised centre of healthcare excellence and is committed to education and furthering its medical research offering through its specialised centres of excellence, including DSM. Our institutions represent global standards in healthcare education, and to the continual development of specialist healthcare in the UAE. DSM is home to some of the world’s top specialists in the field, and we are delighted to see the arrival of the second batch of students.’

The new academic term has also seen the school welcome Dr Khawla Hu- mood Belhoul as Director of Clinical Operations. Dr Belhoul will manage the clinical operations and patient care at the clinic to support the academic programmes.

Inauguration of the new students took place at the Mohammed Bin Rashid Academic Medical Center (MBR-AMC), DHCC’s dedicated complex housing a number of facilities which collectively promote their healthcare education and research mission.

Dr. Amer Sharif, Managing Director of Education at DHCC, said ‘I am delighted to be welcoming our second batch of postgraduate students. DHCC has prioritized education in 2013, and by offering a dental school of such esteemed academic excellence we are truly establishing a globally recognised medical education hub and supporting our ultimate ambition of building a specialised medical talent pool in the region.

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• Patients love the speed of treatment. Most cases are completed in 6-18 weeks.
• It is safe due to the gentle and consistent pressures exerted by the appliance.
• There are no reported cases of root resorption or de-vitalization.
• The comprehensive and affordable hands-on training course provides all the knowledge and skills required for dentists to start their first cases.

Why You Should Choose the Inman Aligner:
The Inman Aligner can be used to quickly align teeth before veneer preparations to de-radicalize preparations and avoid elective endodontics. It can be removed and inserted as easily as a retainer. There are no minimum annual case number requirements and it has an ongoing and reliable case mentoring via web forums. Additionally, there is access to active web forums to discuss cases with other Inman Aligner providers through the clever ‘Spacewize’ crowding calculation system. The system facilitates rapid chair-side Inman Aligner case assessment and occlusal planning.

Is It Safe?
Tried and tested The Inman Aligner has over 1500 successful cases which have been completed by the official trainers of the Inman Aligner Certification Course. With over 90,000 successful cases completed worldwide, The Inman Aligner has a 12-year proven track record with over 1500 US and 3000 EU dentists and orthodontists having used the product. The key of the system is the continuous low-peak orthodontic forces which have been proven to move teeth both quickly and safely. The patient will need to remove the appliance just for 4 hours a day, whilst eating and cleaning and has been proven to reduce the resorption risk. Lastly, there are no recorded cases of devitalization or root resorption meaning The Inman Aligner is fast and safe.