



ANNUAL CONGRESS ON

**ENDODONTICS, ORTHODONTICS,
PROSTHODONTICS AND DENTAL IMPLANTS**

AUGUST 17-18, 2018 TOKYO, JAPAN

Special Sessions
Day 1

ANNUAL CONGRESS ON

ENDODONTICS, ORTHODONTICS, PROSTHODONTICS AND DENTAL IMPLANTS

AUGUST 17-18, 2018 TOKYO, JAPAN



Soonshin Hwang

Yonsei University Gangnam Severance Dental Hospital, Republic of Korea

Considerations of maxillomandibular transverse discrepancies in orthodontic treatment

Transverse discrepancy is generally diagnosed upon intraoral examination by the presence of a posterior crossbite. The etiology of this malocclusion is multifactorial and is associated with hereditary or environmental factors such as skeletal, dental or congenital abnormalities, nonnutritive sucking habits, mouth breathing, etc. Posterior crossbites remaining into adulthood could pose a risk for continuous periodontal damage, unstable occlusion and even facial asymmetry. It is not uncommon to encounter individuals with increased vertical dimensions with relatively narrower upper dental arch and posterior teeth either compensated or in a crossbite state. In addition, class-2 and 3 patients frequently show transverse dental discrepancies which further complicate orthodontic treatment. However, most of these clinical findings have been studied by posteroanterior radiographs which may inevitably include magnification errors because of its 2-dimensional nature. This presentation will show evaluations of dental arch dimensions and tooth inclinations of the molar area using 3-dimensional CBCT images in adults with different vertical and sagittal facial types. Vertical dimensions will be categorized as high, normal, low angle based on the mandibular plane angle and subjects with different sagittal dimensions will be grouped into Class 1, 2 and 3 using the ANB angle. Appropriate patient cases that show orthodontic treatment in overcoming such transverse discrepancies will be presented to help correlate the findings of this study for clinical application.

Biography

Soonshin Hwang has completed her Dental education at Creighton University, School of Dentistry. She has completed Advanced Education in General Dentistry program at Columbia University and Orthodontic specialty training at Yonsei University, Gangnam Severance Hospital. She is currently working at the Orthodontic Department of Gangnam Severance Hospital as a Clinical Assistant Professor.

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Tuong Nguyen Nguyen

Case Western Reserve University, USA

Comm-Endo.... The root elite!

An expert is defined as a person who has a special skillset or knowledge in some particular field; somebody who is a specialist or an authority in that field. In addition, someone is only an expert if he or she can deliver on their special skills. Having special training or holding a specific status does not necessarily make someone an expert. It's all about results! A true expert should always consider all the following: training, knowledge, practice and experience and finally equipment. Also, one must never forget that it takes more than just the doctor to be the expert. In this presentation, Dr. Nguyen will methodically discuss what it would take for anyone who is self-motivated to become a "Comm-Endo" ... without being an endodontist. Clinical cases and videos will be used to discuss what general dentists and endodontists alike should be able to master in order to expertly serve their patients.

Upon completion of the session, attendees shall be able to

1. Understand what makes one an expert without being an Endodontist
2. Discern which equipment to include in their armamentarium and which not to invest in
3. Understand how to incorporate their Team in providing expert care
4. Integrate foundational concepts of how to increase fees while increasing patients flow
5. Learn effective marketing strategies to stand out locally and on the web, as an expert in Endodontics

Biography

Tuong Nguyen Nguyen has earned his Bachelor's degree in Dental Sciences in 1997 from the Catholic University of Louvain in Brussels, Belgium. He subsequently earned his Certificate in Clinical Endodontics and Master of Science in Dentistry degree in 2001 from Case Western Reserve University in Cleveland, OH. He was a full-time Assistant Professor in the Department of Endodontics at the University of Maryland from 2001 to 2004 and at the Oregon Health and Science University from 2004 to 2008. He is the Founder of Polaris Dental Specialists and the Love All Foundation. He currently practices at Polaris Dental Specialists, a multi-specialty practice in Beaverton and Salem, OR, USA. He is a Master at the World Clinical Laser Institute and Adjunct Professor of Endodontics at Case Western Reserve University.

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Ridge preservation overview and updates**Ahmed Alshabab**

Najran University, KSA

When a tooth extracted, the alveolar bone around it will tend to resorb. The reduction in alveolar ridge width and height after tooth extraction is evident in the literature. Dental implants can be used to replace teeth after extraction. However, in some situations the bone resorption reaches to point where replacement with dental implants becomes impossible. Ridge deficiency could be in bone height or width or in more advanced cases associated with soft tissue deficiency. Conditions where alveolar bone/soft tissue is reduced may result in biological/functional and or esthetic failures. A procedure known as Ridge Preservation may limit such reduction of alveolar bone following teeth extraction. The purpose of the ridge preservation procedure is to keep the width and height of the extraction socket. Many techniques, bone graft, membranes and biologics has been introduced in this field. The aim of the paper is to review several techniques and materials used for ridge preservation and suggest flowchart for decision making in ridge preservation procedure.

Biography

Ahmed Alshabab has obtained his bachelor's degree in Dental Surgery from King Khalid University, Saudi Arabia and Master of Science in Oral Biology from University of Pennsylvania, USA. He is the Fellow and Diplomate in Royal College of Dentists of Canada and American Board of Periodontology, respectively. He holds a Vice Dean position for development and quality, Faculty of Dentistry in Najran University, Saudi Arabia. He is an Assistant Professor of Periodontics and Dental Implants, Faculty of Dentistry, Najran University, Saudi Arabia.

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Evaluation of complications observed in Porcelain Fused to Metal (PFM) crowns placed at a teaching institution**Shizrah Jamal**

Aga Khan University Hospital, Pakistan

Introduction & Aim: Porcelain fused to metal crown is the most versatile variety of crown that is commonly placed worldwide. The objective of the present study was to determine the frequency of these complications and survival of crowns cemented over a period of five years in a tertiary care hospital and also to report the survival of these crowns.

Material & Method: A retrospective audit study was conducted in Dental clinics, Aga Khan University Hospital in which 150 PFM crowns were evaluated. All PFM crowns fulfilling the inclusion criteria were assessed both clinically and radiographically. Data was recorded in a specially designed pro forma. SPSS version 22.0 was used for statistical analysis. Frequency distribution of complications was determined. Chi-square test was used to determine the association of complications of PFM crowns with patient related factors. Kaplan-Meier survival analysis was used to determine the survival of PFM crowns. Level of significance was kept at 0.05.

Results: The most common complication observed was open proximal contacts (8.7%) followed by porcelain chipping (6%), decementation (5.3%) and abutment fracture (1.3%). There was no statistically significant association of PFM crown complication with tooth wear, betel nut and opposing dentition ($p\text{-value} > 0.05$). The overall success and survival rates of PFM crowns turned out to be 78.7 and 84.7%, respectively.

Conclusion: Within the limitations of the study, it can be concluded that PFM crowns is an effective treatment modality with high success and survival rates. Since, it was a single centered study the results should be generalized with caution.

Biography

Shizrah Jamal has completed his BDS from Dow University of Health Sciences and currently pursuing Post-graduation in the Department of Operative Dentistry at Aga Khan University Hospital.

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Association between variations in sella turcica size and morphology and sagittal and vertical malocclusions**Erum Afzal**

Aga Khan University, Pakistan

Statement of the Problem: The growth of sella turcica is completed early in life; therefore, it may be used to predict the future developing skeletal malocclusion. This can aid in early diagnosis, reduce the future treatment burden and decrease the treatment duration leading to less complicated treatment modalities. Therefore, the aim of this study was to evaluate the relationship between sella turcica dimensions and morphology and various sagittal and vertical malocclusions.

Material & Method: A cross-sectional study was conducted on the pretreatment lateral cephalograms of 180 subjects aged 13 to 19 years. The subjects were divided into two groups based on sagittal and vertical malocclusions. The sella turcica dimensions evaluated were length, diameter and depth measured digitally on view Pro-X software. One-way ANOVA and post-hoc Tukey's test was applied to compare sella turcica dimensions between sagittal and vertical malocclusions. Chi-square test was applied to compare sella turcica morphology among sagittal and vertical malocclusions. A $p\text{-value} \leq 0.05$ was taken as statistically significant.

Result: One-way ANOVA showed significant differences between sella turcica length ($p \leq 0.02$) and depth in vertical malocclusions ($p \leq 0.03$), whereas post-hoc Tukey showed significant differences between sella length ($p \leq 0.03$) and diameter ($p \leq 0.04$) in normodivergent versus hyperdivergent groups. Significant differences were found in the sella turcica morphology in sagittal malocclusions only ($p \leq 0.03$).

Conclusions & Significance: Sella turcica length and depth can aid in predicting the future vertical growth pattern. Increased sella dimensions were found in hyperdivergent vertical malocclusion only. Bridging of the sella turcica was most prevalent in class-3 malocclusion.

Biography

Erum Afzal has completed BDS from National University of Sciences and Technology, Pakistan. She is currently doing training in Orthodontics from Aga Khan University, Pakistan.

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Association between maxillary posterior segment discrepancy and the angulation of maxillary molars in patients with different vertical growth patterns**Durr E Shahwar Malik**

Aga Khan University, Pakistan

Statement of the Problem: The impaction of maxillary third molars causes the crowns of maxillary first and second molars to tip distally in patients with maxillary posterior segment discrepancy. The aim of this study was to compare the maxillary first and second molar angulations in patients with Maxillary Posterior Segment Discrepancy (MPSD) with Non-Maxillary Posterior Segment Discrepancy (N-MPSD) and evaluate the effect of their angulations on various divergence patterns.

Materials & Method: A cross-sectional study was conducted using the pre-treatment lateral cephalograms of 180 subjects which were divided into two groups i.e. MPSD and N-MPSD. The Mann-Whitney U test was applied to compare various skeletal and dental parameters between the two groups and a pairwise comparison was made among the vertical growth patterns. The Kruskal Wallis test was used to compare the mean molar angulations and overbite among the three divergence patterns.

Result: The ratio of anterior to total palatal plane ($p \leq 0.001$) and the molar angulation ($p \leq 0.001$) showed significant differences between the MPSD and N-MPSD groups. In the MPSD group, significant differences were found between the overbite in the normodivergent versus hyperdivergent ($p \leq 0.001$) and hypodivergent versus hyperdivergent groups ($p \leq 0.001$) and in the angulation of the first maxillary molars in the normodivergent versus hyperdivergent groups ($p \leq 0.001$).

Conclusion & Significance: MPSD causes reduced maxillary first and second molar angulations. A ratio of the anterior palatal plane to total palatal plane length of ≥ 0.51 was seen in patients with impacted maxillary third molars.

Biography

Durr E Shahwar Malik is the resident at the Orthodontics Department of the Aga Khan University Hospital, Pakistan.

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Establishment of a topography analytical method for activity prediction of nano-submicro-micro hybrid titanium surfaces**Qiaojie Luo, Weiwei Lao and Xiaodong Li**
Zhejiang University, China

Dental implants of micro topographical surfaces have been widely used in clinic and has obtained high success rate, through the mechanism of increasing the local factor levels to produce an osteogenic environment. Nowadays, nontopographical features are hoped to improve osteointegration and surfaces of Nano-Submicro-micro hybrid topography are prized in biomaterial research. However, to obtain the Nano-Submicro-micro hybrid topographical implant of desirable property is hit-and-miss, without guidance or quantitative topographical parameters to predict biological performance. In the present study, we constructed a series of titanium surfaces of Nano-Submicro-micro topographical feature, through the combination of sandblasting, acid etching and alkali treatment. With the increase time in alkali treatment, the Nano-scale structure strengthened with the micro and Submicro scale structures weakened. *In vitro* and *in vivo* studies showed that the osteogenesis of these surfaces, increased first and then decreased. We constructed a set of SEM-image dependent topography analytical methods to quantitatively analyze the topography features of each scales. Based on the series titanium surfaces with high consistence in surface chemistry, matter phase structures and the topography analytical methods, we found that the complexity of structure in each scale played important role in biological activity and it was the sum of complexity in all scales that determined the overall performance of the implant. In further study, we will analyze more surfaces to refine the analysis method and would be a promising model to predict the surfaces of the highest bioactivity in a specific topographical series of implant surfaces.

Biography

Qiaojie Luo has completed her PhD degree from Zhejiang University and her Postdoctoral research in 2017. Currently, she is focusing on the surface modification of dental implants and osseointegration mechanism of titanium.

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Comparison of 0.2% chlorhexidine gel and 10% betadine on healing of tooth socket in mice**Samaneh Keshavarz**

Rafsanjan University of Medical Sciences, Iran

Statement of the Problem: Tooth extraction is the most common surgical procedure performed in dental office. Various drugs are used to accelerate wound healing in soft and bone tissues. In this study, the effect of 0.2% chlorhexidine gel and 10% betadine gel on tooth socket healing was investigated.

Materials & Method: This experimental study was performed on 45 male mice randomly divided into three groups of 15. Under general anesthesia, the right maxillary second molar of all the mice were extracted. The socket of the first group was covered with 0.2% chlorhexidine gel and the second group was covered with 10% betadine gel and the socket of third group was left empty. On the third, seventh and fourteenth days after surgery, one third of the animals were sacrificed from each group. Then the prepared slides from each group were examined.

Result: The extent of granulation tissue on the third day after tooth extraction in the chlorhexidine group was greater than the remaining two groups. The number of lymphocytes on the seventh day after tooth extraction in the chlorhexidine group was lower than the control group. The number of macrophage on the 14th day after tooth extraction in the chlorhexidine and betadine groups was lower than the control group. The numbers of fibroblasts in the chlorhexidine group on the fourteenth day after tooth extraction was higher than the control group. These differences were statistically significant.

Conclusion & Significance: According to the results of this study, 0.2% chlorhexidine gel can accelerate the process of tooth socket healing.

Biography

Samaneh Keshavarz has completed her PhD from Shahid Sadoughi University of Medical Sciences, Iran. She has published about 6 papers in reputed journals and has published 2 books.

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Establishment of a topography analytical method for activity prediction of nano-submicro-micro hybrid titanium surfaces**Weiwei Lao, Qiaojie Luo and Xiaodong Li**
Zhejiang University, China

Dental implants of micro topographical surfaces have been widely used in clinic and has obtained high success rate, through the mechanism of increasing the local factor levels to produce an osteogenic environment. Nowadays, nontopographical features are hoped to improve osteointegration and surfaces of Nano-Submicro-micro hybrid topography are prized in biomaterial research. However, to obtain the Nano-Submicro-micro hybrid topographical implant of desirable property is hit-and-miss, without guidance or quantitative topographical parameters to predict biological performance. In the present study, we constructed a series of titanium surfaces of Nano-Submicro-micro topographical feature, through the combination of sandblasting, acid etching and alkali treatment. With the increase time in alkali treatment, the Nano-scale structure strengthened with the micro and Submicro scale structures weakened. *In vitro* and *in vivo* studies showed that the osteogenesis of these surfaces, increased first and then decreased. We constructed a set of SEM-image dependent topography analytical methods to quantitatively analyze the topography features of each scales. Based on the series titanium surfaces with high consistence in surface chemistry, matter phase structures and the topography analytical methods, we found that the complexity of structure in each scale played important role in biological activity and it was the sum of complexity in all scales that determined the overall performance of the implant. In further study, we will analyze more surfaces to refine the analysis method and would be a promising model to predict the surfaces of the highest bioactivity in a specific topographical series of implant surfaces.

Biography

Weiwei Lao is working at the department of Conservative Dentistry and Periodontics in Affiliated Hospital of Stomatology, College of Medicine, Zhejiang University China.

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Effects of different Position of Curvature (PC) on removal of separated instrument from severely curved root canals**Iru Prajapati**

Xi'an Jiaotong University, China

Teeth with same angle of curvature can have different Position of Curvature (PC). With this we come to know that beside the shape and angle of a root canal, there is another contributing factor which influences the removal of separated instrument is Position of Curvature (PC). PC value lower than 0.5 represented curvatures that were concentrated in the cervical third; PC value ranging from ≥ 0.5 to < 2.0 represented curvatures concentrated in the middle third; and, PC value above 2.0 represented curvatures in the apical third. Using this method on the radiograph of the extracted teeth, PC was noted more on the middle and apical third. PC at cervical third was discarded because fracture made at this position can be easily removed. So the fracture of file was made at the apical third of selected root canal. Fracture file from root canal was attempted to remove using dental operating microscope and ultrasonic tips. Furthermore using CBCT comparative 3D volumetric analysis was done using mimics software. The aim of this study was to evaluate the removal of separated file from different Position of Curvature (PC) and angle of curvature ranging from $\geq 30^\circ$ - $\leq 45^\circ$ within the time limit 30 minutes, and also determine the comparative 3D volumetric analysis of root canal using CBCT. It also further aimed to help the clinician & endodontists to perform a benefit/risk analysis before removal of a separated instrument in a root canal with different PC values.

Biography

Iru Prajapati (Endodontist) from Nepal, had completed her MDS in 2016 from Xi'an Jiaotong University, Xi'an, China and BDS from Manipal University. She is working as endodontist in Oracare Periodontal Clinic, Kathmandu. Her publication article as second author in JNDA of Nepal.

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Sealing ability of SOR flowable composite when used as an intra orifice barrier: An *in vitro* study

Meera Acharya

Guangxi Medical University, China

Introduction: To compare the coronal sealing ability of SOR flowable Composite with other materials (Filtek Z350 XT and GIC Fuji type II) and investigate the influence of different adhesive systems (Xeno V and Prime & Bond NT) on the sealing performance of SOR flowable Composite when used as an intra orifice barrier after root canal treatment.

Methods: 54 freshly extracted human mandibular first premolar teeth with single canal were selected for the experiment and root canal treated. After completion of RCT the teeth were divided into two groups: experimental and control. The experimental group was further divided into four sub groups as XT group, SP group, SP group and GC group and the control group was divided into two groups as PC group and NC group. The coronal 3.5mm of gutta percha were removed from all the samples in the experimental group and the prepared cavity is restored with the different restorative materials used in the experiment like Filtek Z350 XT, SDR flow and GIC Fuji type II. The samples in the control group is simply left as it is with gutta percha till the coronal orifice. All the samples were then incubated for one week, thermocycled in hot and cold baths simultaneously for 500 cycles and finally stained in 1% Methylene blue solution for another one week in the incubator. The samples were then split longitudinally, and the depth of dye penetration was measured under a Stereomicroscope.

Results: The microleakage index of the SX group was significantly lower than the other groups while the coronal sealing ability of GC group was significantly lower than that of the other groups ($P < 0.05$) and was not significantly different than the control group ($P < 0.05$).

Conclusion: GIC Fuji Type II can be considered unsuitable as an intra orifice barrier while SOR flowable composite in combination with Xeno V can be used as an ideal intra orifice barrier after the completion of root canal treatment.

Biography

Meera Acharya is recently graduated from Guangxi Medical University, Nanning China in Conservative and Endodontics and is presently working in a private Hospital in the home town in Nepal.

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Assessment of bone quality at different stages of implant healing in mandibular overdentures: An *in vivo* study**Hari Parkash¹ and Praful Mehra²**¹All India Institute of Medical Sciences, India²Dr Mehra's Smile Destination, India

McGill's consensus recommended a two-implant supported mandibular overdenture as the basic minimum care to be delivered for the rehabilitation of edentulous patients. It is generally believed that two or four implants if splinted provide a better distribution of forces to the implants and increase the longevity of the treatment. However, unsplinted implants have also shown to give comparable results. One of the methods to analyze implant success is the bone quality around the implant. CBCT allows for an estimation of bone quality around the bone implant interface and is feasible in human studies as published in 2017 by Wuhan University, China. Thus, a study was undertaken to compare the bone quality around four endosseous implants placed in each of eight patients, immediately after placement and six months after prosthetic loading with mandibular overdenture using unsplinted Dalla bona attachments. Bone quality was assessed at four junctions of the implant length from apex to crest module at varying intervals of time using CBCT. The post implant placement scans and post implant loading scans were analyzed using the fusion tool in CBCT software to enhance the standardization of the procedure. The study concluded that four unsplinted implants using Dalla bona attachments is a favorable treatment modality for implant supported mandibular dentures. 24 implants out of 32 implants analyzed showed no significant decrease in bone quality values. In the intergroup comparison among implants placed in different positions no significant change ($p>0.05$) in bone quality was observed post loading.

Biography

Hari Parkash has completed his bachelor's from Punjab University in 1965 and his Masters in Prosthodontics in 1968. He has been conferred Fellowship in Dental Surgery by Royal College of Physicians and Surgeons of Glasgow (2007), Fellowship in Dental Surgery of the Royal College of Surgeons of England (2013) and Fellowship of Royal College of Surgeon (Edinburg) in 2017. He was also Project Director for the NOHCP of GOI, for six years. He has authored and co-authored over 296 scientific papers both in national and international journals. He has an experience of 51 years as an Academician and Clinician.

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A comparative evaluation in implant position and angulation accuracy executed through a universal open guide system: An *in vitro* study**Praful Mehra¹ and Hari Parkash²**¹I.T.S Dental College, India²All India Institutes of Medical Sciences, India

Guided implant surgeries aided with cone beam computed tomography and stereolithography or 3-D printing has helped enhance precision in implant surgeries making them more prosthetically oriented. Recently many companies are coming up with universal open guide systems. However, it becomes imperative to know the level of accuracy of the universal open guide systems. Thus, a study was undertaken to analyze and compare the deviations in the position and inclination of the virtually planned and actually placed implants using universal open surgical guide. The purpose of this study was to determine and to compare the precision of 3-D image-guided implant rehabilitation *in vitro*. The implant positions and angulations were determined using a vision measuring machine. For the purpose of this study, a total of 24 implants were placed in 8 replaceable bone blocks which simulated the mandibular posterior edentulous bone. In each bone block, 3 implants were placed. These 24 implants were then evaluated for accuracy in linear (mesio-distal and vertical directions) and angular measurements. The baseline measurements were the CBCT derived planning for implant placement. Descriptive statistics was calculated for each variable of the group B (Guided Implant placement) with respect to the control group (CBCT) using '1-Sample T-test' in relation to each parameter studied i.e. vertical distance, linear distance and perpendicularity. It was concluded that the stereolithographic universal open guide used in the study may be considered accurate for placement of implants in horizontal or mesio-distal position and also in terms of perpendicularity but not in vertical position.

Biography

Praful Mehra has completed his Postgraduation in Prosthodontics in 2011 from India. He is Fellow of International Congress of Oral Implantologists, Diplomate of World Congress of Oral Implantologists Japan, Fellow of International College of Dentists and Fellow of Pierre Fauchard Academy. He was involved in teaching for six and half years after his post-graduation and was a PG Guide and Co-Guide for more than 8 researches. He was awarded Best Postgraduate Prosthodontics by ICD Section 6 in 2012. He has publications at both national and international level and maintains a private practice in New Delhi.

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