Friday, 6 September 2019

WDC 2019 Abstract Book

FREE COMMUNICATION SESSIONS 13–21 and POSTER SESSIONS 07–12

FREE COMMUNICATION SESSIONS 13–21

Free Communication Session 13 | 09.06.2019, 10:00 – 11:00 | Cubicle 1

Theme: Endodontics

FC049

Comparison of Post-operative Pain Relief between Emergency Pulpotomy and Pulpectomy

Kishwer Naz[1], Zohaib Younus[2], Avinash Talib[2]
[1]*Operative Dentistry, Fatima Jinnah Dental College, Karachi, Sindh, Pakistan,* [2]*Fatima Jinnah Dental College, Karachi, Pakistan*

Introduction: The aim of this study is to determine the incidence of post treatment pain in patients with symptomatic pulpitis after two different endodontic emergency procedures are applied.
Case Description: The duration of this study is 6 months starting from January to June 2018. Permanent teeth with irreversible pulpitis and severe pain pre-operatively. Their pre-operative pain is assessed and recorded using VAS score. Two procedures are performed under local anesthesia 1. Pulpotomy 2. Pulpectomy. Patients are prescribed analgesics and recalled after 24 hours for assessment. Data is recorded and entered in SPSS 23. Statistical analysis is performed to obtain results. A total of 200 hundred subjects (29% males and 71% females) were included in the study. Group1 was treated with pulpotomy and Group2 with pulpectomy. Younger patients and female patients showed greater pre-operative VAS scores. The mean pre-operative VAS for both Group1 and Group2 is 8.8/10 suggesting the severity of pre-operative pain. Result shows post-operative VAS for Group1 is 3.38/10 and of Group2 0.97/10.
Discussion: A previous study of post-operative pain after initiation of root canal therapy resulted in 71% of the subjects to have a VAS score of less than 2 after emergency treatment, and only 3% subjects complained if post-operative pain of VAS score 4 and 5.
Conclusion/Clinical Significance: Even though emergency pulpotomy was successful in lowering the post-operative pain too much extent, the results show that an initial yet complete pulpectomy of the effected tooth results in even much lesser post-operative pain.

FC050

Trendy but Challenging Regenerative Endodontics: A Case Series

Snigdha Shubham
Department of Conservative Dentistry and Endodontics, Universal College of Medical Sciences, Bhairahwa, Nepal

Introduction: Regenerative endodontics is a new treatment method for immature necrotic permanent teeth which allows complete formation of a dental pulp-like tissue that will act as the original dental pulp. Thus, there is considerable interest in research and clinical studies aimed towards regeneration of a functional and healthy pulp-dentin complex. But, despite of great deal of enthusiasm and effort, regenerative endodontics has encountered substantial challenges towards clinical translation. Hence, the purpose of this case report is to show challenges and special circumstances presented by each case.
Case Description: Four clinically and radiographically diagnosed necrotic immature permanent teeth were treated using revascularization treatment. The therapeutic protocol involved accessing the pulp chamber; irrigating copiously with NaOCl; applying antibiotic paste then provisionally sealing it. After three weeks, the canals were cleaned, and the apex irritated with size 15 K-file to induce blood that would serve as a scaffold for pulp revascularization. For Follow up, all four teeth showed resolution of periapical radiolucency whereas three of six teeth showed continued root development. Two teeth displayed a positive response to vitality testing.
Discussion: The revascularization protocol seems to be simple and fascinating but practically there are number of hurdles and unpredictability of results. The problems such as difficulty in bleeding, MTA plugging, discoloration and unpredictable root wall thickness.
Conclusion/Clinical Significance: Based upon experience of four cases, following clinical tips are recommended-(1) use anesthetic without vasoconstrictor (2) use collagen matrix for MTA plug (3) inform patient about potential for staining.

© 2019 The Authors. International Dental Journal © 2019 FDI World Dental Federation

FC051

Effect of Chitosan Nanoparticle on Smear Layer Removal

Diatri N. Ratih[1], Aqilla Kartikaningtyas[2]
[1]*Conservative Dentistry, Faculty of Dentistry, Universitas Gadjah Mada, Yogyakarta, Indonesia,* [2]*Specialist Study Program of Conservative Dentistry, Faculty of Dentistry Universitas Gadjah Mada, Yogayakarta, Indonesia*

Aim or Purpose: To investigate the effect of chitosan nanoparticle as a final irrigation solution with different contact times on smear layer removal from the dentin of root canal walls.
Materials and Methods: After the approval by the Ethics Committee of the Faculty of Dentistry Universitas Gadjah Mada, a total of 30 premolars were used in this study. The teeth were randomly assigned into 3 groups of 10 each. Group 1, final irrigation using 17% EDTA; Group 2, using 0.2% chitosan nanoparticle; Group 3, using 2.5% NaOCl. Each group was further divided into 2 groups of 5 each. Group A, a contact time of final irrigation for 3 mins; Group B, for 5 mins. Smear layer removal was observed using Scanning Electron Microscope (SEM) with magnification of 2000X, and micrographs of SEM were scored based on tubules dentin were covered by smear layers. Data were analyzed using Kruskal-Wallis followed by Mean-Whitney U with level of significance of 95%.
Results: Kruskal-Wallis analysis showed that a significant difference of smear layer removal occurred among final irrigation solutions ($P < 0.05$), whereas no significant difference occurred among contact times ($P > 0.05$).
Conclusions: Final irrigation using 17% EDTA and 0.2% chitosan nanoparticle with contact times of 3 and 5 mins has the same effect on smear layer removal from the dentin of root canal walls, however both irrigation solution produced greater semar layer removal than 2.5% NaOCl.

Free Communication Session 14 | 09.06.2019, 10:00–11:00 | Cubicle 2

Theme: Pedodontics

FC053

Apical Revascularization of Necrotic Permanent Teeth by Different Techniques

Wael M. Abd Alkhalek
Pediatric Dentistry, Faculty of Dentistry, Zagazig, Ash Sharqiyah, Egypt

Aim or Purpose: Evaluate the effect of tri calcium silicate cement (Biodentin) and mineral trioxide aggregate (MTA) on apical diameter after revascularization in necrotic immature permanent teeth.
Materials and Methods: 20 upper anterior teeth showed immature roots with open apex, age from 9 to 12 years old. Revascularization treatment was done, which was started with disinfection of the canals (sodium hypochlorite irrigation, followed by triple antibiotic paste for 2–3 weeks). Next, the triple antibiotic paste was removed by irrigation with saline, the teeth were divided into two groups 10 each, group A: revascularization using blood clot scaffold only, and group B: revascularization using blood clot and platelet rich fibrin (PRF). Each group was subdivided into two subgroups according to the material placed over the root canal orifice and a coronal seal of glass ionomer. Follow-up was done for 6 months. Standardized radiographs were analyzed for periradicular healing and apical closure, and clinical analysis was performed using mobility index as compared to baseline value.
Results: There was increase in the root length at 3 and 6 months in two subgroups of group B (PRF) than group A with no significant difference. In group A, there was significant increase in mean root dentin thickness at Biodentine group than MTA group through the whole follow up period while in group B there was increase in thickness of dentin at Biodentin subgroup but with no significant difference. There was a reduction in mobility in both groups with no significant difference.
Conclusions: Clinical and radiographic evidence showed revascularization procedure could be an alternative treatment in immature nonvital teeth. In addition, placing Biodentine and MTA cement provided a good seal and favorable outcome.

FC054

Assessment of Two Materials in Pulpotomized Immature Permanent Molars

Gihan M. Abuelniel[1], Nihal Kabel[2]
[1]*Pediatric Dentistry, Cairo University, Giza, Al Jizah, Egypt,* [2]*Misr University for Sciences and Technology, Giza, Egypt*

Aim or Purpose: To evaluate the clinical and radiographic outcomes of mineral trioxide aggregate (MTA) and Biodentine as vital pulp therapy materials of cariously exposed vital immature mandibular first permanent molars.
Materials and Methods: Sixty immature first mandibular permanent molars cariously exposed with symptomatic /asymptomatic pulpitis were included in the study according to inclusion criteria and were equally divided in two groups. Following split-mouth design molars were randomly assigned to either a control group (MTA 30 molars) or a test group (Biodentine 30 molars). After conducting pulpotomy and covering pulp stumps with the MTA and Biodentine, treated molars received permanent restorations. Blinded clinical and radiographic evaluations were performed at different time intervals (base line immediate postoperative, 6, 12 and 18 months) according to clinical and radiographic criteria of success. Data were recorded and analysed.
Results: Regarding the clinical criteria of success, no statistically significant difference was found between MTA and Biodentine as vital pulp therapy materials of cariously exposed vital immature mandibular first permanent molars. Regarding the radiographic criteria both groups showed no statistically significant difference, while the prevalence of root formation stage (H) increased with time in each group that denoted increase in root length and apical constriction.
Conclusions: Both MTA and Biodentine could be chosen as vital pulpotomy materials in the treatment of cariously exposed vital immature mandibular first permanent molars.

© 2019 The Authors. International Dental Journal © 2019 FDI World Dental Federation

FC055

The Key for Successful Pulp Therapy in Necrotic Primary Teeth

Rasha F. Sharaf

Orthodontics and Pediatric Dentistry Department, National Research Centre- Egypt, Cairo, Egypt

Aim or Purpose: To assess the clinical and radiographic success of partial pulpectomy in necrotic primary teeth using MTAD (Mixture of doxycycline isomer, Acid and Detergent) versus Chlorohexidine irrigation. To compare the antibacterial effect of MTAD versus Chlorohexidine irrigation against bacteria isolated from necrotic primary teeth.

Materials and Methods: A sample of 40 patients with necrotic pulps of primary mandibular molars were selected, the whole procedures were explained for the parents and those who accepted to join the study signed a written consent. The age of the children ranged from 4 years to 6 years with signs and symptoms of non-vital pulps such as localized swelling or sinus tract. Patients were divided into 2 equal groups according to the irrigation material used during partial pulpectomy, where in group (A) MTAD was used and in group (B) Chlorohexidine was used for irrigation. Pre-operative and immediate postoperative radiographs were taken for the patients. Microbiological samples were isolated from the necrotic root canals before and after irrigation, to evaluate the antibacterial effect of each irrigant used. Clinical and radiographic evaluation was performed at 3 months and 6 months to assess clinical and radiographic success.

Results: Microbiological results showed that MTAD had stronger antibacterial effect than Chlorohexidine against bacteria isolated from the infected root canals. Partial pulpectomy using MTAD irrigation showed higher clinical and radiographic success than with Chlorohexidine irrigation.

Conclusions: Irrigation of the infected root canals using MTAD increased the clinical and radiographic success of partial pulpectomy due to its strong antibacterial effect.

Free Communication Session 15 | 09.06.2019, 10:00 – 11:00 | Cubicle 3

Theme: Materials

FC057

The Effect of Home-bleaching Agent & polymerization Time on Surface Roughness

Mehmet Ali Fildişi[1], Mehmet Ali Fildişi[2], Rümeysa Özlen[3], Zümrüt Özduman[3], Evrim Eligüzeloğlu Dalkılıç[3], Mağrur Kazak[4], Nazmiye Dönmez[3]

[1]Restorative Dentistry, Bezmialem Vakif University, Istanbul, Turkey, [2]Bezmialem Vakif University, Faculty of Dentistry, Istanbul, Turkey, [3]Bezmialem Vakif University, Faculty of Dentistry, Istanbul, Turkey, [4]Bahcesehir University, Faculty of Dentistry, Istanbul, Turkey

Aim or Purpose: The aim of this study is to evaluate the effect of home bleaching agent and polymerization time on surface roughness of two different bulk-fill composites.

Materials and Methods: In the present study, sonic activated and high viscosity bulk-fill composite resin materials were used. Both of bulk-fill materials polymerized with monowave LED light curing unit at two different polymerization time: Group SF-10s (sonic activated-10 seconds); Group SF-20s (sonic activated -20 seconds); Group FB-10s (High viscosity -10 seconds) Group FB-20s (High viscosity - 20 seconds). 40 composite discs (4 mm depth - 5 mm diameter) for 4 tested groups (n = 10) were prepared using Teflon molds. Top surfaces of the specimens were polished with polishing disks. The surface roughness was measured using profilometer. This measurement was repeated for four positions on the same specimen. The mean surface roughness values were calculated for each specimen. The roughness measurements were repeated after home bleaching regimens with %16 carbamide peroxide agent. Data were analyzed using Wilcoxon signed rank test, Kruskal Wallis, Mann Whitney U tests ($p < 0.05$).

Results: No significant difference was determined when the groups were compared depending on polymerization time and bulk-fill materials before and after bleaching procedure ($p > 0.05$). The surface roughness values were significantly decreased in group FB-10s and FB-20s after bleaching ($p < 0.05$).

Conclusions: While the bleaching agent caused a decrease in surface roughness on the high viscosity bulk-fill, it did not change the sonic activated bulk-fill.

FC058

Effects of Repeating Bleaching Procedure on Color Stability Various Porcelains

M. Esad Taha[1], Kubra Erdem[2], Gülsüm Sayin Ozel[3], Ozgun Yusuf Ozyilmaz[2]

[1]Department of Prosthodontics, Bezmialem Vakif University, Istanbul, Turkey, [2]Bezmialem Vakif University, Istanbul, Turkey, [3]Istanbul Medipol University, Istanbul, Turkey

Aim or Purpose: Bleaching agents are commonly used in dentistry for treating the discolored teeth. A number of biomaterials and methods are using in clinical applications. The major aim of this study is to evaluate the effects of bleaching agents on the color stability of various dental porcelains.

Materials and Methods: 10 specimens were fabricated (10mm × 2 mm) from each porcelain groups following; IPS E.max CAD, Vita Enamic, Vita Mark II, GC Cerasmart divided into 4 subgroups. The specimens were applied bleaching agent [(Opalescence Boost 40% OP) for 1, 2 and 7 days respectively. Baseline and after color values of samples were recorded. Color values CIE (Commission Internationale d'Eclairage) L*, a*, and b * were measured and change in color (ΔE) was calculated. Data were analyzed by one-way analysis of variance (ANOVA) followed by Tukey's honestly significant difference test. $p < 0.05$ was considered significant.

Results: There were difference among in all groups; IPS E.max CAD (3.14 ± 2.28) showed biggest value among all groups, other groups respectively GC Cerasmart (1.81 ± 1.32), Vita Enamic (1.34 ± 0.64), Vita Mark II (0.64 ± 0.28) for 1st day. E.max changed much more from all other materials for each 1st, 2nd, and 7 days. The highest ΔE values were evaluated on 7 day for each group. Mark II showed much more color stability from other groups.

© 2019 The Authors. International Dental Journal © 2019 FDI World Dental Federation

Conclusions: Bleaching agents may falsify on color stability dental porcelains for long time use therefore their effects should be well-known and used them for prosthetic carefully.

FC059

36-month Clinical Performance of Multimode Universal Adhesives in NCCLS

Esra Ergin[1], Fatma Dilsad Oz[2], Simge Canatan[2]
[1]*Department of Restorative Dentistry, Hacettepe University, Faculty of Dentistry, Ankara, Turkey,* [2]*Hacettepe University, Ankara, Turkey*

Aim or Purpose: The aim of this randomized, controlled, prospective clinical trial was to evaluate the performances of two different universal adhesives and one etch-rinse adhesive for restoration of non-carious cervical lesions (NCCLs).
Materials and Methods: Twenty patients with at least seven NCCLs were enrolled. Lesions were divided into 7 groups according to adhesive systems and application modes: GSE: GLUMA Universal-self-etch, GSL: GLUMA Universal-selective etching, GER: GLUMA Universal-etch-and-rinse, ASE: All-Bond Universal-self-etch, ASL: All-Bond Universal-selective etching, AER: All-Bond Universal-etch-and-rinse, SBE (Control): Single Bond2-etch-hand-rinse. A total of 155 NCCLs were restored with a nanohybrid composite (Tetric N-Ceram). Restorations were scored with regard to retention, marginal discoloration, marginal adaptation, recurrent caries and post-operative sensitivity using modified USPHS criteria after 1 week, 6, 12, 24 and 36 months. Statistical evaluations were performed using Chi-square tests ($p = 0.05$).
Results: The recall rate was 81.9% after the 36-month follow-up. The cumulative retention rate for self-etch groups (GSE: 72.2%, ASE:75%) were significantly lower than other experimental groups (GSL: 93.7%, GER: 100%, ASL: 94.1%, AER: 100%, SBE: 100%) at the 36-month follow-up ($p < 0.05$). Only one restoration from ASL group demonstrated post-operative sensitivity at 6 and 12-month observations. No secondary caries was observed on the restorations at any recall. At the end of 36-month observations, no significant differences were detected among groups regarding any of the criteria assessed, except retention.
Conclusions: Etch-and-rinse and selective etching application modes of the tested universal adhesives tended to provide better clinical outcomes considering the criteria evaluated at the end of 36-month evaluation.

FC060

The Materials Is the Orthodontist

Tarek Elshazly[1], Christoph Bourauel[2], Ludger Keilig[2], Sherif Kandil[3]
[1]*Oral Technology Department, Bonn University, Bonn, Nordrhein-Westfalen, Germany,* [2]*Bonn University, Bonn, Nordrhein-Westfalen, Germany,* [3]*K-Line Europe GmbH, Duesseldorf, Nordrhein-Westfalen, Germany*

Aim or Purpose: To overcome the rate-limiting step of conventional aligners by producing aligners made of shape memory polymers (SMPs) predicted to enable treatment of full orthodontic cases with very few numbers of aligners. Additionally, the effectiveness of these aligners was evaluated, and the translation, moments and forces delivered was measured.
Materials and Methods: A typodont model for upper arch with a movable tooth 21 was prepared. A set of two thicknesses ($n = 5$) of SMP aligners (0.8 and 1.0 mm) were fabricated. The model was scanned before and after each treatment. Superimpositions and measurements were done to evaluate tooth 21 movements by the thermal recovery of the aligner. In addition, the translation, moments and forces quantification of the two sets were measured in a customized biomechanical system at different temperatures (37, 45 and 55 °C). For each aligner, force systems and movements were measured experimentally until no further forces or moments were generated by the aligner.
Results: Aligners succeeded to achieve a significant bodily tooth movement (2.5 ± 0.5 mm) on the typodont model which corresponds to measured translation by the system, with insignificant difference between different thicknesses. The mean forces delivered by (0.8 mm) aligners were 0.70 ± 0.22 N at 55 °C, 0.18 ± 0.09 N at 45 °C, and 0.34 ± 0.08 N at 37 °C. The mean forces delivered by (1.0 mm) aligners were 0.58 ± 0.19 N at 55 °C, 0.26 ± 0.14 N at 45 °C, and 0.28 ± 0.07 N at 37 °C.
Conclusions: Clear aligners made of SMPs produce biocompatible forces within orthodontic range capable of teeth movement.

Free Communication Session 16 | 09.06.2019, 11:30–12:30 | Cubicle 1

Themes: Esthetics / Implantology

FC061

Evaluation of Crown Discoloration Induced by Different Calcium Silicate-based Cements

Ayhan Eymirli[1], Emre Nagas[2], Atilla Ertan[2], Ozgur Uyanik[2], Zafer Cehreli[2]
[1]*Endodontics, Dentistry, Ankara, Turkey,* [2]*Hacettepe University Faculty of Dentistry, Ankara, Turkey*

Aim or Purpose: The aim of the present study was to evaluate and compare the long-term tooth discoloration potential induced by different calcium silicate-based cements when used as a pulpotomy medicament.
Materials and Methods: Pulp chambers of ninety freshly-extracted human molars were accessed and cleaned chemo-mechanically to ensure complete tissue removal. The teeth were assigned randomly into 6 groups ($n = 15$/group) according to the calcium silicate-based cement used: Biodentine, MTA Angelus, NuSmile NeoMTA, EndoSequence RRM putty, ProRoot MTA and Negative control (No cement). The test materials were adapted to the pulp floor and the cavities were restored with composite resin. The color was assessed at baseline (before material placement), immediately after filling, and thereafter at 6 weeks, 12 weeks, 1 year and 2 years using the Commission International de I'Eclairage L*a*b* system. The time-dependent change in color, (ΔE), was compared within and among groups using Analysis of Variance.
Results: Angelus MTA and ProRoot MTA presented the strongest visual and numeric changes. There was a tendency for progressive

© 2019 The Authors. International Dental Journal © 2019 FDI World Dental Federation

discoloration during first 3 months, which gradually decreased until the end of readings (2 years).
Conclusions: Based on the present results, Angelus MTA and ProRoot MTA should be used with caution in esthetically critical regions.

FC062

Aesthetic Evaluation of Color Change in Enamel Defects Using Resin-infiltrate

Varinder Goyal[1], Sakshi Bamba[2], Anirudh Goyal[3]
[1]*Pediatric Dentistry, Surendera Dental College & Research Institute, Sri Ganganagar, Giddarbaha, Punjab, India,* [2]*Surendera Dental College and Research Institute, Sri Ganganagar, Rajasthan State, Rajasthan, India,* [3]*Surendera Dental College and Research Institute, Sri Ganaganagar, Rajasthan, India*

Aim or Purpose: To clinically assess the masking of white spots of fluorosis using resin infiltration technique and the change in pretreatment and post-treatment L*A*B values of teeth with fluorosis.
Materials and Methods: 30 samples of maxillary and mandibular permanent anterior with 0.5–2 classification of Dean's index in 6–12 years of children were taken and treated for resin infiltration. Preoperative and postoperative colour shade of initial lesions area and of adjacent sound enamel area of the sample tooth were taken with vita 3D shade guide and corresponding l*a*b values of colour were recorded spectrophotometrically. Change in Colour of masked lesion area was evaluated statistically. Students test was performed to determine statistical significance (using $p < 0.05$) of colour difference using delta E values of different samples. The values obtained were analysed statistically.
Results: Overall colour difference between sound enamel and white spot lesion decreased significantly after treated with resin infiltration. The results of the present study showed significant post treatment results on colour change of white spot lesion ($p < 0.05$).
Conclusions: The masking effect of resin infiltration was dramatic in some cases.

FC063

Injectable Flowable Composite Veneers as Prototypes for Ceramic Veneers

Carlos A. Jurado
Restorative Dentistry, Oregon Health & Science University School of Dentistry, Portland, OR, United States

Introduction: Freehand composite veneer restorations are achievable only for clinicians with artistic skills. Fortunately, there is also a novel option for composite veneers based on the diagnostic wax-up in which flowable composite is transferred to the mouth using a clear matrix.
Case Description: A 30-year-old woman presented to the clinic wishing to improve her smile. Due to the patient's significant esthetic concerns, ceramic restorations from #5 to #12 would not be provided until the composite veneers fulfilled her expectations. Additive diagnostic wax-up was performed and patient was pleased with the diagnostic mock-up. Clear matrix was made based on the diagnostic wax-up. After conventional tooth surface treatment, clear matrix was placed in mouth and flowable composite was injected through access holes on incisal edge. Prepless composite veneers followed the same line angles, embrasure shape and incisal edge position of the diagnostic wax-up. Diagnostic model of the composite veneers was kept. After the 8-month follow-up, patient decided to continue with the final ceramic restorations. Conservative preparations through the composite veneers were made. Technician received the previous models of the composite veneers to follow the contours for final ceramic veneers.
Discussion: Ceramic veneers can be offered without having prepless composite veneers as prototypes, however for patients with high esthetic demands, this conservative approach may fulfill their needs and technician can easily copy the shape of previously accepted composite restorations.
Conclusion/Clinical Significance: Injectable flowable composite restorations have numerous applications in dentistry. This presentation showed a step-by-step approach for veneers restorations that are used as long-term prototypes before final ceramic restorations.

FC064

Effectiveness of Short Implants

Tjahjadi Andy Kusumo
General Dentistry, Andy Kusumo DDS Inc., Anaheim, CA, USA

Introduction: Many studies have shown that short implants have a similar success rate, if not better, than long implants. The author will present two cases of replacing failed long implants with short implants that will support these studies.
Case Description: Case #1 (50-year-old male): Tooth #19 was restored with an unknown long implant in China in 1997. By 2007, the implant was failing due to severe bone loss. The patient came to our office with the original intent of removing #30 and implant replacement. After enjoying a successful short implant (4.5 × 6.0 mm) experience on #30, he requested to replace failed implant on #19.
Discussion: The implant was extracted, the granulation tissue was removed, and bone graft was placed. Three months later a short implant was placed, and the crown was installed after 6 months. The X-rays show that the short implant has no bone loss after two years. Case#2 (78-year-old male): Tooth #19 was restored with an unknown long implant that was splint with #20 implant crown by his previous dentist in 2008. The implant on #19 cracked in 2015. The patient agreed to proceed with a removal plan. The implant was extracted, and bone graft was placed on March 2017.
Conclusion/Clinical Significance: After 4 months, a short implant (4.5 × 6.0 mm) was placed and the crown was installed on Jan 2018. The x-rays show that the short implant has no complication after one year of placement.

© 2019 The Authors. International Dental Journal © 2019 FDI World Dental Federation

Free Communication Session 17 | 09.06.2019, 11:30–12:30 | Cubicle 2

Theme: Prosthodontics

FC065

A 4-year Clinical Evaluation of PEEK and Zirconia Implant Abutments

Pramod Kumar Ayyadan Veettil[1], Vinni Thavakkarakulothuvalappil[2]
[1]*Department of Prosthodontics, Government Dental College, Kozhikode, Kerala, India,* [2]*Government Dental College, Kozhikode, Kerala, India*

Aim or Purpose: The aim of the study was to evaluate the technical, biological, and esthetic parameters of polyether ether ketone (PEEK) implant abutments in restoring single tooth in esthetic zone in comparison with zirconia implant abutments.
Materials and Methods: Forty healthy patients who require replacement of single missing tooth in anterior maxilla and willing to participate in the study were selected from age group 20 to 50 years without any sex predilection. The implant sites were randomly assigned to PEEK abutment group and Zirconia implant group of 20 each. The final restoration was fabricated with injection molded ceramic and cemented with resin cement. Cases were evaluated at following intervals- baseline, 1 year, 2 year and 4 years, for technical, biologic and esthetic parameters. Probing pocket depth (PPD), Plaque control record (PCR) and bleeding on probing (BOP) were the soft tissue parameters. Radiographs of the implants were taken, and bone level was measured referring to the implant shoulder on the mesial and distal sides. The difference in colour of the peri-implant mucosa and the gingiva of the control teeth was assessed with a spectrophotometer. The data were statistically analysed with Mann-Whitney Rank and Students unpaired t-tests.
Result: There is no statistically significant difference in biologic, esthetic and technical parameters between PEEK group and zirconia group for a period of 4 years.
Conclusions: PEEK abutment will be an economic alternative for zirconia abutment considering the biologic, esthetic and technical outcome.

FC066

Influence of Repeating Bleaching Procedure on Surface Roughness of porcelains

Kubra Erdem[1], Muhammed Esad Taha[2], Gulsum Sayin Ozel[3], Ozgun Yusuf Ozyilmaz[2]
[1]*Department of Prosthodontics, Bezmialem Vakif University, Faculty of Dentistry, Istanbul, Turkey,* [2]*Bezmialem Vakif University, Faculty of Dentistry, Istanbul, Turkey,* [3]*Istanbul Medipol University, Faculty of Dentistry, Istanbul, Turkey*

Aim or Purpose: The physical properties of dental restorative materials have a crucial effect on the longevity of restorations and moreover on the esthetic demands of patients, but they may be compromised by bleaching treatments. The purpose of this study was to evaluate the effects of repeating in-office bleaching agents on the surface roughness of various contemporary dental porcelains.
Materials and Methods: 12 specimens were fabricated (10mm × 2 mm) from each groups following; IPS E.max CAD, Vita Enamic, Vita Mark II, GC Cerasmart divided into 4 subgroups. The specimens were applied bleaching agents (Opalescence Boost 40%; OP) for 0 (baseline), 1 (after a day) and 7 (a week after) respectively. Surface roughness (Ra) values of specimens were recorded for baseline and after each bleaching procedures. Roughness measurements were made with using a profilometer. Data were analyzed by One-way analysis of variance (ANOVA) followed by Tukey's honestly significant difference test. $p < 0.05$ was considered significant.
Results: There were statistical difference among in groups; IPS E.max CAD, Vita Enamic, Vita Mark II, GC Cerasmart in terms of Ra ($p < 0.05$). All groups were affected by bleaching agent.
Conclusions: Bleaching agents may falsify on surface roughness dental porcelains for long time use therefore their effects should be well-known and used them for prosthetic carefully.

FC067

Surgical Extrusion: A Reliable Alternative for Saving Damaged Teeth

Ibtissem Grira[1], Boutheina Mahjoubi[2], Raoua Belkacem[2], Adel Amor[2], Nabiha Douki[2]
[1]*Department of Dentistry, Sahloul Hospital, Org 1, Bizerte, Tunisia,* [2]*Sahloul Hospital, Sousse, Tunisia*

Introduction: Increasing numbers of cases of severely damaged teeth have presented at clinics. The etiology may be teeth fractures. With the aim of dental conservation, clinical crown-lengthening procedures may be necessary for these cases to restore biologic width and to ensure adequate dental restoration. One such treatment option available is a surgical extrusion technique.
Case Description: We report the case of a 24 years old, non-smoker male patient, who consulted to restore his right lateral incisor. Clinical examination revealed a horizontal fracture of the maxillary right lateral incisor due to trauma, with a healthy periodontium. The patient was in a good general health and there were no contraindications for surgeries. Root canal treatment was done prior to surgical extrusion. The patient was given a fixed crown after the complete reduction of tooth mobility clinically after 6 months. No root resorption or ankylosis were observed at 6 months post-surgery.
Discussion: Despite of its first description long time ago in 1978, and its multiple benefits in the anterior region, compared to conventional surgical approaches, this technique still remains rarely performed among practitioners. It can be used to successfully treat a grossly damaged crown structure as a result of tooth fracture. Therefore, it is possible to apply the technique described in this case, using minimum and simple armamentarium like a syndesmotome, elevator, forceps, simple interrupted sutures and flexible splinting.
Conclusion/Clinical Significance: A minimally traumatic controlled surgical extrusion technique yielded highly successful results in both functional and esthetic aspects, especially in the anterior region, where esthetics is of a great concern.

© 2019 The Authors. International Dental Journal © 2019 FDI World Dental Federation

FC068

Decementation of All-ceramic Implant Crowns with er:YAG Laser

Kinga Grzech-Lesniak[1], Janina Golob-Deeb[2], Sompop Bencharit[3]
[1]*Oral Surgery Department, Wroclaw Medical University, Wroclaw, Poland,* [2]*School of Dentistry, Virginia Commonwealth University, Richmond, Virginia, United States,* [3]*Virginia Commonwealth University, Richmond, United States*

Aim or Purpose: The purpose of this in vitro study was to evaluate the effect of Er:YAG laser as a non-invasive treatment modality to remove all-porcelain crowns cemented with composite cement on zirconia implant abutments.
Materials and Methods: 20 lithium disilicate crowns were luted onto zirconia prefabricated abutments using composite resin cement. Ten cemented crowns were then removed at 48 hours after cementation as a short-term group (ST), while another 10 were removed 6 months after cementation as a long-term group (LT) o mimicking repetitive recementation and re-removal after 48 hours as an LTR group. The LTR crowns were then again recemented and removed after 48 hours as an LTRR group. Er:YAG laser was used to facilitate the retrieval of these crowns. The irradiation time and laser settings were recorded. Data were analyzed by using ANOVA and t-test. The surfaces of the crown and the abutment were further examined using light microscopy and SEM. Temperature changes as a result of irradiation were measured.
Results: The average time of crown removal from zirconia abutments range from 4 minutes and 42 second in LT to 3 min 24 sec in LTR and 3 min 12 sec in LTRR and ST. LTR took the longest time to remove, statistically ($p < 0.001$). No statistical differences were observed among the removal times of LTR, LTRR and ST. Microscopic and SEM examination of the material surface showed no surface damaging from treatment with Er:YAG laser.
Conclusions: Er:YAG laser is a non-invasive tool to remove cement-retained implant prostheses and should be considered as a viable alternative to rotary instruments.

Free Communication Session 18 | 09.06.2019, 11:30 – 12:30 | Cubicle 3

Themes: Orthodontics / Interceptive Orthodontics

FC069

Dilemma between Premolar Extraction and Airway is there an Answer?

Hana Al Balbeesi[1], Huda A.L. Kuwari[2]
[1]*Pediatrics and Orthodontics, College of Dentistry King Saud University, Riyadh, Saudi Arabia,* [2]*King Saud University, Riyadh, Saudi Arabia*

Aim or Purpose: To assess and compare the changes in pharyngeal airway space dimensions following orthodontic treatment of skeletal class II and class III facial deformities with premolar extraction.
Materials and Methods: Sixty pre and posttreatment lateral cephalometric radiographs of patients who underwent fixed orthodontic treatment with premolar extraction were collected. The sample was divided into two groups – 32 patients with skeletal class II and 28 patients with skeletal class III malocclusion. Both groups were subdivided into growing patients (< 16 years old) and adults (>16 years old). Nasopharyngeal, palatopharyngeal, and glossopharyngeal airway space dimensions were measured in the pretreatment (T0) and posttreatment (T1) cephalometric radiographs using Dolphin Imaging 11.7 software. Two-way, repeated-measures analysis of variance was used to assess the in-treatment changes.
Results: Nasopharyngeal airway dimension showed similar significant increase in class II ($P = 0.042$) and class III ($P = 0.049$) patients from T0 to T1, whereas palatopharyngeal and glossopharyngeal dimensions were insignificantly decreased in both groups. However, both malocclusions followed the same pattern of changes in relation to airway dimensions. In addition, no significant statistical difference was found in the airway spaces between growing and adult patients.
Conclusions: Extraction of premolars did not affect the pharyngeal dimensions except those of the nasopharynx, which showed a significant increase after extraction in both groups.

FC070

Effects of the Facilitator for Maxillary Molar Distalization

Bruce M. Oliver[1], Fady Rayes[2]
[1]*Orthodontist, Dr Bruce Oliver Orthodontic Services, Chateauguay, PQ, Canada,* [2]*Pega Medical, Laval, PQ, Canada*

Aim and Purpose: To evaluate effects of maxillary molar distalization using the facilitator device for correction of Class II malocclusions compared to match untreated control group. Distalization of maxillary molars is often required to resolve antero-posterior dental dysplasia in non-extraction treatment.
Materials and Methods: Twenty devices were placed in ten female patients with mean age of 15 years 7 month following initial levelling and alignment. 10 non-treated Angle Class II orthodontic patients from the AAO Foundation Craniofacial Growth Legacy Collections served as a control. Pre-and post-cephalometric head films and plaster study models were evaluated for amount of molar translation, angular changes and vertical opening. Variables were tested for normal distribution using the Kolmogorov-Smirnov test. The changes observed where analyzed using nonparametric Mann-Whitney U-Test.
Results: Average time for distalization of the maxillary molars to an Angle class I occlusal relationship was 160 days. Group differences were significant for maxillary second molars which distalized 2.3 mm (0.011; $P < 0.05$) and maxillary first molars which distalized 2.5 mm (0.007; $P < 0.05$) as well as for mandibular second molar inclination tipped 2.7° (0.035; $P < 0.05$)
Conclusions: The facilitator appliance is preformed precision telescopic appliance which is adjusted intra orally individually for each patient. The device is compatible with various treatment techniques for correction of antero posterior dento skeletal dysplasias. The data confirms the proof of concept that the device assists in distalization of maxillary molars.

© 2019 The Authors. International Dental Journal © 2019 FDI World Dental Federation

FC071

Accelerated Canine Retraction by Corticotomy-Assisted or Periodontal Distraction

Atia Abdel Yousif[1], Neveen F. Abo-Taha[2], Emad F. Essa[2]
[1]*Orthodontics Department, Faculty of Dentistry, Egypt, Tanta, Al Gharbiyah, Egypt,* [2]*Faculty of Dentistry, Tanta University, Egypt*

Aim or Purpose: creating holes in the alveolar bone will increase bone remodeling rate subsequently canine retraction will be accelerated also Periodontal ligament distraction is another technique for rapid canine retraction; so this study was designed to assess which Technique is better the other.
Materials and Methods: A sample of 20 male orthodontic patients was selected with first premolars extraction protocol included in treatment plane for all patients. The sample was divided into two groups: Group (1): corticotomy group by drilling 3 holes by round surgical bur 2 mm wide and 2 mm apart from each other's alongside mesial and distal to the canine root after flap elevation. Group (2): periodontal ligament distraction group using a custom-made distractor screw fabricated from two-point expander and canine soldered to canine and molar bands. For each patient either corticotomy or distraction was done in one side and the opposite side was used as control. After canine retraction was completed both Techniques were evaluated regarding rate of distal displacement variations in canine angulation.
Results: The surgical side showed higher retraction rate than the non-surgical side by 22% for group (1) and 38.5% for group (2). When the corticotomy side was compared with distraction side the later one showed higher rate of distal canine movement up to double times than corticotomy group.
Conclusions: Periodontal ligament distraction is more effective than corticotomy due to the higher rate of distalization and less chance for anchorage loss. Whenever, corticotomy still effective method for acceleration of tooth movement.

FC072

A New Anoetic Network for Swallowing Rehabilitation

Patrick Fellus
Stomatologie, Robert Debré Hospital Paris, Paris, France

Aim or Purpose: Evaluation of the effectiveness of an anoetic network for rehabilitation of the swallowing through a clinical study made at the University of Lille (France)
Materials and Methods: This independent study has been made on 48 patients between the age of 5 and 16 year old, all of them has been diagnosed with atypical swallowing. The swallowing re-education protocol was held 10 weeks and involved a new passive neuromuscular rehabilitation device: Froggymouth that had to be worn 15 minutes per day in front of the TV. This bottom-up approach modifies the child's proprioceptive stimulus as we can see on functional MRI and the biochemical links between neurons. An additional 2 consultations will be after 5 weeks (T1) and 10 weeks for final evaluation (T2).
Results: After 10 weeks of treatment: 60% of the patients have totally acquired and automatized the new network without any participation of the practitioners, 20% had acquired the new program but not automated it yet, 20% remaining are failures but the study was done by a junior practitioner, discovering this new concept, he will have to give a particular attention to the lips posture.
Conclusions: This new approach of swallowing reeducation using an anoetic device only 15 minutes a day seems more than encouraging for reeducation of swallowing warranting further study.

Free Communication Session 19 | 09.06.2019, 14:30–15:30 | Cubicle 1

Theme: Prosthodontics

FC073

Effect of Surface Roughness and Bacterial Adhesion on Temporary Materials

Burcu Kanpalta[1], Defne Burduroğlu[2], Matteen Rafiqi[2], Umit Kina[2]
[1]*Department of Prosthodontics, Bezmialem Vakif University, Basaksehir, Istanbul, Turkey,* [2]*Bezmialem Vakif University, Istanbul, Turkey*

Aim or Purpose: Temporary restoration applications are important to recover the lost function, phonation and esthetics in the patient during the process of fixed prosthetic restorations. Temporary restorations do not cause bacterial adhesion by preserving oral health. The formation of bacterial accumulation on dental materials may lead to the development of gingival inflammation and secondary caries. The aim of this study is to investigate the surface roughness and bacterial involvement of the materials used in temporary prosthetic restorations in vitro.
Materials and Methods: Revotek LC (GC, South America), Protemp 4 (3M ESPE, Seefeld, Germany), Telio CAD (Ivoclar Vivadent, Schaan, Liechtenstein), CAD Temp monoColor (VITA Zahnfabrik BAD Sackingen, Germany) using materials (n = 10) disk shaped samples (15x1 mm) were prepared. The samples were polished according to the manufacturer's instructions. Surface roughness was measured with a profilometer. Test specimens were covered with artificial saliva and mucin to produce pellicle and examined with a confocal microscope and image analysis program by taking a millimeter area at the center of the surfaces. The results were statistically evaluated by One Way Anova, followed by Tukey HSD test, Pearson correlation, and regression analysis (α=0.05).
Results: The highest surface roughness values were recorded in Revotek LC group. The lowest vital bacterial adhesion was seen in the temporary CAD-CAM groups. ($P < 0.05$).
Conclusions: A positive correlation was observed between surface roughness and bacterial adhesion. For this reason, necessary care should be taken for the construction of temporary restorations and appropriate materials and techniques should be used in their preparations.

© 2019 The Authors. International Dental Journal © 2019 FDI World Dental Federation

FC074

Roughness, Color and Bacterial Accumulation of Ceramic Restorations after Scaling

Fatma Makkeyah[1], Tarek Morsi[2], Marwa Wahsh[2], Amr E-Etreby[3]
[1]Fixed Prosthodontics, British University in Egypt, Cairo, Al Qahirah, Egypt, [2]Ain Shams University, Cairo, Egypt, [3]Future University and Ain Shams University, Cairo, Egypt

Aim or Purpose: To evaluate changes in surface topography of lithium disilicate ceramic after prophylactic periodontal treatment and to correlate the findings to the color stability and bacterial accumulation.
Materials and Methods: Forty disc shaped lithium disilicate samples were constructed according to the manufacturer's instructions and cemented into a cavity prepared onto the labial surface of freshly extracted bovine teeth mounted into acrylic blocks. Manual scaling was then performed using stainless steel (HS), titanium (HT) and plastic (HP) instruments. The surface roughness was measured before and after the scaling procedure using a profilometer and atomic force microscopy. The color parameters were measured before and after scaling and staining procedures using spectrophotometer according to the CIE L*a*b* color order system. The samples were then incubated with Streptococcus mutans suspension. After incubation, the plates with 30 to 300 typical colonies were counted in a colony counter and mean values of colony forming units were obtained (CFU/mL).
Results: The titanium curette showed the highest statistically significant mean values of change in surface roughness (ΔRa), color changes (ΔE) and bacterial count, followed by the stainless steel curette. The plastic curette showed the least statistically significant mean values of change in surface roughness, color changes and bacterial count.
Conclusions: Prophylactic periodontal treatment using titanium and stainless steel instruments induce irreversible alterations of lithium disilicate surfaces which was in direct correlation to the color stability and bacterial count; therefore, dentists should proceed with caution when scaling lithium disilicate surfaces.

FC075

Compressive Strains/Displacements of Specifically Designed Copings for Overdenture Support

Srdan D. Postic[1], Taško Maneski[2], Miloš Milošević[3], Nenad Mitrović[4], Trifković Branka[5]
[1]Prosthodontics, University School of Dental Medicine, Beograd, Serbia, [2]3- University of Belgrade, Faculty of Mechanical Engineering, Belgrade, Serbia, Beograd, Serbia, [3]Innovation Centre of Faculty of Mechanical Engineering University of Belgrade, Beograd, Serbia, [4]The Faculty of Mechanical Engineering, Beograd, Serbia, [5]University School of Dental Medicine of Beograd, Beograd, Serbia

Aim or Purpose: The stresses generated to the supporting tissues during occlusal loading significantly influence design of copings and clinical planning process in therapy by overdentures. The aim of this study was to compare the distributions of strain and displacements on two different designs of copings of the partially edentulous mandible.
Materials and Methods: The experimental models were a partially edentulous mandibles fabricated by standard grey dental model resin (Formlabs) – the 1st one with conventional oval design of the copings and the 2nd one with experimental design of circumferential milled copings. ARAMIS-Automation, Robotics and Machine Intelligence System (GOM mbH, Germany) which is 3D image correlation system of two digital cameras that provide a synchronized view of the specimen and finite element method (FEM) were used.
Results: The most intensive deformations were under working force of the maximum intensity of 100 N. Displacement values of conventional oval copings ranged from −0.45 to + 7.07 mm and for experimental copings from −0.01 to + 0.54 mm. Strains and misses strains have shown that the maximum applied force (100N) resulted in deformations at the final stage for conventional oval copings on supporting surfaces of remaining incisor 3.392%, canine 0.515% and premolar 3.391%, but for experimental milled copings of remained incisor 0.126%, canine 0.102% and premolar 0.125%.
Conclusions: Intensive displacements and strains of tooth (enamel-dentin tissues) were observed below the conventionally designed copings. Strains within the remaining teeth roots were influenced by vertical displacement of the caps with particular sentence at the joint site of the cap and the remaining tooth substance.

FC076

Teenager Patient with Missing Upper Incisors and Deep Overbite

Sunita Sadruddin
Prosthodontics, Fatima Jinnah Dental College and Hospital, Karachi, Pakistan

Introduction: In Deep overbite, Lower front teeth bite into palate. The trouble with super deep bites is that the lower teeth will continue to grow upward and sometimes even cause cuts on the roof of the mouth. As a Prosthodontics, its challenging to replace the missing anterior teeth in teenager patients with deep overbite because patient is in growing age, so only removable prosthesis can be given till the growth is completed.
Case Description: A 16 years old male patient came to the dental hospital with the complaint of missing tooth #8 and fractured tooth#9 (no ferrule was present) which was Root canal treated. On clinical examination, patient was skeletally class I and had deep overbite. Patient was advised orthodontic treatment to correct the malocclusion and then replacement of missing teeth, but patient was not willing to undergo for orthodontic treatment. So considering his age and occlusion, we gave option of an acrylic removable partial denture with labial plate and adams clasp on first permanent molars as an interim prosthesis till the growth completes, so then we can give him implants or fixed- fixed bridge.
Discussion: Using an acrylic removable partial denture with labial plate for patients with deep overbite not only restore the esthetics, but can also decrease the frequent fracture of denture due to lower incisors, as this is more common in patients wearing an acrylic removable partial denture with palatal plate.
Conclusion/Clinical Significance: An acrylic removable partial denture with labial plate can be given in teenager patient with deep overbite as an interim prosthesis, as it does not interfere in occlusion and growth.

© 2019 The Authors. International Dental Journal © 2019 FDI World Dental Federation

Free Communication Session 20 | 09.06.2019, 14:30 – 15:30 | Cubicle 2

Theme: Implantology

FC077

Palatal versus Buccal Antral Approach for Maxillary Sinus Lifting

Omar Hasan
Oral and Maxillofacial Surgery, Org 1, Alexandria, Al Iskandariyah, Egypt

Aim or Purpose: This study was designed for clinical and radiographic evaluation of the maxillary sinus lifting technique using a palatal approach versus buccal approach.
Materials and Methods: This study was carried out as a randomized controlled clinical trial, the study sample included 14 patients. The sample was selected conveniently to fulfill a list of inclusion and exclusion criteria. All patients were divided into two equal groups, had gone maxillary sinus lifting together with implant placement, group1 :(study group) seven patients had sinus lifting through the palatal approach technique simultaneously with implant insertion. In group2 (control group) seven patients had maxillary sinus lifting using buccal antral approach technique simultaneously with implant insertion. Clinical and radiographic evaluation was done through 6 months post-operatively.
Results: Regarding postoperative clinical evaluation, group 1 was superior to that of group 2 in tissue management, because the vestibular anatomy in this group was not altered neither postoperative swelling occurred consequently nor disharmonious soft tissue scarring. Regarding the postoperative radiographic evaluation, group 1 was significantly increased in bone density around dental implants and less marginal bone loss postoperatively, however group 2 had higher vertical amount of bone gained around implants postoperatively.
Conclusions: The palatal sinus lifting approach permitted higher postoperative comfort, less postoperative edema, less marginal bone loss around implants, and higher bone density around implants postoperatively.

FC078

Crestal Lift and Implant Placement: Piezo-Surgery and PRP Approach

Srikanth Narkedamalli
Implant Dentistry, Asmat Dental Medical Center, Abu Dhabi, United Arab Emirates

Introduction: Insufficient bone volume is a common problem occurring during the rehabilitation of the edentulous posterior maxilla with implant supported prostheses. The bone available for implant placement may be limited by the presence of the maxillary sinus together with loss of alveolar bone height and it may be increased by augmentation.
Case Description: This case report presents the rehabilitation of the right maxillary molar region using crestal lift followed by immediate placement by using Piezo-surgery. It helps in reducing the treatment time and increases the patient comfort. Recently, several clinical studies have been performed to evaluate the use of Platelet-rich Plasma (PRP) in maxillary sinus augmentation.
Discussion: Aim of this case report is to evaluate Surgical Procedure of Sinus lifting associated with PRP use and Piezo-surgical technique to elevate Schneiderian Membrane before implant positioning and intrasinusal bone augmentation procedures.
Conclusion/Clinical Significance: Our conclusion is that Piezo-surgery and Platelet Rich Plasma can make sinus lift procedure safer with a slightly faster recovery time. However, it remains a good alternative (worldwide recognized by results) to other procedure only for skilled Practitioner if performed after scheduling a seriously therapeutic Programme. Inclusion criteria, procedural steps and healing time must be strictly observed. Overall, results, encourage us to follow chosen scheme for the future.

FC079

Anticoagulated Patient with Mechanical Aortic Valve Replacement. Flapless Surgery

Alicia B. Prone[1], Daniel Anauch[2], Veronica Arrieta[2], Virginia Borelli[2], Laura Martinez[2]
[1]*Jefa del Servicio Odontologico, Sanatorio Mayo, Cordoba, Argentina,* [2]*Sahloul Hospital, Cordoba, Argentina*

Introduction: High-risk anticoagulated patients, who have mechanical aortic valve replacement, maintain their continuous anticoagulant medication for life. Anticoagulant therapy is recommended with coumarin drugs, such as warfarin (coumadin) and acenocoumarol (sintrom). The new oral anticoagulants are contraindicated. The therapeutic range of the IRN is between 2.5 and 3.5. Flapless surgery for the placement of dental implants is a simplified and predictable favorable surgical technique.
Case Description: Male sex patient of 63 years of age, derived from the cardiology service. He presents systemic replacement mechanical aortic valve and hypertension. Clinically, a thick gingival phenotype is observed. Three dental implants osseotite surface (Biomet-3I) were placed in anterosuperior sector, without anticoagulant suspension (acenocoumarol 4 mg), fibrin thrombi were formed during the surgery, hindering aspiration and access to the bone tissue, so it was decided to perform flapless technique, inserting the implants no flap with precise milling.
Discussion: In anticoagulated patients, it is totally contraindicated to stop anticoagulant therapy, either in primary thrombophilic or complex pathologies for the prevention of thromboembolic events. Coumarin medications do not produce fibrinolysis. In this complex clinical case, due to the formation of large fibrin thrombi, which hindered a conventional surgical technique, it was decided to perform flapless surgery for the placement of dental implants. The response was favorable, and the implants were osseointegrated.
Conclusion/Clinical Significance: The non-suspension of the cumarinic anticoagulant is essential in patients with mechanical aortic valve replacement. When there is fibrin thrombi, the choice of flapless surgery is the appropriate alternative in dental implant placement.

© 2019 The Authors. International Dental Journal © 2019 FDI World Dental Federation

FC080

Studying Stability and Bony Changes among Different Implant Designs

Fardos N. Rizk

Removable Prosthodontics, Faculty of Dentistry, British University in Egypt, Cairo, Al Qahirah, Egypt

Aim or Purpose: This study was conducted to assess the primary stability of Trabecular Metal Dental Implant versus Tapered Screw Vent Implant to determine the appropriate time for their loading by partial overdenture and to follow up for one year the changes in stability and bone height surrounding the implants.

Materials and Methods: The study was performed on forty lower Kennedy class I partially edentulous male patients with age ranging from 35 to 45 years. The British University's Clinical Research Ethics Board approved the research protocol and the informed consent. Each patient received one implant at the second molar area in each side of the ridge, where Trabecular Metal Dental Implant was inserted in the left side (Group I) and Tapered Screw Vent Implant was inserted in the right side (Group II). Primary implant stability quotient was measured using resonance frequency analysis and according to the results early loading of all implants was performed. Patients were followed up for one year clinically to measure secondary implant stability and radiographically to measure bone height changes using cone beam computed tomography.

Results: Both groups showed increase in implant stability and decrease in bone height however, there was statistically significant difference between the two groups where Group I showed higher primary and secondary implant stability values and less crestal bone resorption.

Conclusions: The primary stability of both Implants allow for early loading. Trabecular Metal Dental Implant show higher stability values and is more compatible with bone height changes than Tapered Screw Vent Implant.

Free Communication Session 21 | 09.06.2019, 14:30–15:30 | Cubicle 3

Themes: Oral Medicine / Implantology

FC081

Human Papillomavirus Related Health Literacy for Oropharyngeal Cancer among Healthcare Students

Kamran H. Awan[1], Inderdeep Kaur[2], Hilary Mazzone[2], Aisha Sadaf[2], Hiba Zaku[2]

[1]*College of Dental Medicine, Roseman University of Health Sciences, South Jordan, UT, United States,* [2]*Roseman University of Health Sciences, South Jordan, UT, United States*

Aim or Purpose: The aim of the study was to assess the knowledge, attitude and perception of dental and pharmacy students towards Human Papilloma virus (HPV) and associate risks.

Materials and Methods: A cross-sectional survey was conducted among dental and pharmacy students through random cluster sampling using a self-administered, anonymous questionnaire during May-July 2018. The questionnaire was peer-reviewed and pretested before administration. Approval of the study was obtained from the Institutional Review Board. The questionnaire consisted of 24 items and assessed the knowledge, attitude and perception of dental and pharmacy students towards HPV and associated risks. Data were analyzed using SPSS, with the level of significance set to $p < 0.05$.

Results: A total of 300 students participated in the study. While assessing the respondents' knowledge about HPV, 97.5% and 95.05% dental and pharmacy students reported that they had already heard of HPV, respectively. 65.6% and 44.4% dental and pharmacy students reported a link between HPV and oropharyngeal cancer, respectively. In terms of attitude, 45% dental students and 67% pharmacy students reported not feeling comfortable asking patients about their sexual life. In terms of prevention, 74% dental students and 78% pharmacy students stated that HPV vaccine protect against cervical cancer. However, only 55% of dental students stated that it can protect against oropharyngeal cancer, in comparison to 60% of pharmacy students.

Conclusions: Despite the general awareness about HPV among dental and pharmacy students, the survey revealed poor understanding of health problems associated with HPV, its prevention, possible ways of protection, and patients' education.

FC082

Implant-supported Rehabilitation of Unilateral Maxillectomy: A Case Report

Diana de Macedo[1], Hugo Madeira[2], Marisa Zenha[3], António Mata[2]

[1]*Oral Rehabilitation, Clínica Hugo Madeira, Lisboa, Portugal,* [2]*Clínica Hugo Madeira, Lisboa, Portugal,* [3]*Clínica Marisa Zenha, Porto, Portugal*

Introduction: Reconstruction of maxillectomy defects are challenging and rehabilitation includes a multidisciplinary approach. The prosthodontist tries to restore the stomatognatic functions and achieve a normal orofacial appearance. Treatment includes reconstructive surgery or rehabilitation with obturator prosthesis, both can be associated with osseointegrated implants.

Case Description: A 53-year-old female patient with difficult mastication and speech articulation, had a right maxillectomy due to tumor 10 years earlier, with unilateral maxillary resection. Based in clinical findings, three implants were placed in left maxilla and an implant-supported obturator with bar-attachment retention, since bars that connect directly to implants have highest success rate.

Discussion: Surgical resection is the most common approach for patients with malignant tumors in the maxilla. Depending on the defect extent and morphology, various treatment modalities are available. Prosthetic and surgical rehabilitation can be proposed to improve the function and esthetics. Maxillary obturator for edentulous patients can be challenging due to retention and support lack. Implants can provide considerable retention and support, and reconstruction of maxillary defects. Factors for choosing treatment plan includes defect extent and size, number and quality of teeth, and bone quality. A retained implant obturator prosthesis could be indicated, as long as the bone quality and quantity is adequate for

© 2019 The Authors. International Dental Journal © 2019 FDI World Dental Federation

implants fixation. For successful prosthetic rehabilitation, the obturator must have adequate support, stability, and retention.
Conclusion/Clinical Significance: Several advantages can be achieved with obturators such as replacing teeth and soft and hard tissues. Moreover, it enhances the facial appearance and provides face tissues support and also permits clear vision and may be early detection of tumor recurrence.

FC083
Fully Digital Bone Reduction and Immediate Implants in Full-arch Rehabilitation
Hugo Madeira[1], Diana de Macedo[2], António Mata[2]
[1]*Implantology, Clínica Hugo Madeira, Lisboa, Portugal,* [2]*Clínica Hugo Madeira, Lisboa, Portugal*

Introduction: A fixed full-arch prosthesis allows skeletal Class II cases rehabilitation, correcting the dental intermaxillary relationship. The digital workflow enables planning implant placement in the ideal position, allowing better results in complex cases, surgically and prosthetically.
Case Description: Two patients, with no relevant medical history, with periodontal and functionally compromised teeth and severe skeletal Class II with vestibular compensation of the anterior-superior teeth. This case series is novel since it was full digitally planned and executed at surgical and prosthodontic levels. The rehabilitation and implants placement in ideal position from a prosthetic and surgical levels was digitally planned and performed through bone reduction and placement of fully guided implants. The follow-up was performed, and functional parameters and aesthetic results were considered and no postoperative or prosthetic complications were found.
Discussion: Digital planning allows the prosthesis to be planned and designed prior to surgery, allowing an immediate protocol. CAD-CAM technology enables a more accurate and less invasive procedures and better results. When compared with conventional approach, guided surgery also allows a lower risk of biological and/or technical complications.
Conclusion/Clinical Significance: The precision of guided surgery compared to one without surgical guide allows a more correct positioning of the implant and less risk of biological complications, less invasive procedures, time of treatment and better prosthodontic result.

FC084
Demands in Implant-prosthetic Rehabilitation of the Particular Cases of Edentation
Norina Forna[1], Doriana Agop Forna[2]
[1]*Removable Prosthetic, Faculty of Dentistry of University of Medicine and Pharmacy "Grigore T. Popa", Iasi, Romania,* [2]*Faculty of Dentistry of University of Medicine and Pharmacy "Grigore T. Popa" Iasi, Iasi, Romania*

Introduction: The lateral edentation with severe alveolar bone resorption, represents great challenge for dental surgeons and implant specialists. Failure to optimize alveolar bone rehabilitation, implants positioning, morphology of soft tissues, and biomechanical factors will reduce drastically the rate of long-term success of implant therapy.
Case Description: The clinical case is represented by a patient with extended bimaxillary edentation associated with severe crestal bone resorption. An expert system was used to analyze the clinical and biological indices at baseline and after the pro-prosthetic and pro-implant stages. The software application DDS Implants Software (JST, Poland) was used for the virtual planning of the guided bone regeneration procedures, the positioning of the future implants (associated to CAD-CAM manufacturing of the drill guide) and for the planning of the prosthetic structure design. The 24-months follow-up of the case showed good clinical performance, peri-implant bone response and soft tissues healing.
Discussion: A multidisciplinary approach was used to obtain long term esthetic outcomes and functional recovery for the presented clinical case. The therapeutic approach based on traditional clinical and paraclinical analysis of the case and manufacturing of the classic surgical guide may predispose to failed positioning of implants and inaccurate biomechanical analysis of the case. The digital implantology can improve functional and esthetic results as well as the implants survival rate.
Conclusion/Clinical Significance: A combined classic and digital approach of the implant treatment represents the solution of choice in the modern implant-prosthetic therapy.

POSTER SESSIONS 07-12

Poster Session 07 | 09.06.2019, 13:30–14:30 | Screen 1

Theme: Materials

P031
An Investigation on Nano-leakage of Two Different Universal Adhesives
Nayera Hassanien Abdelaal[1], Nermine Hamza[2]
[1]*Operative, Modern Sciences and Arts University, Giza, Egypt,* [2]*Modern Sciences and Arts University, Cairo, Egypt*

Aim or Purpose: Study was designed to investigate the resin/dentin interface nano-leakage.
Materials and Methods: Two universal adhesives and one nano-hybrid resin composite were used. Ten freshly extracted human third molars were examined; 40 dentin specimens were retrieved for nanoleakage evaluation and randomly assigned into two main groups according to type of adhesive, then further sub-divided into two subgroups according to mode of application (10 specimens/each group); Group (1) (G-permio/SE), Group (2) (G-permio/ER), Group (3) (Futurabond/SE) and Group (4) (Futurabond/ER). Each adhesive was applied according to the manufacturer instructions. Dentin/composite specimens were stored in distilled water for 24 hours then finished under ascending grits of sof-lex discs. Each specimen was then immersed in silver nitrate tracer solution in a light proof container for 24 hours. After 24 hours, specimens were rinsed then immersed in developer solution under fluorescent light for 8 hours then rinsed. The specimens were sectioned perpendicular to the bonded surface into approximately 1-mm thick slabs. Slabs were imaged using SEM and the amount of silver granules were quantified using the NIH Image J V1.56 software program.

© 2019 The Authors. International Dental Journal © 2019 FDI World Dental Federation

Results: There was a significant increase ($p < 0.001$) in percentage area of nanoleakage; G-permio bond mean values were higher than Futurabond mean values when used in both ER mode or SE mode.
Conclusions: It was concluded that the pretreatment of dentin specimens using 37% phosphoric acid prior the application of universal adhesives had an adverse effect on the nanoleakage percentage and the pattern of both adhesives which was more significant with the 10-MDP containing universal adhesive.

P032
Effect of C-factor on Microleakage of Sonic-activated Nanohybrid Composite Restorations
Ebaa Alagha
Restorative Department, Al-farabi Private Colleges in Jeddah, Jeddah, Egypt

Aim or Purpose: This study was conducted to evaluate the effect of different cervical cavity configuration with bulk fill placement technique of class V composite restorations on microleakage.
Materials and Methods: A total of thirty upper single rooted premolars were divided into three main groups according to the cavity shapes (dish, U and wedge) prepared in the cervical area of the tooth. Teeth were immersed in a freshly prepared methylene blue solution for four hours then were vertically sectioned through the center of the restoration in bucco-lingual direction then examined under stereo-microscope at 45 X magnification interface.
Results: It was found that wedge shape group recorded statistically significant highest leakage% mean value followed by U shape group meanwhile dish shape group recorded statistically significant lowest leakage % mean value.
Conclusions: Cavity configuration is a crucial factor in microleakage formation being more pronounced in wedge shaped cavities.

P033
Solubility and Bond Strength of Polydimethylsiloxane-gutta Percha Calcium Silicate-containing Sealer
Mennatullah M. Khalil[1], Mai Abdelrahman[2], Sara El Mallah[3]
[1]Dental Biomaterials, Fayoum University, Cairo, Egypt, [2]MSA University, Cairo, Egypt, [3]Fayoum University, Cairo, Egypt

Aim or Purpose: This study was to evaluate the bond strength and solubility of a novel polydimethylsiloxane-gutta-percha calcium silicate-containing root canal sealer and compare it to traditional zinc oxide and eugenol sealer.
Materials and Methods: The endodontic sealers used in this study were polydimethylsiloxane-gutta-percha calcium silicate-containing sealer and zinc oxide and eugenol sealer. The solubility was tested according to ADA specification no.57 at 3 different time intervals 1, 7 and 14 days. The bond strength was assessed using push-out bond strength in 3 root segments: coronal, middle and apical.
Results: The solubility was significantly lower on day 1 and 7 in the polydimethylsiloxane-gutta-percha calcium silicate-containing sealer and on day 14 the difference in solubility was insignificant. The push-out bond strength in all root segments was significantly lower in the polydimethylsiloxane-gutta-percha calcium silicate-containing sealer.
Conclusions: The solubility of the set polydimethylsiloxane-gutta-percha calcium silicate-containing sealer was significantly lower than the zinc oxide and eugenol sealer on day 1 and 7. The solubility of both sealers on all 3 time periods was within the recommended ANSI/ADA levels. The polydimethylsiloxane-gutta-percha calcium silicate-containing sealer showed lower bond strength values when compared to the zinc oxide and eugenol sealer. The low bond strength values of the novel polydimethylsiloxane-gutta-percha calcium silicate-containing sealer may compromise its performance in the clinical setting.

P034
Evaluation of Properties of a Dental Cement Modified Using Phytomedicine
Lamia Singer[1], Gabriele Bierbaum[2], Christoph Bourauel[3], Katja Kehl[2]
[1]Oral Technology, University Hospital of Bonn, Bonn, Nordrhein-Westfalen, Germany, [2]Institute of Medical Microbiology, Immunology and Parasitology, University Hospital of Bonn, Bonn, Nordrhein-Westfalen, Germany, [3]University Hospital of Bonn, Bonn, Nordrhein-Westfalen, Germany

Aim or Purpose: To enhance the antimicrobial properties of Glass-ionomer cement (GIC) through its modification with mixture of three plant extracts to be evaluated along with a 0.5% Chlorohexidine (CHX)-modified GIC with regard to biological, compressive strength and film thickness properties.
Materials and Methods: Conventional GIC (freeze-dried version) and CHX were used. Alcoholic extracts of Salvadora persica, Olea europaea and Ficus carcia leaves were prepared separately using Soxhlet extractor for 12 hours. Then prepared extracts were mixed at specific concentration of each and then added in three different proportions to the water of mixing of GIC (Group 1:1, 2:1 and 1:2). Specimens were then prepared and tested against the unmodified GIC (control) and the 0.5% CHX-modified GIC (CHX-GIC). Antimicrobial activity was evaluated using agar diffusion assay against *Micrococcus lutes* (*M. luteus*) and *Streptococcus mutans* (*S. mutans*). Compressive strength and Film thickness were evaluated according to ISO 9917-1:2007.
Results: Antimicrobial activity results showed significantly higher inhibition zones for all extract-modified groups against both bacterial strains compared to the unmodified control group. Moreover, CHX-GIC group showed statistically comparable results with the 2:1 group. For compressive Strength, the 2:1 group showed statistically highest mean values compared to the other tested groups. There was no significant difference between all tested groups with regard to the film thickness of GIC.
Conclusions: The plant extracts enhanced the antimicrobial activity against *S. mutans* and *M. luteus* without adversely affecting the film thickness of the GIC while, Compressive strength was improved with the higher extract concentration. Further tests with respect to other bacterial strains and applicability in dental practice will be performed.

© 2019 The Authors. International Dental Journal © 2019 FDI World Dental Federation

P035

Quantitative Microleakage Analysis of Etch-and-Rinse versus Self-adhesive Resin Cements

Deoggyu Seo[1], Yoon Yi[2]

[1]*Department of Conservative Dentistry, Seoul National University, Seoul, Republic of Korea,* [2]*Wonju Severance Hospital, Seoul, Republic of Korea*

Aim or Purpose: The purpose of this study was to analyze the sealing ability of dentin and ceramic specimens filled with etch-and-rinse and self-adhesives resin cements in a five-week period using fluid transport and lipopolysaccharide (LPS) penetration models.
Materials and Methods: Standardized round holes (dia: 1 mm and depth: 2 mm) were cut on 12 ceramic disks made from ceramic blocks (IPS Empress CAD, Ivoclar Vivadent). These were randomly assigned to two groups (n = 6): Group I -etch and rinse resin cement (Variolink II, Ivoclar Vivadent) and ceramic specimens, Group II- self-adhesive resin cement (SmartCem2, Dentsply Sirona) and ceramic specimens. The specimens were filled with resin cements using the technique recommended by the manufacturer and underwent thermocycling (10,000, 5–55). The sealing ability of all samples was evaluated using the LPS penetration models. The samples were analyzed by a spectrophotometer using Limulus amebocyte lysate assay kit during five weeks.
Results: Group I showed less LPS penetration in comparison with Group II. Group I presented the best sealing ability over the study period. LPS leakage was detected from the beginning in Group II.
Conclusions: Variolink II, which is an etch-and-rinse resin cement, had better sealing ability than SmartCem2, which is a self-adhesive resin cement, when tested in a leakage model for LPS as a major virulence factor from bacteria in ceramic block interface.

Poster Session 08 | 09.06.2019, 11:30–12:30 | Screen 2

Theme: Prosthodontics

P036

Effect of Thermomechanical Load-cycling on Bond-strength of ZLS-glass-ceramics to Resin-cement

Basem N. Alturki[1], Badi Alazhari[2], Thamir Bahattab[3], Zoubayda Alazhari[4]

[1]*Dentistry Department, Ministry of Health of Saudi Arabia, Jeddah, Al Madinah, Saudi Arabia,* [2]*Ministry of Health of Saudi Arabia, Madinah, Saudi Arabia,* [3]*Ministry of Health of Saudi Arabia, Jeddah, Saudi Arabia,* [4]*Prince Sultan Armed Forces Hospital, Madinah, Saudi Arabia*

Aim or Purpose: The aim of this study was to evaluate the effect of a combined thermal and mechanical load cycling on adhesion values of zirconia-reinforced lithium silicate glass-ceramics with those of lithium disilicate.
Materials and Methods: Zirconia-reinforced lithium silicate (vita suprinity; SV) and lithium disilicate glass-ceramics (IPSe.max CAD; EM) were the materials used in this study. Specimens with the required dimensions for microtensile bond strength test were prepared and finished following the manufacturer's recommendations. The specimens were divided into two groups: control group that was stored in distilled water at 370C for 24 h (without thermomechanical load cycling) and test group (with thermomechanical load cycling). A total of 3000 thermal cycles and 100,000 mechanical loading cycles were performed. Microtensile bond strength of each material were evaluated before and after thermomechanical load cycling. Moreover, additional analyses such as those involving scanning electron microscopy, atomic force microscopy, and contact angle determination were performed to compare their adhesive potential. Data were analyzed using independent t-tests between the two glass ceramic groups, and paired t-test was used to detect significance within each group "with" and "without" thermomechanical cycling.
Results: The effect of thermomechanical cycling on microtensile bond strength was statistically significant for both types of glass-ceramics $P < .001$ (EM and SV). Regarding the effect of thermomechanical cycling, the most frequent failure type was mode I (adhesive failure between cement and ceramic type) with pronounced effect on EM (66.67%) than on SV (40%).
Conclusions: SV glass ceramics showed higher bonding values than EM glass-ceramics after thermomechanical load cycling.

P037

Influence of Smoking on Failure Rate of Dental Endosseous Implants

Bader K. AlZarea

Prosthetic Dental Sciences, College of Dentistry, Jouf University, Kingdom of Saudi Arabia, Sakaka, Saudi Arabia

Aim or Purpose: The use and remarkable success of endosseous implants has led to an interest in identifying the factors associated with implant failure. The aim of the present study was to evaluate the influence of smoking on the failure rate of dental endosseous implants.
Materials and Methods: The present study included 146 patients (smokers and nonsmokers) with a total of 352 implants. The study included 89 males and 55 females. Statistical analysis was done using Z-proportionality test and Chi-square test. The statistical significance was set at 5% level of significance ($p < 0.05$).
Results: Out of a total of 352 implants, males (73.58%) had higher implants as compared to females (26.42%). The failure rate in smokers was 41.83 % and in nonsmokers was 24.01%. Twenty-four (48.97%) of the smokers with < 10 years of duration had implant failures and 25 (51.03%) of smokers with > 10 years of duration had implant failures as compared to 61 (24.01%) of non-smokers who had implant failures. This difference was statistically significant ($p = 0.0001$). Statistically significant difference was also observed in the association between the number of packets of cigarettes smoked with nonsmokers ($p = 0.0001$). Higher implant failures were observed in the posterior mandible (61.2%) and in implants with length < 10 mm (77.5%) in smokers.
Conclusions: Even though smoking has not been contraindicated with dental implants, but the findings of the present study suggest that it has a significant effect on survival of implants.

© 2019 The Authors. International Dental Journal © 2019 FDI World Dental Federation

P038

An Overdenture Treatment of a Young Patient: A Case Report

Emel Arslan[1], Abdurrahman Şahinbas[2]
[1]*Department of Prosthodontics, Bezmialem Vakıf University, Istanbul, Turkey,* [2]*Bezmialem Vakif University, Istanbul, Turkey*

Introduction: The overdenture treatment uses a removable complete denture that overlies retained teeth, tooth roots, or dental implants. Two or more, coronally modified or restored remaining teeth have been treated with root canal therapy and are used as abutments for an overdenture. Retained root abutments can give better retention, support, and stability to an overdenture and also provide proprioception which would otherwise be lost with conventional denture treatment. Implant retained prosthesis is an option but is sometimes not possible due to an insufficient amount of bone or economic reasons.
Case Description: A 17-year-old young female reported to the Department of Prosthodontics, Bezmialem Vakıf University with a chief complaint of aesthetics due to missing upper and lower teeth and difficulty in mastication. Dental history revealed that teeth were due to calcium deficiency missing. 13, 23, 33 and 43 were prepared for the fabrication of telescopic copings. The maxillary and mandibular arch were restored with an overdenture.
Discussion: Prosthodontic rehabilitation of cases like partial anodontia is critical during the growth period. During this period implant supported dentures is an option but is sometimes not possible due to an insufficient amount of bone, undesirable effects on growth and development or economic reasons.
Conclusion/Clinical Significance: Overdenture provides sufficient aesthetic, function and phonation even when the patient has weak teeth and tissue. Prosthodontic rehabilitation of complete or partial boosts psychologically the morale of the patients more so when the individual is of younger age. It is important to use this treatment option to prevent tooth and surrounding tissues until the patient completes growth and development.

P039

Assessment of Brittleness Index of Three Different Ceramic Blocks

Mahitab M. Mansour
Dental Biomaterials, Modern Sciences and Arts University, Cairo, Egypt

Aim or Purpose: The aim of this study was to assess the brittleness index of zirconia reinforced lithium silicate ceramic, translucent zirconia and lithium disilicate glass ceramic blocks, by measuring the fracture toughness and hardness.
Materials and Methods: A total of thirty-nine rectangular specimens were cut form the following ceramic blocks: Zirconia reinforced lithium silicate ceramic, translucent zirconia and lithium disilicate glass ceramic. The specimens were in the pre-crystalline and pre-sintered stages (n = 13/ceramic material). Fracture toughness (KIC) and hardness (H) were measured and brittleness index (B) was then calculated according to the following equation B = H/KIC.
Results: The lithium disilicate blocks showed the highest values for brittleness index (0.24 μm-1/2), followed by the zirconia reinforced lithium silicate blocks (0.22 μm-1/2), whereas the translucent zirconia showed the least value for brittleness index (0.05 μm-1/2).
Conclusions: The Translucent zirconia revealed the lowest brittleness index, indicating that it might have superior machinability.

Poster Session 09 | 09.06.2019, 11:30–12:30 | Screen 3

Themes: General Dentistry / Epidemiology

P041

Children and Parents Preferences of Dentists Attire

Joycelyn O Eminue[1], Sylvia Etim[2]
[1]*Child Dental Health, University of Port Harcourt, Port Harcourt, Nigeria,* [2]*University of Port Harcourt, Port Harcourt, Nigeria*

Aim or Purpose: To evaluate children and parental preferences towards dentists' attire.
Materials and Methods: A 32-piece interviewer-based questionnaire was used to obtain information on socio-demographic status of children/their parents and their preferences. Also, elicited, were information based on photographs showing male and female doctors with different attires and personal protective wears. The data was analyzed using SPSS version 23 and statistical significance set at $p < 0.05$.
Results: One hundred and fifty-nine children comprising 85 (53.5%) males and 74 (46.5%) females were assessed with a mean age of 10.34 (± 3.28) years. Sixty-nine (43.4%) parents were indifferent to the gender of the dentist that managed their children, unlike their children/wards (54.1%) that preferred female dentists and there was statistical significant difference in gender preference between the male and female participants ($p = 0.00$). The children (47.8%) and parents (47.2%) preferred a dentist who donned protective wears (coat, face mask and protective glasses), all the children and their parents wanted their doctors to wear a protective coat and majority [121 (76.1%) children and 134 (84.3%) parents] preferred the traditional white coat because of professionalism 26 (30.6%) and purity/cleanliness 36 (42.4%).
Conclusions: Children and parents have preferences regarding the dentist's attire. The traditional white coat was the most preferred dental attire.

P042

Snapshot of Oral Health Related Taboos among South Indian Tribes

Venkat Ramana Baddam, Vikram Simha Bommireddy, Lalith Prakash Chandra Kantheti, Krishna Prasad Lingamaneni, Devaki Talluri, Suresh chand Yaddanapalli, Srinivas Ravoori
Sibar Institute of Dental Sciences, Takkellapadu, Guntur, Andhra Pradesh, India

Aim or Purpose: Health being a biological and social entity makes an important contribution to economic progress. Though we live in 21st century still many underserved communities are lacking to adopt healthy lifestyles. One of many reasons would be religious convictions like taboos, myths or misbeliefs. This study aims to

© 2019 The Authors. International Dental Journal © 2019 FDI World Dental Federation

comprehend the myths and misconceptions among south Indian tribal adult population.
Materials and Methods: A cross sectional study was conducted among 151 tribal respondents who were selected by convenience sampling. A valid questionnaire was used to quantitate about social myths and taboos. Pearson's Chi-Square and descriptive statistics were applied to the collected data and level of significance was set at $p \leq 0.05$ for the tests.
Results: 50% of males and 70.5% of female respondents believe that clove relieves toothache. Over all 35.7% of the respondents felt that there are worms inside the decayed teeth. 40.3% of respondents perceived that professional cleaning of the teeth causes loosening of the teeth A statistically significant difference was obtained for taboos between males and females respondents ($p < 0.05$).
Conclusions: Most of the misbeliefs were seen among illiterates and rural population. So, there is a need to improve the level of education as well as knowledge related to health, among these groups for overall improvement of health-related quality of life.

P043
Caries Prevalence of Six-Year-Old Children in China
Wensheng Rong[1], Zhaoyou Wang[2]
[1]Preventive Dentistry, Peking University School and Hospital of Stomatology, Beijing, China (People's Republic), [2]Peking University School and Hospital of Stomatology, Beijing, China (People's Republic)

Aim or Purpose: To investigate the prevalence and contributing factors of dental caries in 6-year-old children in four regions of China.
Materials and Methods: A randomized cluster sampling method was employed. All 6-year-old first grade children from the selected schools were invited to receive an oral examination. Caries were diagnosed according to the WHO criteria. The erupting first permanent molars were recorded using the modified ICDAS. Questionnaires assessing children's oral health-related behaviors and their caretakers' oral health awareness and attitudes were completed by the children's parents or guardians.
Results: Overall, 4,936 6-year-old school children participated in the survey. The prevalence of caries among these children was 87.7%, with a mean number of decayed, missing and filled teeth of 6.04 (SD, 4.24). In primary dentition, the caries prevalence was 87.7%, and the mean dmft score was 6.01 (SD, 4.22). In permanent dentition, the caries prevalence was 2.0%, the mean DFS score was 0.04 (SD, 0.31). All permanent dental caries occurred on the first permanent molars. Carious tooth surfaces were identified as modified ICDAS code "A" to indicate initial caries and distinct visual change in enamel. The mean D_AS score of non-cavitated caries in the first permanent molars was 0.18 (SD, 0.67). Logistic regression analysis showed that regional and gender factors were significantly related to the caries experience of these children.
Conclusions: The 6-year-old children from four regions of China had sever primary dental caries and the first permanent molars were at high risk for dental caries. It is critical to protect permanent teeth from caries as early as the eruption of the first permanent molars.

P044
Psychological Disorder May Correlate with Halitosis
Wei Ye[1], Yu Zhang[2]
[1]Department of Preventive Dentistry, Ninth People's Hospital, Shanghai Jiao Tong University, School of Medicine, Shanghai, China (People's Republic), [2]Ninth People's Hospital, Shanghai Jiao Tong University, School of Medicine, Shanghai, China (People's Republic)

Aim or Purpose: To investigate the differences on psychological condition between participants with and without halitosis.
Materials and Methods: A total of 122 participants (66 with halitosis and 60 without halitosis) aged 18–55 years, were recruited in this study. The Ethics Committee of the People's 9th Hospital of Shanghai Jiao Tong University's School of Medicine reviewed and approved this study. Participants who complained of oral malodor were measured by an organoleptic assessment, and those scored 2 or greater were diagnosed as halitosis and included into the halitosis group, while participants who didn't perceive oral malodor and diagnosed without halitosis were included into the control group. Self-reporting Inventory (SCL-90) and Oral Health Impact Profile-14 (OHIP-14) questionnaires were used to collect the psychological condition data. SPSS19.0 was used for data analysis.
Results: The halitosis group showed significantly high SCL-90 scores and OHIP-14 scores than the control group ($p = 0.003$, 0.002, respectively). Interpersonal sensitivity, anxiety, depression, paranoid ideation were found significantly related with halitosis. Psychological disorder was found to be the greatest influencing domain.
Conclusions: Participants with halitosis may have a worse psychological condition than those without halitosis. The close relationship between psychological condition and oral health-related quality of life should be paid more attention to.

© 2019 The Authors. International Dental Journal © 2019 FDI World Dental Federation

Poster Session 10 | 09.06.2019, 14:30–15:30 | Screen 1

Themes: Orthodontics / General Dentistry

P046

Using Platelet Rich Plasma in Reducing Alveolar Bone Resorption during RME

Eyad Alomari

Orthodontics & Dentofacial Orthopedics, Damascus University, Damascus, Dimashq, Syria

Aim or Purpose: To evaluate the effectiveness of Platelet Rich-Plasma (PRP) with its growth factors in minimizing the side effects of Rapid Maxillary expansion (RME) on the periodontal tissue of anchoring teeth using Cone-Beam Computed Tomography (CBCT).
Materials and Methods: A randomized, split-mouth clinical trial was conducted on 18 patients aged between 12–16 years (14 ± 1.65) with a skeletal maxillary constriction, underwent RME using Hyrax appliance. The sample was randomly divided into two groups; (Intervention and control sides). PRP was prepared and injected on the buccal aspect of supporting teeth in the intervention group. High resolution CBCT image (H-CBCT) has carried out pre-operatively (T0) and after 3 months of retention (T1) to study the buccal bone plate thickness (BBPT) and buccal bone crest level (BBCL) of anchoring teeth. Changes induced by expansion were evaluated using Paired sample t-test ($P < 0.05$).
Results: Results showed that there was no statistical significant of BBPT and BBCL between the two groups after RME ($P > 0.05$). The prevalence of dehiscence and fenestrations was increased at (T1) in both groups and the percentage was higher in the PRP group.
Conclusions: RME induced a vertical and horizontal bone loss. Besides, PRP did not minimize alveolar defects after RME.

P047

Stability of Customized Miniplates Implantation Guided by Surgical Template

Yuxing Bai

Orthodontics, School of Stomatology, Capital Medical University, Beijing, China (People's Republic)

Aim or Purpose: To develop customized miniplates and surgical templates for miniplates implantation based on cone-beam CT (CBCT) images and to evaluate the safety and stability of implantation guided by the template.
Materials and Methods: Twenty class III subjects who were in prepubertal or pubertal skeletal growth periods were included in the study. For each subject, two customized miniplates were designed according to the positions of roots and tooth germs. Meanwhile, surgical templates were designed according to the virtual implantation plans and positioned through maxillary posterior teeth. Then, three dimensional (3D) printed customized miniplates and surgical templates, and implanted miniplates under the guidance of template as anchorage for maxillary protraction. Postoperative CBCT scans were taken to evaluate the implantation safety and the stability of miniplates.
Results: The surgical templates were successfully positioned and remain stable during the implantation. No root damage was found from the postoperative CBCT scans. All the forty miniplates kept stable during the maxillary protraction process while the orthodontic load applied to each miniplate was estimated to be 500 to 600 g.
Conclusions: Customized miniplates implantation guided by surgical templates was safe and stable, and could sustain a larger force than miniscrews. The risk of implanting miniplates were decreased by the design of customized miniplates and the guidance of surgical templates.

P048

Evaluation Maxillator and Dynamax Appliance in Patients with Distal Malocclusion

Rena Q. Aliyeva[1], Zaur Novruzov[2], Zohrab Garayev[2]

[1]*Pediatric Department, Azerbayjan Medical University, Baku, Azerbaijan,* [2]*Azerbaijan Medical University, Baku, Azerbaijan*

Aim or Purpose: The aim of the study was to analyze the effect of the Maxillator and Dynamax appliances on the sagittal maxillomandibular relationship during the treatment of distal malocclusion.
Materials and Methods: The study was performed on 3 groups of patients with skeletal distal bite anomaly. Group 1 consisted of 23 (11 boys, 12 girls) patients with a mean age of 11.6 who were treated with Maxillator appliance, 22 (10 boys, 12 girls) patients with a mean age of 11.6, treated with Dynamax appliance made the 2nd group and in the 3rd untreated control group were 27 patients (14 boys, 13 girls) with a mean age of 11.9. To estimate changes of the maxillomandibular ratio in patients before and after treatment, in the control group were analyzed lateral cephalometric X-rays with interval of two years.
Results: The findings show that the increase in the size of the maxillary and mandibular bones is the same both in treated and untreated groups. The effect of Dynamax appliance on the dentoalveolar structures and its maxillary bone sagittal growth restriction effect is higher than that of Maxillator appliance.
Conclusions: Effects of Maxillator and Dynamax activators in the correction of the maxillomandibular sagittal relationship are nearly the same.

P049

Effectiveness of Enzyme Dentifrice in the Orthodontic Patients

Hsin-Chung Cheng[1], Hao-Ting Hu[2], De-Shing Chen[2], Shu-Wen Hsu[2], Chin-Chia Yeh[2]

[1]*College of Oral Medicine, Taipei Medical University, Taipei City, Taiwan (Republic of China),* [2]*Taipei Medical University, Taipei City, Taiwan (Republic of China)*

Aim or Purpose: Plaque accumulation and white spot lesion are associated with fixed orthodontic appliances. Some studies indicated additional benefits provided with enzyme-containing dentifrices in non-orthodontic patients. The purposes were to evaluate the effects between enzyme-containing dentifrices and conventional dentifrices on orthodontic patients.

© 2019 The Authors. International Dental Journal © 2019 FDI World Dental Federation

Materials and Methods: This clinical trial was approved by TMU-Joint Institutional Review Board. White spot lesion index (WSL), gingival bleeding index (GBI) and visible plaque index (VPI) were recorded in 55 orthodontic patients (32 females and 23 males, mean age: 22.9 ± 4.6 years) in Taipei Medical University Hospital from 2017 to 2018. They were randomly divided into 4 groups and assigned to use the dentifrices during the first three months of the orthodontic treatment. Group 1 dentifrice contained amyloglucosidase and glucose oxidase. Group 2 dentifrice contained 1450 ppm fluoride. Group 3 dentifrice contained 0.2% chlorhexidine. Group 4 dentifrice contained natural ingredients. Wilcoxon signed-rank test was used to compare the variables between before and after the experiment within each group. The level of significance was established at $P < 0.05$ for statistical tests.
Results: Baseline values for WSL, GBI, and VPI were no significant difference among the 4 groups. After the experiment, WSL was significantly increased in group 4, and GBI was significantly decreased in group 2 and 3, and VPI was significantly decreased in group 1, 2 and 3.
Conclusions: From the results of this study, it is suggested that the use of enzyme-containing dentifrice resulted in beneficial clinical effects on plaque accumulation after placement of fixed orthodontic appliances.

P050

Formulating Aesthetic Ratios for Replacement of Maxillary Anterior Teeth

Thiri Kyaw[1], Shwe Hlaing[2]
[1]*Department of Prosthodontics, University of Dental Medicine, Mandalay, Yangon, Myanmar (Burma),* [2]*University of Dental Medicine, Yangon, Myanmar (Burma)*

Aim or Purpose: An important element of prosthetic treatment for edentulous patient is selecting the size and form of anterior artificial teeth that will restore the natural harmony of dentofacial structure. Although various guidelines for anterior teeth selection have been examined in a number of studies, most of them were intended for white subjects. The purpose of the study was to determine the facial form and tooth size, form, dimensional (width-to-length) ratio of maxillary central incisor teeth in Myanmar population as an aesthetic guide for selection of maxillary anterior teeth.
Materials and Methods: A total of 404 subjects comprising male and female were studied. Their age ranged from 18 to 25 years with the mean age of 22 years. Cast measurements were made with digital caliper having a resolution of 0.01 mm. Facial form measurements were done by Trubyte Tooth Indicator (TTI) in 64 subjects.
Results: The mean values for anterior teeth dimensions were: Incisor Width (IW) = 8.34 mm and Incisor Length (IL) = 10.14 mm. Although square tooth form and ovoid tooth form were more frequently observed in both genders, for the face form oval facial appearance was more frequently observed 46.9% for male and 65.6% for female and 56.3% in all subjects. The new guideline of dimensional ratio was 82.50 for Myanmar population and positive significant correlation existed between width and length of anterior teeth measurements ($p = 0.01$), the regression formula was: $IL = 2.545 + (0.911 \times IW)$.
Conclusions: This study could provide an estimated tooth forms, guideline ratios and a formula method for conveniently determining the anterior teeth size and form in rehabilitation of Myanmar edentulous patients.

Poster Session 11 | 09.06.2019, 14:30 – 15:30 | Screen 2

Themes: Oral Surgery / Implantology

P051

Clinical and Radiographic Features of Supernumerary Teeth and Treatment Modalities

Yifat Manor[1], Sigalit Blumer[2], Gavriel Gal[2], Hanan Safadi[2]
[1]*Oral and Maxillofacial Surgery, School Of Dental Medicine Tel Aviv University, Tel Aviv, Israel,* [2]*Tel Aviv University, Tel Aviv, Israel*

Aim or Purpose: The purpose of this study is to present case analysis of treating supernumerary tooth (SNT) in order to find possible implications regarding the diagnostic tools and treatment modalities.
Materials and Methods: A retrospective study on patients presented supernumerary tooth (SNT). Inclusion criteria: clear clinical and radiographic data of the cases, follow up of at least 2 years. Exclusion criteria: SNT that are located in the third molar area. Demographic data clinical and radiological features, treatment modality, surgical approach were recorded and analyzed. Statistical analysis done by SPSS for descriptive statistics and correlation between parameters.
Results: Of 50 patients presenting SNT that were analyzed no complications were found. Treatment was correlated to age of discovery and tooth location and dimensions. Lower age of treatment was correlated to sedation and general anesthesia and concomitant surgical orthodontic treatment.
Conclusions: With the limitation of this study it can be concluded that surgical treatment of supernumerary teeth ends in most of the cases without complications. The procedure is performed under general anesthesia in young age (< 9 y.o.) and under local anesthesia in older patients (>12 y.o.). As the discovery of the SN tooth is late the tooth gain longer dimension. SN tooth in the maxilla in usually treated surgically in the mandible where vital structures proximity is found the tendency for monitoring is higher.

P052

Effects of Bone Morphogenetic Protein-2 on Osteogenesis of Cell Spheroids

Jun-Beom Park[1], Sae Kyung Min[2], Minji Kim[3], Hyunjong Yoo[2], Youngkyung Ko[2]
[1]*Periodontics, The Catholic University of Korea, Seoul, Republic of Korea,* [2]*The Catholic University of Korea, Seoul, Republic of Korea,* [3]*Chosun University, Seoul, Republic of Korea*

Aim or Purpose: This study examined the effects of BMP-2 on the morphology, cellular viability, and osteogenic differentiation of stem cell spheroids.
Materials and Methods: Three-dimensional cell spheroids were made using concave microwells in the presence of BMP-2 at concentrations of 0 ng/ml, 10 ng/ml, and 100 ng/ml. Cellular viability was

© 2019 The Authors. International Dental Journal © 2019 FDI World Dental Federation

determined qualitatively and quantitatively using a microscope and a Cell-Counting Kit-8 assay. Alkaline phosphatase activity and Alizarin Red S staining were used to assess osteogenic differentiation. Quantification by real-time polymerase chain reaction was conducted for the evaluation of expression of RUNX2 and COL1.
Results: Spheroidal shape was achieved in the microwells on day 1 and maintained up to 21 days. The relative Cell Counting Kit-8 (CCK-8) assay values for bone morphogenetic protein-2 at 0 ng/ml, 10 ng/ml and 100 ng/ml at Day 1 were 0.247 ± 0.005, 0.241 ± 0.011, and 0.251 ± 0.006. There were significantly higher values for alkaline phosphatase activity at 100 ng/ml group. Quantitative real-time polymerase chain reaction revealed that mRNA levels of RUNX2 were significantly higher at 100 ng/ml.
Conclusions: Collectively, this study shows that the application of BMP-2 increased alkaline phosphatase activity and RUNX2 expression of stem cell spheroids at 200 ng/ml.

P053

Impact of Implant Placement Levels on Radiographic and Microbiologic Outcomes

Deniz Çetiner[1], Ahu Uraz[2], Sila Isler[2]
[1]*Periodontology, Gazi University, Faculty of Dentistry, Ankara, Turkey,* [2]*Gazi University, Faculty of Dentistry, Ankara, Turkey*

Aim or Purpose: The present study was aimed to compare the influence of crestal/subcrestal placed platform-switched and crestal placed platform-matched implants with clinical, radiographic and microbiologic outcomes during 12 months following functional-loading.
Materials and Methods: The study population consisted of 70 patients (39 females-31 males, mean age: 50.55 ± 7.8). Group I ($n = 23$) presented a machined surface and platform-switched implant-abutment connection design, and implants were inserted 1 mm subcrestally. Group II ($n = 22$) implant with similar properties were crestally inserted. Group III ($n = 25$) presented platform-matched with an internal hexagon connection design and was crestally inserted. The plaque index (PI), gingival index (GI), bleeding on probing (BOP), probing depth (PD), marginal bone loss (MBL) were measured at baseline, 3, 6- and 12-months post-loading. The amount of DNA copies of *P. gingivalis*, *A. actinomycetemcomitans* and *T. forsythia*, and total bacteria mean in peri-implant sulcus were assessed at same period using quantitative PCR.
Results: There were no significant differences between groups with respect to PI, GI, BOP and PD for all time periods ($p > 0.05$). At 12 months follow-up, the mean of MBL changes were 0.16 ± 0.29 mm and 0.17 ± 0.23 mm for Group I, 0.15 ± 0.25 mm and 0.17 ± 0.26 mm for Group II, 0.17 ± 0.16 mm and 0.18 ± 0.27 mm for Group III in mesial and distal sites, respectively. The mean total bacteria load was found significantly higher in Group III compare to other groups in the three interval times ($p < 0.05$).
Conclusions: Platform-switched implants placed at both subcrestal and crestal levels presented lower colonization of bacteria compared to platform-matched implants placed crestally.

P054

Effect of Reverse Torque on Bone Stress Levels: Finite Element Analysis

Ahu Uraz[1], Deniz Çetiner[2], Yücel Özdemir[2], Sila Isler[2]
[1]*Periodontology, Gazi University, Faculty of Dentistry, Ankara, Turkey,* [2]*Gazi University, Faculty of Dentistry, Ankara, Turkey*

Aim or Purpose: The aim of this study was to investigate the effect of the reverse torque force on the stress distribution around bone and implant surface in peri-implantitis bone defect by using 3D finite-element analysis.
Materials and Methods: Four different design implants were placed in 3 types peri-implantitis bone defect modeled by varying the elastic modulus for cancellous and cortical bone. A total of 32 models were obtained by creating around of each implant 3 different peri-implantitis defects and control group which is no defect around implant. Axial 10 Ncm removal torque force was applied to the occlusal node at the center of implants. The results were analyzed using maps of maximum principal, minimum principles and Von Mises stresses, and distributions.
Results: As a result of the analysis of different models; implant design, presence and variety of bone defects, and all bone type factors affected the torque force required to remove the implant. In models with high implant and bone contact, more reverse torque force and stress distribution were observed than other models. The differences in implant geometry affected the reverse torque force and had different stress distributions.
Conclusions: In order to prevent complications that may arise when removing implants, it is necessary to apply the proper techniques and appropriate forces. Although the data obtained in this study have explained some points analytically, more clinical studies are needed to evaluate all conditions.

P055

Assessment of Patient's Experience Following Implant Surgical Procedure

Deborah M. Ajayi[1], Shakeerah Gbadebo[2], Funmilayo Abiodun-Solanke[2]
[1]*Department of Restorative Dentistry, University of Ibadan, Ibadan, Nigeria,* [2]*University of Ibadan, Ibadan, Nigeria*

Aim or Purpose: Dental implant treatment is not often accepted as a replacement option in our environment because of the cost and concern about surgery involved. This study therefore set out to evaluate the experience of the patients seen, following implant placement.
Materials and Methods: Post treatment self-completed questionnaires were administered to twenty-one consecutive patients who had undergone surgical procedures for implant placement according to the standard protocol. The information was collected one week after the surgery. A five-point Likert's scale was used to ask the questions on the level of pain and amount of swelling experienced following surgery. Also, compliance with medication, and sufficiency of the information given before surgery were analyzed. Data collected were analyzed using descriptive statistics (p value ≤ 0.05).
Results: Total number of implants placed in the 21 patients (Male = 12, Female = 9; Mean age = 43.0 ± 15.3 yrs) was 42,

© 2019 The Authors. International Dental Journal © 2019 FDI World Dental Federation

(Means - Male = 1.8 ± 1.0, Female = 1.9 ± 1.2). Most of the patients (57.1%) had no systemic illness, 23.8% were hypertensive, and none had diabetic mellitus. Teeth mostly replaced were maxillary incisors (47.6%) followed by mandibular molars (30.9%). Only few patients, 19.1%and 14.3% respectively experienced more pain and swelling than expected while 81% found the information provided before surgery sufficient enough to cope well with the post-surgical experience.
Conclusions: Majority of the patients had pleasant postoperative experience following implant surgical procedure.

Poster Session 12 | 09.06.2019, 14:30 – 15:30 | Screen 3

Themes: Oral Surgery / Oral Pathology

P056
Three-dimensional Soft Tissue Changes after Transoral Vertical Ramus Osteotomy
Moon-Key Kim[1], Sang-Hoon Kang[2]
[1]*Department of Oral and Maxillofacial Surgery, NHIS Ilsan Hospital, Seoul, Republic of Korea,* [2]*NHIS Ilsan Hospital, Seoul, Seoul-t'ukpyolsi, Republic of Korea*

Aim or Purpose: The transoral or intraoral vertical ramus osteotomy (VRO) procedure used for backward movement of the mandibular distal segment in patients with mandibular prognathism is relatively fast and straightforward and is not likely to cause nerve damage, plus it has the advantage of not putting too much load on the temporomandibular joint. Despite these advantages, the VRO procedure may displace the segment proximal to the condyle laterally and could widen the inter-ramal width. In this study, we compared three-dimensional soft tissue changes in the patients who were performed the VROs using preoperative and more than one-year postoperative CT (Computer tomographic) images.
Materials and Methods: We collected thirty CT data with a total of 59 surgical sites from whom underwent VRO as surgical correction methods for the dentofacial deformities in our department. We examined the changes in the mandibular ramus areas and their corresponding cheek regions by superimposing preoperative and postoperative CT data based on the craniums with inspection software. Any difference with 2 mm or less was considered to be negligible due to the limitations of multi-detector CT slice cut width or clinically acceptable even if it existed.
Results:
Eleven of 59 VROs (18.6 %) had more than 2 mm lateral increases with a range of 2.3 to 4.5 mm. :
Conclusions: The transoral vertical ramus osteotomy, which is intended to surgically correct mandibular prognathism, may not appear to cause a clinically significant increase in the transverse dimensions.

P057
The Efficiency of Ozone-therapy & low-level-laser-therapy in Rat Facial Nerve Injury
Turker Yucesoy[1], Yusuf Yuca[2], Olgu Tok[3], Alper Alkan[4]
[1]*Oral & Maxillofacial Surgery, Bezmialem Vakif University Faculty of Dentistry, Istanbul, Turkey,* [2]*Faculty of Dentistry, Bezmialem Vakif University, İstanbul, Turkey,* [3]*Medipol University Faculty of Medicine, İstanbul, Turkey,* [4]*Bezmialem Vakif University Faculty of Dentistry, İstanbul, Turkey*

Aim or Purpose: In this study, it is aimed to compare Low-Level-Laser-Therapy (LLLT) and Ozone-Therapy (OT) methods in rats with facial nerve injury (FNI) model by evaluating their impacts histologically on the healing of damaged nerve tissue.
Materials and Methods: 30 number of 10 to 12-week-old Wistar albino female rats with 220 ± 20 gram weights are included in the study. In order to create neuropathic damage, left facial nerves (FN) of rats are kept by a surgical clamp for 30 sec. Then, while keeping control group to heal spontaneously, LLLT is applied to laser group (LG) 32 seconds for 21 days with the 4j energy level and ozone therapy is applied to ozone group (OG) intraperitoneally as 2 ml (80 μm/ml) for once in two days. At week four, samples were collected from sacrificed rats for histomorphological evaluation.
Results: In analyzed transects, numbers of nerve fiber branching, the diameter of nerve fiber, area of nerve fiber, number of axons are compared with the control group. Statistically significant outcomes were observed in Ozone Group ($p < 0.05$) whereas laser group did not reveal statistically significant healing patterns on FNI.
Conclusions: This is the first histopathological study comparing the efficiency of OT and LLLT in the treatment of the FNI in rats. It is concluded that both therapies provide a safe and effective treatment. OT was statistically significant then LG and control group. Although LLLT showed better outcomes than the control group, the final outcome was not statistically significant ($p > 0.05$). On the other hand, the less successful outcomes of LLLT could be attributed to the type of laser device or wrong application technique. Further studies with LED-assisted laser therapy and LLLT are needed on peripheral nerve injuries.

P058
Pain Relief after Cortisone and Placebo Injections in Temporomandibular Joint Arthralgia
Eva Nohlert[1], Göran Isacsson[2], Mohamad Schumann[2], Christina Mejersjö[3], Åke Tegelberg[4]
[1]*Uppsala University, Sweden, Centre for Clinical Research Vasteras, Vasteras, Vastmanlands Lan, Sweden,* [2]*County Hospital, Vasteras, Vasteras, Sweden,* [3]*Sahlgrenska Academy and Public Dental Health, Gothenburg, Sweden,* [4]*Faculty of Odontology, Malmo University, Malmo, Sweden*

Aim or Purpose: Temporomandibular joint (TMJ) arthralgia is a painful condition assumed to be associated with local inflammation. To evaluate efficacy for reducing pain during a 4-week follow-up after a single-dose intra-articular (IA) injection of

© 2019 The Authors. International Dental Journal © 2019 FDI World Dental Federation

methylprednisolone vs saline among patients with unilateral TMJ arthralgia.
Materials and Methods: This randomized, controlled, double-blind, multicenter study included visits for enrolment, treatment and 4-week follow-up. Included were patients 18 years and older who had been diagnosed with unilateral TMJ arthralgia. The participants were randomly assigned to receive 1 mL IA injections of methylprednisolone or saline. The primary outcome was change in recorded pain intensity on a visual analogue scale (VAS) at maximum jaw opening, analyzed in the per protocol population.
Results: In total, 54 patients were randomly assigned to single-dose IA injections with methylprednisolone (n = 27) or saline (n = 27). Between baseline and the 4-week follow-up, VAS-rated pain intensity at maximum jaw opening decreased from a mean of 61.0 (95% confidence interval [CI]: 50.1; 70.7) to 33.9 (95% CI: 21.6; 46.2) in the methylprednisolone group and from 59.6 (95% CI: 50.7; 65.9) to 33.9 (95% CI: 23.8; 43.9) in the saline group (p = .812). Treatment-related adverse events were doubled in the methylprednisolone group.
Conclusions: Methylprednisolone provided no additional benefit for reducing pain, but caused more harm compared with saline following a single-dose IA injection in patients with TMJ arthralgia.

P059

Atraumatic, Idiopathic Lefort 1-pattern Osseous Interruption of an Elderly Female

Ho-Hyun B. Sun[1], Jeffrey Elo[2], Sally Sun[3], Ehssan Ghassemi[4], Benjamin Shimel[4], Chan Park[4]
[1]*Oral and Maxillofacial Surgery, Highland Hospital / University of the Pacific / Western University of Health Sciences, Oakland, CA, United States,* [2]*Western University of Health Sciences, Pomona, CA, United States,* [3]*Kaiser Permanente Northern California, Stockton, CA, United States,* [4]*Highland Hospital / University of the Pacific, Oakland, CA, United States*

Introduction: The purpose of this report is to explore a set of unusual cases of atraumatic pathology mimicking a severe traumatic injury.
Case Description: An 86-year-old woman was referred for evaluation of pain in the right palatal region. Her medical history was significant for hypertension, osteoporosis treated with calcium, and urinary incontinence. The patient denied a history of trauma, bone-strengthening medications, radiation, or immunosuppression.
Discussion: Examination revealed exposed bone mesial to tooth #2. The right palatal mucosa was also erythematous with a fluctuant, non-blanching swelling. CBCT showed near-complete LeFort-1 pattern interruptions in bilateral maxilla with complete intrasinus opacification and osteomeatal complex enlargement. Alveolar trabeculation was sparse with irregular PDL widening and separated bone seen in the left maxillary alveolus. Biopsy showed absent osteocytes, minimal osteoclasts, and few bacteria consistent with osteonecrosis. A consultation with the patient's PCP revealed 4 months of oral alendronate therapy 18 months prior to her presentation. Her dentist also reported a simple extraction of tooth #5 approximately 11 months prior.
Conclusion/Clinical Significance: Our experiences indicate that 1) MRONJ may affect profoundly large sections of the jaw despite the absence of traditional "high risk" factors such as metastases and extended-duration IV medication therapy, 2) complication rates may differ along racial lines, and that 3) current "experimental" treatment strategies utilizing pentoxifylline may hold great promise with minimal documented side effects. Our patient remains on conservative therapy with antibiotics, pentoxyfilline, and regular surveillance without increasing symptoms or further degradations in her quality of life.

P060

A-PRF Technology in the Removal of Complex Wisdom Tooth

Anna Kolesnikova[1], Galina Lukina[2], Anton Lukin[2]
[1]*Oral Surgery, MSUMD, Brooklyn, United States,* [2]*MSUMD, Moscow, Russia*

Aim or Purpose: To study the effects of A-PRF membranes on the hole and surrounding tissues after removal of complex wisdom tooth in children aged 13–18 years old.
Materials and Methods: 80 patients, aged from 13 to 18 years old, were referred to the dental clinic, who underwent surgery - complicated tooth extraction using A-PRF technology. Comparison was carried out with 20 patients in whom this technology was not used for complicated tooth extraction. Dynamic clinical observation and evaluation of roentgenological picture on 1st, 4th, 7th and 14th day after extraction.
Results: The results showed that after 7 days the mucous membrane in the gum area of the previously extracted tooth and the sutured hole looked pale pink, and there was no soft tissue swelling in the surgical area in patients, while in the comparison group in 6 patients there was hyperemia and swelling of the mucous membrane of the gums. The seams are wealthy. There was no pain syndrome (in the comparison group, the pain persisted in 4 patients). Suture removal was performed. Patients were satisfied with the previous procedure due to the mild postoperative period.
Conclusions: After the operation, a complex tooth extraction using A-PRF technology revealed that patients had no pain syndrome after tooth extraction, edema, and inflammation. The A-PRF membrane really positively influenced the process of regeneration of the tooth hole, and also reduced the healing time of the tooth hole, by more than 7–10 days.

© 2019 The Authors. International Dental Journal © 2019 FDI World Dental Federation