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INNOVATIVE PROTOCOLS FOR DIGITALISED CLEFT TREATMENT

To help practitioners adopt best practices and guide them in integrating digital technology with the available treatment.

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ALL BUTTONED UP! STYLING YOUR PLASTIC WITH ELASTICS

Clear aligners have become a popular method of orthodontic treatment in the new millennium, led by the launch of Invisalign.

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INTERNAL FIXATION SURGERY EFFECTIVE IN IMPROVING PATIENTS' QUALITY OF LIFE

Mandibular prognathism is a common facial deformity in southern China.

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Dr Irfan Qureshi: A Distinguished Ambassador of Pakistan on the Global Stage

TIU hosts sixth National Conference of Oral Sciences

DT Pakistan Report

The Tishk International University (TIU) organised the sixth National Conference of Oral Sciences (NCOS) on the subject 'Dentistry Beyond Boundaries', which was attended by international experts from all over the world who shared their knowledge and experiences in the field.

The experts included assistant professor Dr Irfan Qureshi (Pakistan), Chief Consultant and Owner at Dr Irfan Qureshi's Team of Professionals, Prof Dr Edward A McLaren (USA), a Prosthodontist and Master Dental Ceramist, who has retired from both UCLA and UAB School of Dentistry, and Prof Dr Ulrich Wegmann (Germany), Studies of chemistry and dentistry at the University of Bonn (1978 to 2014), lecturer at the Department of Dental Prosthetics, Preclinical Education and Materials Sciences, Prof Dr Atesh Parlar (Turkey), Periodontologist, Implantologist, Dr Rawand Mustafa, BDS, PhD, Oral and Maxillofacial Surgeon.

NCOS is periodically organized by the Faculty of Dentistry, Tishk International University, in order to make the knowledge and information on various aspects of dentistry accessible to everyone.



The conference gathers researchers, practitioners, dentists, educators, and scholars with interest in any field of dentistry from around the world.

The NCOS 2023 is designed to attract the research communities to promote connections between theory and practice and explore different

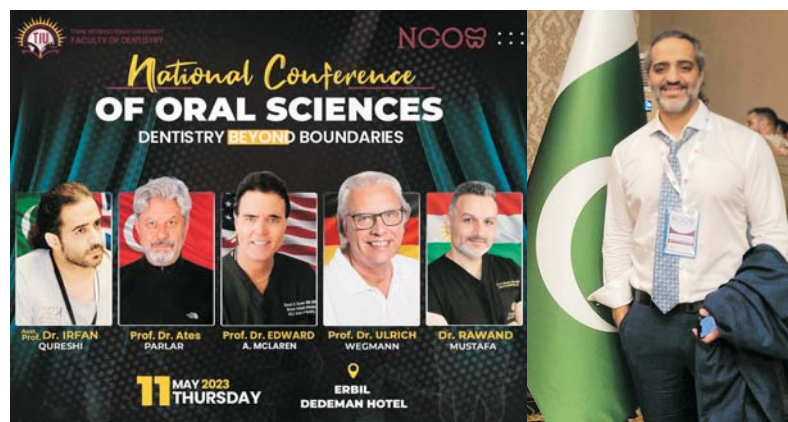
perspectives on the application of research findings into different dentistry fields.

Seminar

Tishk International University's International Relations and Diplomacy Department, Faculty of Administrative Sciences and Economics hosted Ms Rosy Cave, British Consul General, Erbil, who spoke at a seminar on 'UK's Foreign Policy, Diplomacy and Policy in Iraq'.

The varsity President assistant professor Dr Abdul Samad S Ahmad presented a welcome address, followed by the

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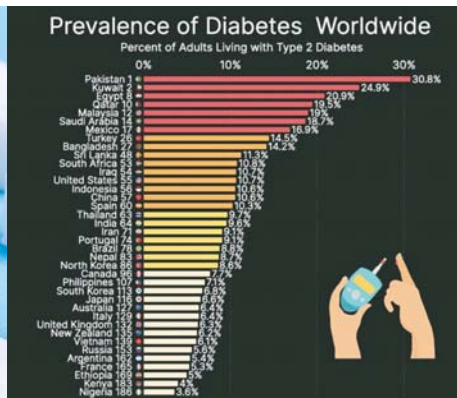
Pakistan has highest diabetes prevalence in world

DT Pakistan Report

KARACHI: A recent study has revealed that Pakistan has the highest number of diabetes patients in the world, closely followed by Kuwait and Egypt. Diabetes is a global health concern that is increasing in prevalence. There are two main types: type 1, which is typically diagnosed in childhood,

This study gathered data from 38 nations, and Pakistan topped the list, followed by Kuwait with a diabetes incidence of 24.9%, and Egypt with 20.9%.

Healthcare professionals from around the world have consistently emphasised the importance of regular exercise as a preventive measure against various diseases, including diabetes.



and type 2, which can be potentially dangerous if not managed properly.

The study conducted by World of Statistics, a group supported by the Georgia State University Department of Mathematics and Statistics, shows Pakistan has a diabetes prevalence rate of 30.8%, the highest in the world.

Engaging in physical activity can not only help in preventing diabetes, but also in controlling its progression.

The global medical community strongly advises individuals to adopt a regular exercise routine as it plays a crucial role in preventing and managing diseases such as diabetes.



Pakistani team attends AAO Chicago moot

KARACHI: A Pakistani delegation comprising esteemed dental professionals participated in the recently held American Association of Orthodontist (AAO) Conference in Chicago, USA.

The annual four-day global event show-cased the latest orthodontic scanners, aligners

and graphic technology, inviting renowned international speakers and holding hands-on workshops.

The Pakistani team attending the event comprised Prof Dr HR Sukhia, Principal Dental SSCMS, Dr Rashna H Sukhia, Assistant Professor and Programme-Director, Orthodontic Residency Programmes, Aga Khan University

Hospital Karachi, Dr Zahra Khalid, Assistant Professor at the Armed Forces Institute of Dentistry Rawalpindi, Dr Leelan Kanwal, AKU and Dr Aneel Bherwani, DDS.

The Pakistani delegation members were highly appreciated and warmly welcomed by the AAO organisers during the sessions. **-PR**

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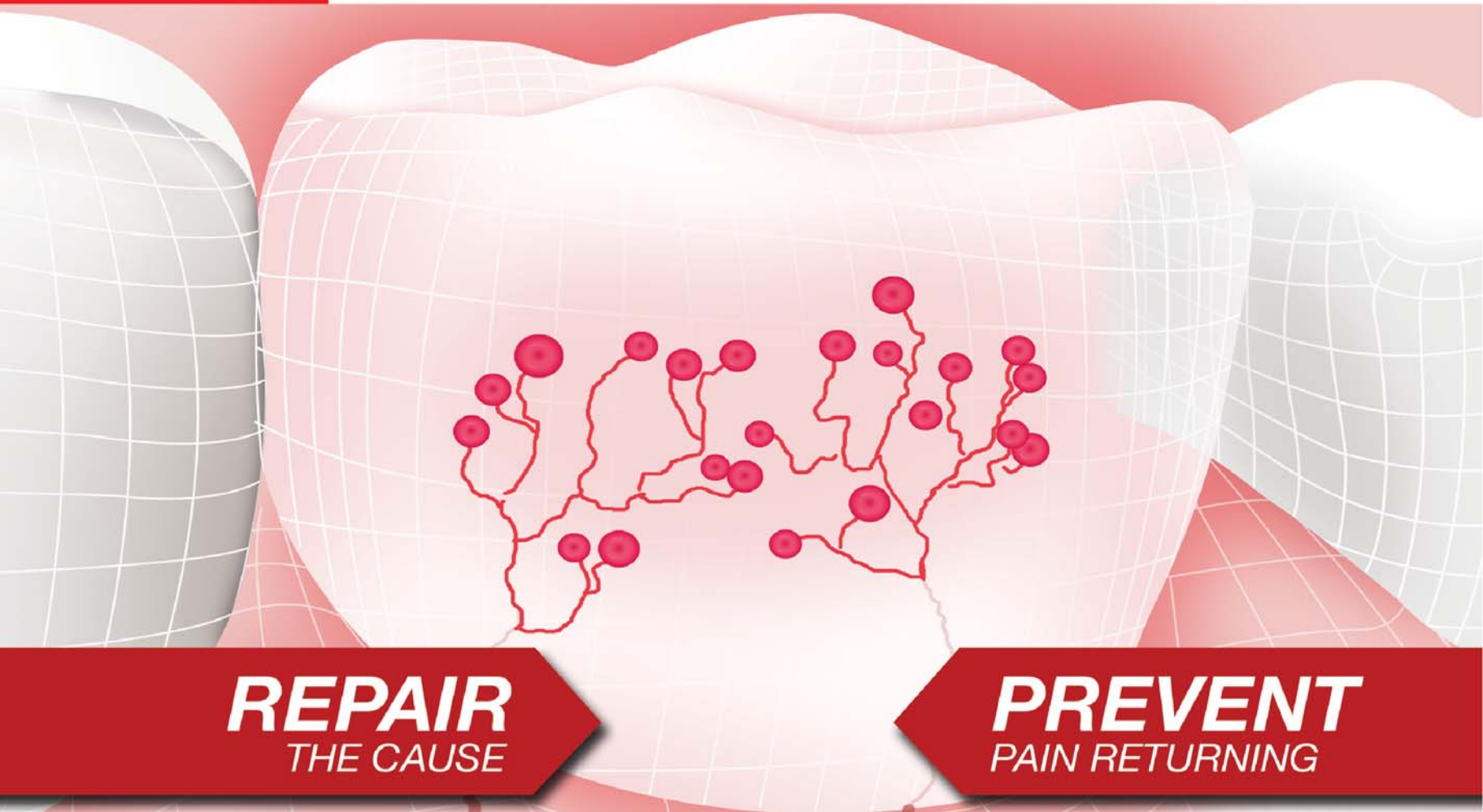
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A SIDE BY SIDE COMPARISON

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With continued use. Also helps soothe. ¥ In toothpastes with 2% potassium nitrate. For instant relief, apply directly to the sensitive tooth and gently massage for 1 minute. Reference: 1. Liu Y et al. J Clin Dent. 2011; 25(9): 10-13. 2. Namous S et al. J Clin Dent. 2009; 23(9): 10-13. 3. Namous S et al. J Clin Dent. 2009; 23(9): 10-13. 4. Namous S et al. J Clin Dent. 2009; 23(9): 10-13. 5. Namous S et al. J Clin Dent. 2009; 23(9): 10-13. 6. Namous S et al. J Clin Dent. 2009; 23(9): 10-13.



ITI Study Club launched in Karachi

KARACHI: The International Team for Implantology (ITI) Study Club recently launched its Karachi chapter, to promote the understanding and application of implant dentistry through education, research, and networking opportunities.

The local chapter of the professional association is led by directors Dr Ali Sadiq and Dr Fahad Umer.

The inaugural event held at Marriott was moderated by Dr Taimur Khalid and featured presentations by two implant dentistry experts, Dr Syed Murtaza Raza Kazmi and Dr Humayun Kaleem Siddiqui.

Dr Kazmi's presentation focused on the 'ALL ON 4' protocol, a treatment option for the patients who have lost multiple teeth or are edentulous.

Sharing some of the cases he handled, to illustrate the effectiveness of this protocol, Dr Kazmi provided insights into the surgical and prosthetic aspects of the procedure.

Dr Siddiqui's presentation, on the other hand, focused on medical emergencies and implants.

Discussing various types of emergencies that can occur during implant surgery, such as bleeding, he emphasised the importance of pre-treatment planning for the patients with comorbidities.

Dr Siddiqui provided insights into appropriate management of medical emergencies occurring during implant surgery and stressed the need for a well-

equipped emergency kit and trained staff.

The event was attended by a diverse group of dental professionals, including general practitioners, specialists and postgraduate residents, who had an opportunity to put queries, share their experiences, and network with their peers.

The club plans to organise three events annually, featuring renowned experts, besides hands-on workshops for its members.

The event was a great success, providing an excellent platform for dental professionals to expand their knowledge, connect with their peers, and stay updated on the latest trends and developments in implant dentistry. **-PR**

BUDC holds students presentation competition

KARACHI: Believing that academic competitions are the most effective way to promote learning and instilling confidence in the students as compared to conventional grading, the Bahria University Dental College's Department of Operative Dentistry held a presentation contest amongst the Third and Final years BDS students posted in the department as part of their rotational activity at Phantom Head Lab.

The event was organised under the patronage of the Head of Department of Operative Dentistry, Prof. Dr Shama Asghar.

Presentations of Third Year students were supervised by Dr Imtiazul Haq and Dr Umeed Javaid, while Final Year students were supervised by Dr Ayesha Zafar and Dr Syed Adeel Ahmed.

The topics of the presentations covered a wide range of Operative Dentistry and Endodontic concepts, including anterior restorations, cross infection control and sterilisation, restorative and endodontic instruments, restorative materials, restoration



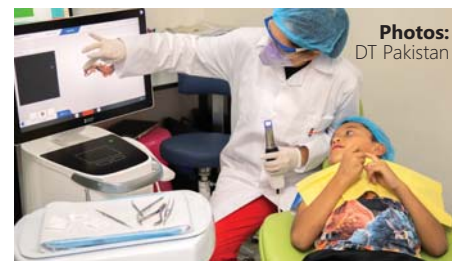
of compromised teeth, esthetic considerations in restorations etc.

Dr Maleeha (SR Paedodontics) and Dr Aneeqa (AP Paedodontics), who were judges of the competition, not only graded the students, but also gave their valuable insight and feedback to them on their skills and encouraged them.

The contest winners were awarded certificates and the event ended on a note of encouragement for all participants from Prof Dr Shama Asghar. **-PR**

Innovative protocols for digitalised cleft treatment

To help practitioners adopt best practices and guide them in integrating digital technology with the available



treatment, FDI World Dental Federation, Smile Train, and Dentsply Sirona have collaborated to develop the first-ever global standard protocols for digitalised cleft treatment. These protocols have been extensively researched and are expected to significantly improve the accuracy and efficacy of existing treatments by providing dental professionals with a comprehensive digital clinical approach across all stages of care.

The protocols cover presurgical orthopedics, mixed dentition, permanent dentition, and oral rehabilitation, with a remote monitoring and oral health component in each field.

Prof. Ihsane Ben Yahya, FDI President, says these protocols will bring health and opportunity to countless children worldwide and expressed his gratitude to everyone involved in this landmark achievement.

To make the mass of available information user-friendly, an interactive tool was created to display all information and help the dental professional navigate through all the different stages of care.

Susannah Schaefer, President and CEO of Smile Train, says the new protocols set the bar for the evolution of digital cleft care, leveraging technology that will ensure access to high-quality care for marginalised communities, and reduce the burden of care for the cleft community.

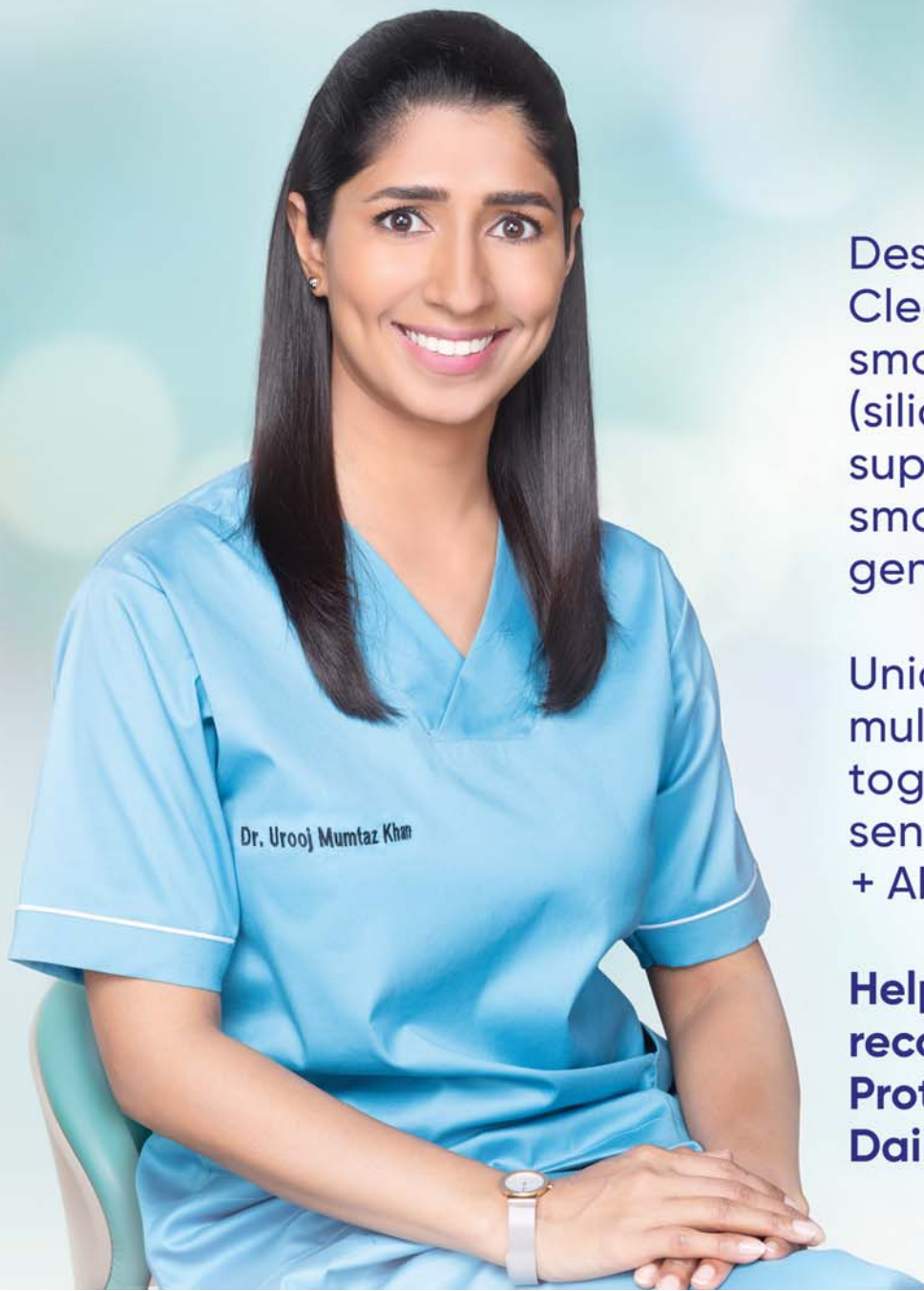
Moreover, Smile Train and FDI, with support from Dentsply Sirona, have developed a clinical education course to provide cleft professionals worldwide with additional in-depth training on digital cleft care protocols, and support them as they integrate digital technologies into their treatment plans.

The partnership builds on an ongoing global collaboration between Dentsply Sirona and Smile Train and aims to expand access to comprehensive cleft care worldwide. **-PR**

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FJDC drive stresses early detection of oral cancer

KARACHI: Marking April as Oral Cancer Awareness Month, like elsewhere in the world, the Fatima Jinnah Dental College (FJDC) ran a month-long campaign comprising different activities, including educational lectures and screening camps, to raise awareness about the disease that is second most common cancer in the country as per

prevention by dedicating the entire month to it.

For the purpose the FJDC organised campaigns, including educational lectures, and screening camps for students, faculty, and patients, to educate them on the significance of oral cancer prevention and to instill in the students a sense of obligation to fight this disease.



Photos: DT Pakistan



the Pakistan Medical Research Council.

According to the council approximately 30 percent of all cancer cases reported in Pakistan are of oral cancer, attributing it to common use of tobacco and betel nuts in the country, which increases the risk of developing this disease.

Despite such high prevalence, public awareness of the signs and symptoms of oral cancer is limited, resulting in late-stage diagnosis and poor survival rates among the patients.

FJDC CEO Dr Hussain Askary, as an advocate of preventive dentistry, ensured that his college and hospital play an active role in spreading awareness about the disease and its

FJDC also conducted free dental treatment for children and a School Dental Health Programme, providing more than 300 schoolchildren free screenings and educating them on the harmful effects of bad habits like chewing paan and gutka, which are common in Pakistan.

Seminars were also held on the college and hospital campuses, where senior faculty members gave lectures on oral cancer, and the students and teaching staff had lively discussions on new initiatives to decrease the prevalence of oral cancer in the country.

The FJDC awareness drive especially stressed the need for an early diagnosis and prevention of oral cancer. **-PR**

APDSA holds oral health camp for kids with special needs

TAXILA: APDSA - Pakistan collaborated with HITEC IMS Dental College to organise a free dental camp at Nasheman School for Special Education and Rehabilitation in Wah Cantt to celebrate World Oral Health Day.

APDSA Liaison Officer Dr Aniqah Tahir led the event with the aim of promoting oral hygiene and educating the caretakers of special students about basic dental health and its implementation.

At the camp the volunteers conducted an oral hygiene awareness session, followed by a Q&A session for parents and teachers.

The volunteers examined over 300 children for any oral condition requiring treatment.

Colgate Pakistan distributed oral hygiene sample kits among the students in connection with World Oral Health Day.

The APDSA team comprised 20 volunteers, along with 2 PGs and the organizing committee.

The volunteers were given certificates of participation.



Photos: DT Pakistan

The activity was aimed to encourage the children to maintain their oral hygiene and raise awareness about the importance of oral health among the community.

Nasheman School is a well-established special education institute for children with hearing impairments, visual impairments, and other issues, including autism, cerebral palsy and Down's syndrome.

The camp was overseen by Dr Shahreen Zahid and the Department of Community Dentistry of HITEC IMS Dental College, under the guidance of Dr Mariya Rabbani, who played a significant role in organizing and executing the event.

Overall, the dental camp was a great success in promoting oral health awareness and education on World Oral Health Day. **-PR**

TIU hosts sixth National Conference of Oral Sciences

Continued from front page

Head of the IRD Department, Dr Mohammad Salih Mustafa, who read from the biography of the consul general.

Ms Rosy shared her extensive experience in foreign policy and diplomacy, highlighting the determinants of states foreign policies in the international system, and the UK's foreign policy's motivating factors, such as its national interest and the sectoral areas that the British Consulate, Erbil, intervenes in for the security, peace and development of the Kurdistan Region and Iraq. These sectoral areas include political, economic, security, education and human rights fronts.

In the end, a question and answer session was held where the participants, including TIU academics, students, and members of the public put their queries to the seasoned diplomat, which were answered by her.

A certificate of appreciation was given to Ms Rosy by the TIU

president as a token of gratitude from the university.

Poster contest

Fifth-grade dental implant course students presented 13 scientific posters in different aspects of dental implantology at a poster contest held by the varsity's dentistry department.

Asst Prof. Dr Mehmet Ozdemir, Vice President for Academic Affairs, Mr Ercan Sezer, Executive Academic Advisor, Dr Aliser Babakulyev, Head of Dentistry Department, Dr Ranj Nadhim, Chief of Oral and Maxillofacial Surgery Branch, were present on the occasion.

The activity aimed to show students the format of scientific conferences and teach them how to prepare and present scientific posters for international conferences.

It also focused on implementing a formative assessment strategy as part of the dental implant module assessment criteria.

Formative assessment tools are highly encouraged in the universities that apply the Bologna process.

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References:

1. Akwagyriam et al, 2015. 2. Kakar et al, 2014 3. GSK data on file (GCCSS-GH-001 - parodontax complete protection toothpaste). 4. Akwagyriam et al, 2013. 5. Jose et al, 2018. 6. Attin T and Hornecker E, 2005. 7. Williams et al, 1992.

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*removal of plaque, after a professional clean and twice daily brushing. Brush twice a day and not more than 3 times, minimize swallowing and spit out. If irritation occurs, discontinue use. Not suitable for children under 12 years. Keep out of reach of children.

All buttoned up! Styling your plastic with elastics

Dr Chris Cetta, US

Clear aligners have become a popular method of orthodontic treatment in the new millennium, led by the launch of Invisalign by Align Technology in 1997. While the initial use of aligners was reserved for minor tooth movement and addressing orthodontic relapse, orthodontists gradually began treating cases of greater complexity as patient demand grew for this more aesthetic option. Pioneering orthodontists began incorporating dental elastics to correct malocclusions starting in the mid-2000s. This was accomplished by manually cutting the aligners chairside or by directing the technician to lower the simulated gingiva, thereby altering the trim line of the aligners. Align Technology began offering prefabricated hooks and cut-out windows in its Invisalign aligners beginning with the G3 release in 2010.¹

Orthodontists cleverly appropriated the available components for fixed orthodontic appliances to correct malocclusions with aligners. Lingual buttons, bondable molar tubes and Caplin hooks were often utilised in the early days, with variable success. Because these parts often had a small surface area and were designed for the centre of the clinical crown, there were frequent bond failures and frustrating emergency visits for patients and parents.

Recent innovations in bondable auxiliaries have made incorporating elastics into aligner cases much more predictable. Precision Aligner Buttons (DynaFlex), for example, are reimagined bondable buttons designed specifically for aligners. These buttons were engineered to fit within the prefabricated cut-outs provided by most major aligner manufacturers. Precision Aligner Buttons also have a base pad that is contoured for the cervical or gingival third of the clinical crown and a maximised surface area for additional bond strength. The following article provides a review of clinical scenarios for which incorporating elastics into your treatment plan can be advantageous.

Class II malocclusion

For mild to moderate Class II cases in which the molar



Fig. 1: The Precision Punch is part of the Clear Collection by HuFriedyGroup.

cuspid, placing the cut-out window on the distal aspect.

I prefer buttons on the mandibular first molars for several reasons. Firstly, although bonding buttons is an extra step and creates the potential for bond failure, it is simply easier for the patients to fasten elastic bands to outward-projecting buttons in the back of the mouth. Ease of use often equals better compliance. Secondly, the plastic dovetail created by a hook can bend outwards and irritate the cheek. Thirdly, heavier elastic bands can lift or potentially dislodge aligners. The only scenarios in

cut-out windows on the maxillary canines as opposed to hooks. If the maxillary canines are buccally ectopic or high, the elastic band will also provide a vertical force vector to aid in extrusion. For Class II division II cases, attaching the elastic band directly to the canine avoids any distal force on the aligners, which would counteract the proclination of the maxillary central incisors. A third scenario for cut outs on the maxillary canines is for more severe Class II cases in which the molar relationship is a half to full cusp off. Anecdotally, I have seen more effective Class II correction when bondable buttons are placed on the maxillary canines, versus hooks or notches in the aligner.

Regarding aesthetic button options, clear Precision Aligner Buttons are made of a composite-ceramic hybrid. These buttons also universally fit maxillary and mandibular canines and premolars in the cervical or gingival third of the crown adjacent to the gingival margin.

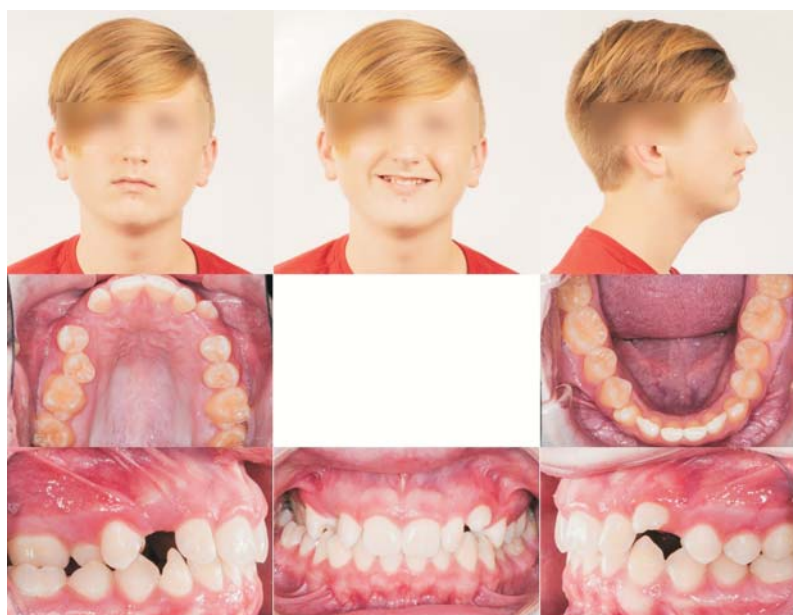
Class III malocclusion

For Class III cases, I will design my cases with hooks on the mandibular canines and cut-out windows on the maxillary first molars. I avoid hooks on the maxillary first molars for the same reasons that I avoid them in the posterior on Class II cases. If more significant Class III correction is needed, I have had good success with buttons bonded directly to the mandibular canines. This is another great indication for clear Precision Aligner Buttons.

As transverse discrepancy and posterior crossbite are often associated with Class III malocclusion, I incorporate a pearl from Dr Maz Moshiri and prescribe the cut-out windows on the palatal aspect of the maxillary first molars. Placing the buttons on the lingual aspect introduces an expansive force vector that can be quite beneficial. If attempting this technique, I recommend either a vertical or optimised attachment on the buccal surface, as the maxillary first molars are more susceptible to rotation around their palatal cusps.

Posterior and lateral open bite

Cut-out windows and bondable buttons can be incorporated into aligner treatment plans in several



Figs. 2a-h: Initial photographs of a case involving an impacted maxillary right canine.



Fig. 3: Panoramic image showing an impacted maxillary right canine.

classification is a half cusp or less off, I recommend incorporating prefabricated hooks, that is, notches or slits, on the maxillary canines and cut-out windows on the mandibular first molars. I recommend placing the cut-out windows in the centre of the clinical crown, as the square anatomy of the mandibular first molar almost always resists rotational forces. If there is a large posterior open bite, I will occasionally add a composite extrusion attachment to the mesial

which I will incorporate hooks in the posterior are if the patient has gold or porcelain crown restorations or if there is a severely collapsed vertical dimension.

After buttons have been bonded to the mandibular first molars, patients are instructed to start with 1/4 in., 4.5 oz elastics. If additional Class II correction is needed, I advance the patient to 1/4 in., 6.5 oz elastics.

There are several clinical indications for which I prefer



Figs. 4-6: Progress photographs showing a clear Precision Aligner Button which the surgeon attached to the canine. Notches were placed for the bootstrap elastic on the lingual aspect of the maxillary lateral incisor and first premolar, using the Tear Drop instrument.

ways. In low angle, skeletal deep bite patients, posterior vertical elastics can be used to help open the vertical dimension of occlusion.

Posterior elastics can also be implemented in the orthodontic finishing stages to settle a resultant posterior open bite. In this scenario, for which button cut-outs may not have been pre-planned, the Precision Punch (Fig. 1) and the Petite Punch (both HuFriedyGroup) are an excellent option. Another situation in which posterior vertical elastics can come in handy is settling a bite after orthognathic surgery.

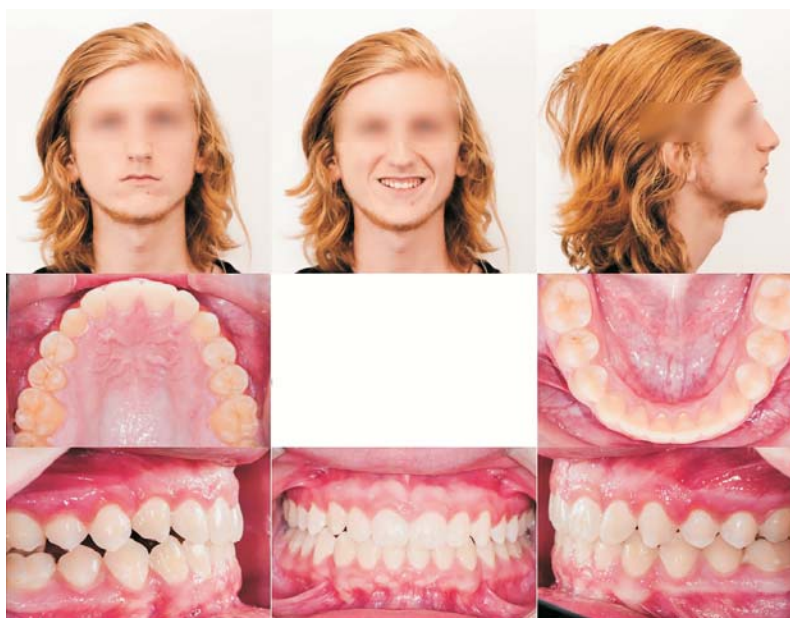
Anterior open bite

Elastics can be incorporated into anterior open bite cases in either triangle or anterior box configurations. For triangle elastics, clear Precision Aligner Buttons can be bonded to the maxillary and mandibular canines, as well as the mandibular first premolars. I recommend starting with $\frac{1}{4}$ in., 4.5 oz elastics. For anterior box elastics, buttons could be considered for the maxillary lateral incisors.

The clear Precision Aligner Buttons have a convex base and are better suited for the canines. I recommend selecting an aesthetic button with a flat base to better match the anatomical features of the incisors. When using anterior box elastics, a $\frac{5}{16}$ in., 4.5 oz elastic is recommended. Because these elastics can inhibit speech, I ask my patients to wear them at night only.

Extraction cases

While each extraction case should be considered on an individual basis, bondable buttons may be advantageous in setting up your anchorage system for space closure mechanics. Buttons will provide a more direct force to specific teeth, as opposed to hooks, which will distribute those forces to multiple teeth through the aligner.



Figs. 7a-h: Progress photographs showing the maxillary right canine fully erupted. The patient was scanned for an additional series of aligners (refinement) to address the Class II occlusion on the right side.

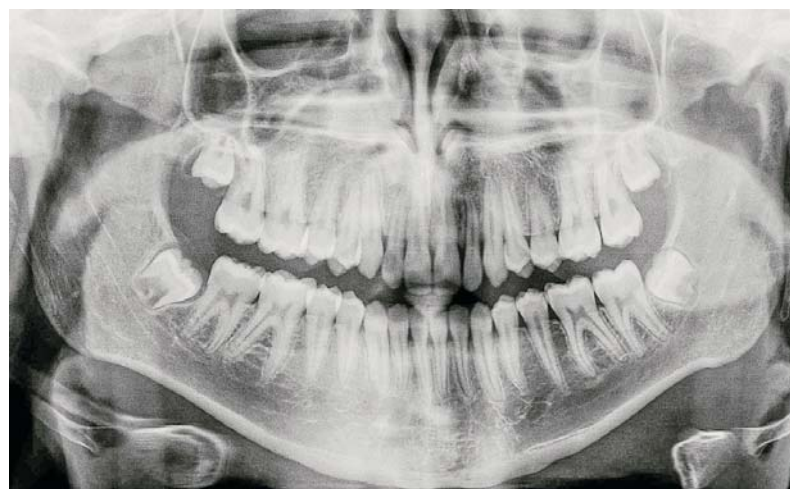


Fig. 8: Panoramic image showing the maxillary right canine fully erupted.

Impacted maxillary canines

Orthodontists have traditionally recommended fixed appliances when surgical exposure of impacted maxillary canines is necessary, owing to the obvious anchorage need for the orthodontic traction (Figs. 2 & 3). The recent popularity of aligners has forced me to think creatively regarding extrusion of these impacted teeth. My first cases incorporated either banded transpalatal arches with cantilever arms or bondable cantilever arms that could receive an elastic thread.

While every impaction scenario is unique, I have moved away from

the ancillary fixed appliances. For mild to moderate impaction, particularly when the impacted tooth is mid-alveolar ridge or on the buccal aspect, I employ an elastic band that is fastened by the patient directly to the aligner in a bootstrap fashion.

When an open exposure technique is indicated, consider requesting that the surgeon attach a bondable button to the impacted canine, as opposed to the traditional gold chain. The patient is then instructed on how to fasten an elastic band from the button to the aligner using the boot strap

technique. If prefabricated hooks or notches were not requested in the aligner, the Tear Drop plier (HuFriedyGroup) can be used to incorporate the necessary notches in the aligner. I recommend placing the slits on the two adjacent teeth to avoid aligner cracking, since the plastic is often thin where the eruption compensation or virtual geometry is present. I recommend a $\frac{3}{16}$ in. elastic (Figs. 4-8).

If a closed exposure technique is warranted, consider using Dr Jay Bowman's Monkey hook (American Orthodontics) to attach to the terminal end of the gold chain. This will also allow the patient to attach an elastic band from the impacted tooth to the aligner.

Moderate to severe tooth rotation

For rotated premolars and canines, consider incorporating auxiliaries such as bondable buttons into the treatment plan. Certainly, rotations can be corrected with plastic and composite attachments; however, the rate is typically limited to 2° per aligner stage.² Incorporating auxiliaries such as bondable buttons could effect correction two to three times faster than using aligners alone.³ This is particularly advantageous when correction of the rotated tooth is the rate-limiting step in terms of the number of aligners.

Regarding selection criteria, this technique is ideal for conical shaped premolars or canines that are rotated by more than 30° . If the premolars have a boxy morphology, I suggest sticking with the composite attachment. The reason is that the premolar will not spin as easily within the confines of the aligner. For more severe rotations, consider creating space mesial and distal to the tooth with the aligner movement. Certainly, bondable buttons can be employed on the lingual or palatal aspect to create a biomechanical force couple, though

Continued on Page 10