E-Posters
Correlation of soft tissue biotype with underlying bone—A clinical and CT analysis

Avigdor Klinger, Nathalie Frumkin and Shlomo Via
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The aim of this study was to examine the correlation between soft and hard tissues in human subjects. Labial plate thickness was measured by cone beam computerized tomography (CBCT). The correlation between these and the clinical measurements were obtained by probe transparency through the sulcus and analyzed by collecting data from two tooth types—canine and central incisor. Thickness of the buccal plate of the lower jaw in males was wider than in females (1.21 mm vs. 1.01 mm respectively). 78% (25/32) of upper teeth had thin biotype compared to 50% (19/38) of lower teeth. 62% (10/16) and 32% (6/19) of patients had thin biotype in upper and lower teeth respectively. More than 30% of subjects demonstrated different biotypes in the same jaw at different sites. In the upper jaw of smoking subjects, a negative correlation was found between CEJ–alveolar crest distance and facial bone plate width. Probe transparency through the soft tissue at the upper canine was positively correlated with the width of the facial bone plate at the alveolar crest (p-value<0.05). We conclude therefore that biotype can vary in the same subject at different sites. Only the biotype of the canine correlated in our study with the facial plate width.

Biography

Avigdor Klinger completed his DMD from Hebrew University–Hadassah School of Dental Medicine in 1991 and PhD from the same university in 1998.

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Notes:
Temporo-mandibular joint complex disorders due to complete/partial edentulism and debate on prosthetic rehabilitation

Faran Farooq
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The lack of complete dentition leads to serious functional & esthetic disabilities, in fact the individual's quality of life. The commercialized dental practice focused on the prosthetic rehabilitation was limited to anterior teeth due to esthetic reasons and rarely the posteriors, hence leading to inefficient and unprofessional approach. Occlusion and its relationship with the temporo-mandibular joint has always been debated. The homeostasis characterizing the triad for healthy masticatory system depends on the dynamic relationship between dental occlusion, masticatory musculature, and the temporo-mandibular joints. Disruption of this leads to the TMJ disorders. TMJ pain dysfunction syndrome may be related to rapid change on vertical occlusal dimensions. The major occlusal stops (Molars and Pre-molars) make up the area of occlusal support. The loss of those stops makes the residual teeth in the oral cavity absorb even greater load, ultimately leads to aggressive abrasion and lowering of the occlusal height. This results in the mandible coming closer to the maxilla and frequently also the posterior dislocation of the mandible. Such a change of the position of the mandible against the maxilla disrupts the TMJ biomechanics and may generate various temporo-mandibular disorders (TMD).

Resulting sequelae of such dysfunctions is persistent pain in the TMJs, also the masticatory muscles and radiation across the head. Temporo-mandibular joint dysfunction is multifactorial and hence entails a multidisciplinary approach. However, there are studies that tried to feature the quite ignored aspect of rehabilitation. Number of stomatognathic and prosthodontic studies was conducted to evaluate the prevalence of missing teeth and TMDs. It was concluded that replacement of missing teeth not necessarily prevents the development of TMDs. However, missing mandibular posterior teeth may accelerate the development of degenerative joint disease. In a review of 57 epidemiological studies, Okeson found that 35 suggested relation compared with 22 studies that suggested no relation.

It was documented that significant change in the condylar position occurred after prosthetic rehabilitation (concentric position + 0.35 mm). Occlusion has not been determined as the dominant cause of TMD problems. However, the interrelationship between this harmonious complex of masticatory musculatures, occlusion and temporo-mandibular joint cannot be overlooked. The association of partial/total edentulism on the TMJ health has not been addressed through any long term clinical trials due to the complexity of stomatognathic system. Researchers should conduct long term studies on the importance of prosthetic rehabilitation to prevent long term disregarded hazards of the TMJ complex.

Biography
Faran Farooq has completed his Bachelor of Dental Surgery from Dow University of Health Sciences. He is a careful and creative thinker with an eye for details and devotion to logic. He is known for his vast volunteer services along with community outreach programs. He has terrific ability to draw on his own experience and observations to develop thoughtful opinions on variety of issues. Moreover, he is known for his versatile pulling of thoughts into a scientific paper which makes him excel to being highly analytical.

Notes:
Rejuvenation of maxilla with zygomatic implants as a part of pre-prosthetic surgery

Farhana Nazir
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Zygomatic implants are surgical as well as prosthetic solution for both two-stage and immediate loading protocols. Zygomatic implants are placed by using an immediate loading procedure these days. These are commonly used for severely resorbed edentulous maxilla, but they can also be used in partially edentulous conditions. Indications for zygomatic implant insertion comprise: alternative for sinus augmentation, failed sinus augmentation, rehabilitation after tumor resection or trauma, conventional implants failure, failure of preceding bone grafts. The placement of zygomatic implants involves sufficient training and surgical proficiency. In the conventional protocol, zygomatic implants are inserted through the alveolar crest and maxillary sinus, which involves the zygomatic bone for anchorage. Long-term prospective studies with the standard 2-stage and immediate loading methods record elevated success rates with only negligible complications. The increasing survival rate of these implants is 96% after 12 years. When anterior implants placement is not possible for totally resorbed maxilla, the concept can be extended by introducing 2 supplementary zygomatic implants in a more anterior position. Nowadays, zygomatic implants are often immediately loaded with a fixed bridge. They are used to deliver support for implant bridgework where there has been a considerable amount of bone lost from the upper jaw, and regular dental implants cannot be used on their own to support a bridge. The implants are longer than ordinary dental implants, and involve strong bulk of bone that forms the cheekbone. Therefore, the implants can be used as substitutes to complex bone grafting procedures, making it feasible to carry out surgery in just one simple stage.

Biography

Farhana Nazir has completed her Bachelor of Dental Surgery along with 1 year of clinical internship from Dow University of Health Sciences, Pakistan. Her passion for learning about new advances and procedures in dentistry led her to travel around the world and visit UK’s most reputed institutions, as well as US for electives. These experiences proved to be very helpful and developed confidence in her. She has great communication skills and patient handling. She has been active in her field by participating in various dental conferences with her presentations and hopes to continue learning about new developments in dentistry.

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Notes:
Use of the gel “APA CARE” (“The Liquid Enamel”) in the treatment of enamel demineralization after orthodontic treatment

Aleksey Komarov
Kharkiv National Medical University, Ukraine

**Background:** Today the bracket-system is the basic method of orthodontic treatment of disocclusion in patients with the formed constant occlusion. Orthodontic treatment takes long enough time and on the average it lasts 2-3 years depending on abnormality. Brackets, arcs, ligatures are retentional point for a cluster of the soft dental deposit, and also prevent an oral hygiene and natural self-cleaning of teeth. One of the basic complications in orthodontic treatment by bracket-system is demineralization of enamel. The demineralization sites more often occur around brackets, under locks, in cervical area, in proximal interdental contacts at high density of teeth.

**Purpose:** The purpose is to estimate remineralizing efficiency of the drug "APA CARE" (“The Liquid Enamel”).

**Materials & Methods:** 35 Kharkov patients, aged 19 – 25 years old, receiving orthodontic treatment by bracket-system from 9 months till 1 year were investigated. Among the examined patients, 13 people have revealed the nidal demineralization of enamel in cervical area of the lower and upper incisors and cusps, in the field of the lower and upper molars. For differential diagnostics of initial caries with non-carious lesions staining of teeth enamel of 2% aqueous solution of the methylene blue was used. All patients have undergone the professional tooth cleaning. Application of APA CARE (The Liquid Enamel) in home conditions was prescribed. It was recommended to carry out this procedure once a day after tooth cleaning, to apply paste on teeth and to sustain it within 3 minutes. After procedure it was advised not to rinse the mouth and to refrain from a food intake within an hour. Course of treatment lasted for 1 month. At an estimate of efficiency of treatment the following parameters were considered: area of the site of a demineralization, colour and sizes of a stain, luster of a surface. To estimate the processes of remineralization of teeth enamel the test of enamel resistance (TER-test) was carried out.

**Results & Discussion:** During the study it was noticed that the area of the sites of demineralization was decreased once or twice accompanied by clinical changes and there was a decrease in the visible part of a carious stain and the tooth enamel has gained a natural luster. The significant improvement of the indices characterizing fastness of teeth enamel to activity of acids was noted: according to resistance test (TER-test) indices 54.6 ± 2.6% have decreased to 34.7 ± 1.8%.

**Conclusions:** Thus, the gel APA CARE (The Liquid Enamel) is an effective remineralizing drug and can be recommended for prevention and treatment of the sites of demineralization of enamel in patients, receiving the treatment by bracket-system.

**Biography**
Aleksey Komarov is currently studying in Kharkiv National Medical University, Department of Pediatric Dentistry, Children's Maxillofacial Surgery and Implantology, Kharkiv, Ukraine. He has published articles in the field of Dentistry.
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Effect of number of splinted abutments on supporting structures in unilateral attachment distal extension prosthesis

Hossam Nassar
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**Purpose:** The aim of this study was to evaluate the stress applied on abutments and alveolar ridge using a new unilateral semi-precision attachment with different number of splinted abutments in unilateral distal extension cases.

**Methods:** A fabricated acrylic maxillary casts simulating a unilateral distal extension (Kennedy class II) case was used. Abutments (canine, first and second premolar) on one side were prepared to receive two/three splinted crowns with the unilateral attachments. The strain gauges were installed around the abutments and on the edentulous ridge. A loading device was used to produce standardized static load on the molars area and around the splinted abutments.

**Results:** Two splinted abutments showed statically higher significant mean strain for the lingual and distal surfaces compared to three splinted abutments. While three splinted abutments showed statically insignificant mean strain compared to two splinted abutments for the residual ridge.

**Conclusion:** Increase in number of splinted abutment in extracoronal unilateral attachment decrease the stresses applied on distal abutment in unilateral distal extension cases. The difference in the induced stresses recorded at distal extension area was not statically significant.

**Biography**
Hossam Nassar works as a Lecturer of Removable Prosthodontics, Department of Dentistry, Future University, Cairo, Egypt. He is also a designer, data analyst, involved in drafting articles, critical revision of articles, and approval of articles, data collection & corresponding author.

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Notes:
Effect of number of splinted abutments on supporting structures in unilateral attachment distal extension prosthesis

Yashfika Abdul Bari
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The Golden Proportion has been suggested as one possible mathematical approach to development of ideal size and shape relationships for maxillary teeth. These principles can be used to determine the width of the teeth as they relate to each other. As applied to the maxillary teeth, the Golden Proportion requires a 62% reduction in the viewing width of each tooth, beginning with the central incisor, and proceeding posteriorly. The Golden Proportion could be used to develop symmetry, dominance, and proportion for aesthetically pleasing smiles. The principle of “gold proportion” in connection with a denture consists in the following: the central incisors are hardly longer than lateral incisors and are almost equal to the length of canines; and lateral incisors are slightly shorter and thinner than the central incisors. The width and the length of each tooth is measured by compasses and calculated for each patient individually. According to a “gold proportion” fore-teeth as a part of person appearance are in the certain ratio to each other. The basic key for the description and construction of four incisors and two canines considers the size (which is accepted as unit) of the width of a small piece of teeth arch or a lateral incisor. On the basis of a lateral incisor width, by the formula of “gold proportion”, it is formed the width of the central incisors and canines, and also the length of a fore-part of a dental arch, and vice versa if the length of a fore-part of a dental arch is known, to achieve an ideal aesthetic condition by a principle of “gold proportion”, it is defined the width of all fore-teeth. Teeth measurement is taken to define an initial condition, denture calculation, verification of the received results during teeth construction and estimation of the complete denture reconstruction. Proportion is the certain ratio between parts, and proportional means a proper correlation of parts among themselves. A gold proportion is the corner stone of beauty and it can be applied with success in stomatology.

Biography

Yashfika Abdul Bari has completed her BDS from Dow University. She has taken observerships from esteemed institutions of UK. She is an energetic dental surgeon, enthusiastic about dental health and enjoy educating patient about personal dental health care and preventative measures and focused on providing exceptional patient care and excels in fast paced environment. She has been a versatile Dentist. She is highly intellectual and has good analytical skills. She has exhibits of exploring new concepts from existing ones.

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Notes:
Facial prosthetic rehabilitation

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Attention to detail ensuring a successful facial prosthetic rehabilitation must be considered a priority at the time of presurgery, surgery, and at every stage in fabricating the prosthesis. Teamwork between the surgeon and maxillofacial prosthodontist will ensure an optimal surgical preparation and definitive prosthesis. The prosthetic rehabilitation is a surgical alternative in functional-aesthetic facial reconstruction when the conventional reconstructive surgery cannot be applied either because of the psychophysical conditions of the patient or because of an excessive substance loss. Evidence of interaction between team members can most certainly be encouraging to the patient. During the prosthetic phase of treatment, focusing on tissue assessment, impression making, sculpting, mold fabrication, familiarity with materials, appreciation of color, delivery of instructions, and patient education will ensure a satisfactory outcome. With the desire, determination, and encouragement from the restorative team to make the most of this artificial replacement, a patient can have a higher quality of life and a more normalized lifestyle. The primary objective of the prosthetic rehabilitation was to provide closure of the severe defect to protect the soft tissues from environmental exposure. Secondly the prosthesis also provided acceptable aesthetics and psychological benefit to the patient. Maxillofacial prostheses are a reliable treatment option to restore maxillofacial defects improving patient's quality of life. During the last decade, most progress in maxillofacial rehabilitation care has been made in the application of implants for retention and digital technology for designing the surgical guides, suprastructures and craniofacial prostheses. Improvements are necessary for longevity of the prosthesis, i.e. quality of materials, color stability and microbial influence on prostheses.

Biography

Summaya Saleem is a 2015 graduate of the Dow University of Health Sciences in Bachelor of Dental Surgery program in Pakistan with over 1 year of experience as a general dentist. She has been active in her field by participating in various dental conferences with her presentations and hopes to continue learning about new developments in dentistry.

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Notes:
Prosthetic reconstruction for post cancer patients

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One of the major challenges facing head and neck oncology is the restoration of function after oncologic surgery of the oral cavity. Dental rehabilitation is crucial for achieving good outcomes. Pre-surgical planning with the restoring prosthodontist is mandatory before implant surgery. For many investigators, the facial skeletal deformities and unfavorable anatomy of the intraoral soft tissues often constituted insurmountable obstacles for dental rehabilitation and functional reconstruction. Within the general objective of securing esthetic as well as functional reconstructions, dental rehabilitation is an important consideration for achieving a good outcome. Adequate dental rehabilitation allows the patient to chew food and considerably improves speech and swallowing. Prosthodontic treatments depend on the degree of edentulousness or the type of defect present. Maxillary defects are created by surgical treatment of benign or malignant neoplasms, congenital malformation and by trauma. The size and location of the defects influence the degree of impairment and difficulty in prosthetic rehabilitation. Lack of support, retention, and stability are common prosthodontic treatment problems for patients who have had a maxillectomy. A prosthesis used to close a palatal defect in a dentate or edentulous mouth is referred to as an obturator. The obturator prosthesis is used to restore masticatory function and improve speech, deglutition and cosmetics for maxillary defect patients. Rehabilitation with a maxillary obturator is successful in restoring preoperative speech function. Rehabilitation of individuals with involvement of the soft palate may be more challenging. Speech outcome measurements are valuable in guiding treatment and determining the effectiveness of rehabilitation with a maxillary obturator prosthesis in individuals with palatal resection.

Biography

Syeda maliha waqar graduated in 2015 as a bachelor of dental surgery from Dow University Of Health Sciences and recently completed one year experience as a general dentist. She loves working with individuals that have dental anxiety or special needs. Her efficiency, conscientiousness and gentle manner are most appreciated by her patients. Because of her keen interest she worked periodically in different private practice. She often participates in different dental conferences and present her research work to explore more about new discoveries in the field.

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Notes:
Pre-surgical infant orthopaedics – nasoalveolar molding (NAM) technique

Zafar Abbas
Liaquat College Medical and Dental

Introduction: There has been overlooking of the deformities of nasal cartilage in unilateral and bilateral cleft lip and palate patients leading to loss of nasolabial fold after accomplishment of the treatment. Hence pre surgical infant orthopaedics has been employed as an adjunctive neonatal therapy for the correction of cleft lip and palate. Therein nasoalveolar molding (NAM) technique has reduced the severity of the initial cleft alveolar and nasal deformity. Long term studies on NAM therapy indicate better lip and nasal form, reduced oronasal fistula and labial deformities, 60% reduction in the need for secondary alveolar bone grafting. Studies have shown that no effect on growth of midface in sagittal and vertical plane has been recorded up to the age of 18 yrs.

Objective: To ascertain the significance of nasoalveolar moulding technique in cleft lip and palate patients.

Material & Methods: A search was conducted through various search engines through internet and articles about nasoalveolar moulding technique in the treatment of cleft lip and palate deformity. A proper alignment of the alveolus, lip and the nose helps the surgeon to achieve a better and more predictable surgical result. The cleft deformity is significantly reduced in size with the NAM therapy before surgery, making primary repair of the lip, alveolus and the nose an effortless procedure. Studies have also demonstrated that 60% of patients who underwent NAM and gingivoperiosteoplasty did not require secondary bone grafting.

Conclusion: Long-term studies of NAM therapy indicate that the change in the nasal shape is stable with less scar tissue and better lip and nasal form. With the alveolar segments in a better position and increased bony bridges across the cleft, the permanent teeth have a better chance of eruption in a good position with adequate periodontal support. Since the initiation of NAM, there has been a significant difference in the outcome of the primary surgical cleft repair. NAM has demonstrated tremendous benefit to the cleft patients as well as to the surgeon performing the primary repair. This enables the surgeon and the patient to enjoy the benefits associated with repair of a cleft deformity that is minimal in severity.

Biography
Zafar Abbas (MCPS Trainee-OMFS) has done BDS from Liaquat College Medical and Dental, Karachi, Pakistan. He has published articles in peer reviewed reputed journals.

Notes:
Accepted Abstracts
Immediate implant placement of single central incisor using CAD/CAM protocol

Dean C Vafiadis
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It has been shown that anterior implant placement after extraction has a beneficial aesthetic response by preserving the tissue and bony architecture. Several articles have shown that aesthetic gingival results can occur by using customized immediate provisional to capture the extraction sockets after placement of the implant. The use of prefabricated and customized provisional abutments have been successful in this process. This presentation will demonstrate the same techniques; however the pre-operative intra-oral scan of the clinical tooth and gingival architecture and the CBCT scan of the bone and root anatomy will be sued to fabricate the customized provisional. This technique will show that the information gathered with these digital files can be used to capture and preserve the soft tissue architecture following extraction. The root-form/tooth form provisional will mimic the exact dimensions of the tooth before extraction and then replicate the anatomy to best preserve the tissues and bony architecture. Utilizing the concept of dual-zone therapeutic concept, the anatomical root configuration in the bony-implant zone can be replicated with the digitally designed immediate provisional.

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“Doctor, my tooth is broken”: The relevance of dental research in clinical practice

Alan Preiskel
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Dental research aims to provide objective answers for clinicians about how to best treat our patients. We produce thousands of scientific papers every year yet it is still difficult to deduce objective recommendations that will lead to predictable outcome for our patients on an individual basis. Arithmetic means and survival statistics are helpful but do not address the multi-factorial problems involved in managing a specific clinical scenario. This presentation will explore the applicability of research for use in daily dental practice. This paper will explore possible methods to narrow the dichotomy between research and practice to benefit the public we serve. Learning Objectives: To understand the limitations of applying current research methodology to treat our patients on an individual basis. To demonstrate potential avenues that dental research could develop to overcome current limitations of clinical relevance.

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Preventing and treating soft tissue implant complications

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Advanced Periodontics Implant Center, USA

Implant failures are extremely difficult to correct. They usually result from the loss of bone and soft tissue volume. It’s really an equal balance of bone and soft tissue that must be present for ideal long-term success. Keratinized gingiva is beneficial around implants but not essential for health; however with increased soft tissue volumes we do see fewer complications. When preventing esthetic soft tissue failures we must augment any deficiencies with implant placement. Esthetic complications fit into two areas: failures with missing papillary volume and deficient facial gingiva/bone. This lecture will focus on how to prevent and treat these complications. Proper planning and sequencing with connective tissue grafts/immediate or delayed placement will all be discussed.

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Placing an implant using a single bur: Is that possible and a safe procedure in 2016?

Raphael Bettach
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In oral implantology, we are used to place implant by enlarging the hole of implant placement, using drills of increasing diameters, with the working length. Most companies use an average of 3 drills to prepare the place for the implant. Most companies also advise to drill at low speed to avoid the risk of heating the bone. A French company recently decided to create an implant that is positioned using a single drill and a high speed drilling between 1500 to 2000 rpm. A clinical and follow-up of 2 years study on CIDRR showed a success rate of 98%. A comparative study published in 2014 in CIDRR, with Strauman and Nobel Implants Brands showed that the heating of the bone with one drill at 1500 rpm speed, was very close to the results of the other brands. Those studies show that drilling with a single bur to place an implant can be demonstrated as a safe procedure in oral implant surgery.

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Performance of zirconium abutments from different implant designs in esthetic areas

Sheila Pestana Passos
University of Alberta, Canada

The advantages of zirconia implant abutments are enhanced esthetics with less gingival grey-blue discoloration than titanium abutments and enhanced biocompatibility. Dental zirconia (Y-TZP) is becoming the ceramic material of choice for implant abutments, especially in esthetic areas. Nevertheless, most of the data presented to date for zirconia abutments is for the standard platform implants. This lecture will focus on the esthetic parameters of zirconia abutments in implant dentistry. One of the studies that will be thoroughly discussed evaluated the standard and platform switching implant-supported restorations as well as different implant designs. This investigation was conducted to assess complications, survival and success rates of zirconia abutments for implant-supported single crowns in esthetic zones. The peri-implant parameters were observed as well as mechanical complications, such as loss of retention and presence or absence of abutment fractures. The pros and cons of zirconia standard platform abutment designs compared to zirconia platform switching abutments will be presented in light of the current available knowledge.

Managing hard and soft tissues loss in the esthetic zone after a single tooth extraction- A challenge or a drama?

Ahed M Kadamani
Al-Quds University, Israel

One of the most challenging issues in the world of dental implants is restoring a missing anterior tooth. The loss of the hard and soft tissues due to periodontal disease or the physiological bone resorption after tooth extraction complicates and dramatizes the treatment plan and the end result. Trying to achieve a proper emergence profile and gingival symmetry between the adjacent teeth is the major concern of the prosthodontist in such cases. In this case presentation a 24 years old women suffered from localized aggressive periodontitis on teeth no. 11 and 41 was referred to our clinic. To manage the bone defect an autogenous bone block was grafted in area 21. After healing an implant was inserted. 3 months later the soft tissue modification and engineering was performed using a provisional abutment and a provisional crown which was modified many times to achieve a good emergence profile and acceptable gingival level. The definitive prosthesis was achieved by a zirconium dioxide abutment and a zirconium crown on tooth no. 11 in addition to E-max laminate veneers on teeth no. 23, 22, 21, 12 and 13.
Evaluation of maxillary sinus floor elevation using the balloon technique

Ahmed Tolaa T Temerek
South Valley University, Egypt

Aim of this study: Evaluation of maxillary sinus floor elevation using the balloon technique.

Patient & Methods: Eight maxillary sinuses in seven patients were elevated using the balloon technique through lateral approach using piezoelectric surgical tips. All sinuses augmented with silica tri-calcium phosphate granules. After 6 months implants were placed and followed up for another 6 months. Clinical and radiographic assessments were done preoperatively, 6 months post-grafting and 6 months post-implant placement.

Results: Patients were 4 females and 3 males. Mean age was 44.3 year. Significant increase in mean bone height at 6 months post-grafting reached 12.37 mm as compared to preoperative mean bone height that was 2.92 mm. Non-significant increase in Schneiderian membrane thickness did occur before implant insertion. None of the studied cases did show any sign or symptom of maxillary sinusitis. Two of the eight studied cases showed small tear in the membrane lining that repaired using resorbable collagen membrane.

Conclusions: Lateral approach offered good accessibility and visibility of the sinus cavity, balloon lifting technique proved to be safe with minimal complications and provide sufficient bone height gain adequate for implant placement.

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Soft tissue grafting techniques for root coverage

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The purpose of this presentation is to give the clinician an overview of the various soft tissue grafting techniques that one would use to achieve root overage. Root coverage has become a very predictable procedure in recent times. Not only that, but there are different types of donor tissue available as well. One has a choice now between an autogenous graft versus an allograft. Even the allograft has more than one source. That is why it is imperative not only to understand the different indications for treatment, but also which donor tissue would achieve the better outcome. It is no longer a ‘one size fits all situation’. Not only should the clinician be aware of the differences, but the patient must also be made aware of the differences. Some patients have very definite feelings about which tissue should be used for their treatment.

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Periodontal considerations for implant dentistry (Gingivitis, Periodontitis, Peri-Implantitis): The connection and treatment

Donald P Callan, DDS
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Periodontal diseases are chronic, infectious and inflammatory diseases resulting from exposure of the periodontium to dental plaque, a complex bacterial biofilm that accumulates on the teeth. With periodontal disease the epithelial tissue, connective tissue and bone is damaged and the teeth and dental implants may be lost. To understand long-term survival of dental implants, the clinician must have a clear understanding of the epithelial tissue, connective tissue and bone relationships to the dental implant surfaces. Evidence suggests that periodontitis and peri-implantitis is the same disease and may contribute to the development or progression of local tissue breakdown and other systemic diseases or conditions. In light of the high prevalence of the periodontal disease, these associations may be important for the maintenance of dental implants and general health. Patients and health care providers must be informed that periodontal intervention may prevent the onset of hard and soft tissue breakdown or progression of various systemic diseases. Are the tissue relationships of dental implants the same as seen with teeth and will the dental plaque attack the dental implant tissues the same as seen with teeth? Will the tissue surrounding dental implants have the same response to dental plaque as teeth? These questions and others will be answered during the presentation. The purpose of this presentation to provide evidence-based information to evaluate the relationships of the hard and soft tissues of connection to dental implants and to determine if these tissues are subject to periodontal breakdown. To understand the mechanism by which periodontal infections may contribute to the destruction of periodontal tissues or the loss of dental implants and treatment.

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Topical application of statins for controlling periodontal immune responses: A revolution in periodontal disease prevention and treatment?

David Rosenberg
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Periodontal disease (PD) is an inflammatory-infectious and destructive disease of the tissues surrounding teeth. Despite scientific and clinical advances worldwide, at least 90% of the adult population continues to suffer loss of periodontal tissues and eventually dentition, thereby deteriorating quality of life and generating enormous spending on oral as well as general health of the population. While the Biofilm is considered the main etiological factor of PD, it is now known that the immune system plays a key role in pathogenesis; responsible for the majority of the tissue destruction. Indeed, bacterial antigens do trigger an immuno-pathological reaction, which determines the susceptibility of the patient to the final outcome of the process. Furthermore, while the reversible lesion; gingivitis; under certain immunological conditions (yet unknown), can progress to a more complex, irreversible and destructive condition; periodontitis, this does not seem to depend solely on the type and amount of bacteria present, yet on a dysfunctional immune response, that in turn determines the pre-disposition of the patient to tissue destruction. Hence, tackling such pathologies solely via a bacteriological approach is deemed insufficient for a well-established clinical diagnosis, prognosis and efficacious preventive and therapeutic strategies. In this lecture, we will present scientific evidence supporting the application and potential of statins in clinical Periodontology. Predominantly indicated for dyslipidemia, statins possess extra-lipid properties and immuno-modulatory effects that favor their use for cardiovascular diseases (CVD). Given, that CVD and PD share common paths in their physiopathology, our research group developed a statin-mediated toothpaste formulation and conducted a double-blinded controlled clinical trial, where the clinical efficacy (as an adjunct to conventional, periodontal treatment) was proved. Hence, the purpose of this presentation is to join forces with International University Research Centers and the pharmaceutical industry to develop a new generation of oral care products medicated with statins in order to impact the periodontal health indices of our patients and populations. It is an open invitation to fellow clinicians and researchers to be at the forefront of preventive and therapeutic periodontics; a revolution, perhaps one of the most significant in decades.

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Minimally invasive treatment of pseudo prognathism (class III) occlusion diagnosis and treatment procedure

Farhad Vahidi
New York University College of Dentistry, USA

This presentation will inform the participants about loss of vertical dimension due to the wear of the natural teeth and importance of diagnosis of pseudo prognathism due to loss of occlusal vertical dimension. Many treatment modalities have been cited in the literature for treatment of pseudo prognathism and worn down dentition. Many of these treatments require invasive dental procedures. The advances of material and adhesive technology have created the opportunity to restore the occlusal vertical dimension and worn down natural dentition with minimally adhesive methods. A step by step procedure for treatment of this type of abnormality will be presented in a severely worn dentition treated with minimally invasive method. Within this case presentation, the steps of restoring occlusal vertical dimension and selection of material based on their physical properties will be discussed.

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Exposed roots: When to graft, when to restore and when to do both

James Woodyard, D.M.D., M.S.
Woodyard Periodontics, USA

What do I do when a patient has exposed root surfaces? When does a patient need a tissue graft? What material do I use to restore an abrasion lesion? When do I not restore an abrasion lesion? That is a question I get asked very often. There are published guidelines for this situation. During this presentation, I will show you the answers to these questions and give you some guidelines you can take home to your practice. We will discuss diagnosis of cervical lesions and mucogingival defects, the simple way to predict results of different grafting techniques and some restorative materials that have been shown to be biocompatible.

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Incorporating autotransplantation into your clinical practice

John Kanyusik  
The University of Minnesota, USA

The current literature will be reviewed and the autotransplant technique described for this useful but underutilized technique. The advantages and disadvantages of autotransplanting both mature and immature teeth will be discussed. A number of cases will be presented to illustrate clinical situations where this technique should be considered. The protocols for incorporation of autotransplantation into an orthodontic treatment plan will be described.

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Innovation approach for prosthodontic management of microstomia

Kunwarjeet Singh  
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Rehabilitation of microstomia patients represents a great challenge. A maximal oral opening smaller than the size of a complete denture can make prosthetic treatment challenging. Patients with microstomia who must wear removable dental prostheses (RDPs) often face the difficulty of being unable to insert or remove a conventional RDP. A sectional-collapsible prosthesis is indicated for the prosthetic management of these patients, but reduced manual dexterity often makes intraoral manipulation of the prostheses difficult. A single collapsible prosthesis is a better choice for functional rehabilitation of these patients. This presentation will describe in detail the Prosthodontic management of a patient with restricted mouth opening by an innovative and novel single collapsible removable prosthesis fabricated with heat-polymerized silicone soft liner and heat-cured acrylic resin.

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Restoring endodontically treated teeth: An endodontic perspective

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Restoring endodontically treated teeth has been a controversial topic for many years. Nowadays, endodontics is going towards a minimally invasive approach and dentin preservation is the keyword. The objective of this presentation is to review current principles for restoration of the endodontically treated teeth based on the best scientific evidence available to date. Through an endodontic perspective, it is of paramount importance that when the endodontic therapy is concluded the tooth is restored immediately in order to avoid fracture and/or micro-leakage, which can jeopardize the success and longevity of the tooth. Temporary restorations do not effectively prevent contamination for extended periods of time. Endodontically treated teeth can be restored with a wide range of techniques of varying complexity; however retention and resistance to fracture must be taken into consideration. The ferrule effect must be observed and as a guide may prevent the overuse of posts in already weakened roots. Posterior teeth are the most affected by cracks after endodontic treatment and therefore full-cuspal coverage is still mandatory for prevention.

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Relation to peri-implantitis, bacteria and host immune factor

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The objective of the presentation is to provide a comprehensive summary of current perceptions with focus on the infectious etiology and factors that may enhance the risk for infection resulting in implant mucositis, or peri-implantitis. The etiology of peri-implantitis is multifactorial. The oral microbiota is not only diverse, it comprises of a dense population of microorganisms including both aerobic and anaerobic bacterial species ranging from obligate to facultative aerobic or anaerobic species. As soon as a dental implant is exposed in the oral cavity, microorganisms will start to colonize the exposed dental implant surface. Dental implant design and surface chemistry may have an impact on the invasion of oral microorganisms into the fixture-abutment interface. Bacteria usually not associated with periodontitis have, however, also been found in PICF at implants with peri-implantitis forming a cluster of pathogens with Treponema socranskii, Staphylococcus aureus, Staphylococcus anaerobius, Streptococcus intermedius, and Streptococcus mitis comprising 30% of the total microbiota. The occurrence of failing dental implants has been associated with low serum antibody titers and with low avidity levels to S. aureus. Profuse bleeding and/or suppuration in untreated peri-implantitis can be associated with higher concentrations of interleukin-1β, IL-8, tumor necrosis factor (TNF)-α and vascular endothelial growth factor VEGF in peri-implant crevicular fluid. The profile of inflammatory cytokines in implant crevicular fluid represents innate immune responses. Studies on successful treatment of implant mucositis, or peri-implantitis using traditional non-surgical debridement, laser therapy, antiseptics, and antibiotics have shown that have so far not allowed the development of predictable treatment modalities of inflammatory conditions of dental implant surrounding tissues.

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Dental implants: Complications, mishaps and failures

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Everyone knows that dental implants have a better than 95% success rate depending on who you read. But what do you do when faced with that other 5%. This presentation will cover the implant cases and situations that are not normally addressed at implant seminars. The presentation will review the implant components that have the greatest chance of having a mishap or failure as well as the types of failures that can and do occur. This will include everything from loose screws and broken bars to fractured implant bodies and abutments. It will also cover the consequences of peri-implant mucositis and peri-implantitis. Specific cases will be shown to demonstrate each mishap, complication or failure as well as the step-by-step procedures to repair, replace and put the prosthesis back into function. The standard of care states clearly that not only does a dentist have to have the knowledge for the placement of dental implants but also the knowledge of what to do when a complication, mishap or failure occurs. If he does not he should not place or restore implants.

Lysyl oxidase propeptide (LOX-PP) inhibits oral cancer metastasis and tumor growth by interacting with stromal cell-derived factor 1 (SDF-1), syndecan-4 (SDC-4) and syndecan-1 (SDC-1)

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The lysyl oxidase propeptide (LOX-PP) is derived from pro-lysyl oxidase (Pro-LOX) by extracellular biosynthetic proteolysis. LOX-PP inhibits oral cancer xenograft tumor growth and metastasis. Data indicate that LOX-PP inhibits distant metastasis of UMSCC2 oral carcinoma tumor xenograft by inhibiting shedding of SDC-1 and -4 ectodomains via down-regulating Stromal cell-derived factor 1 (SDF-1) activity. LOX-PP also binds both SDC1 and -4 and inhibits binding of FGFR1 to its ligand and the downstream signaling in non-metastatic oral cancer line SCC9. LOX-PP binds to SDC4 and inhibits SDC-4 oligomerization and FGFR1/FGF2/SDC-4 complex formation via SDC-4 to FGF2 binding in SCC9 cell line. We demonstrated that, LOX-PP promotes the formation of SDC-4/synectin/RhoGDI1/RhoG complex/monomer. Therefore, dissociation of RhoG from RhoGDI1 is suppressed and eventually Rac-1 activation and cell proliferation inhibited in SCC9 cells. We also demonstrate that the uptake for LOX-PP is SDC-4 dependent macro-pinocytosis and SDC-1 regulates uptake/recycling of LOX-PP in both UMSCC2 and SCC9 cell lines.

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The history and factors related to peri-implantitis: Where we are today?
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Peri-implant diseases, namely peri-implant mucositis and peri-implantitis are becoming a major health issue in dentistry today. It has recently been reported in the literature as presenting an alarming increase over time. The severity of these diseases and the challenge in its diagnosis and treatment lies in a multi-factorial etiology. Unfortunately, in the literature, many reviews and treatment options for peri-implantitis diseases are based on personal observation, case study reports or random investigations by evidence and results, rather than methodological analysis or systematic scientific evaluation. Clinical success of a treatment protocol on case-by-case bases or in particular clinician’s hands does not prove the validity of a treatment method. The objective of this presentation is to discuss a design and preventive protocol to create better conditions in diagnosis of peri-implantitis and consequentially predictable preventive treatment.

Restoratively driven surgical implant practice: From single tooth to full arch
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Successful implant therapy outcome relies on comprehensive planning and team approach. This presentation will focus on: Implant placement in the esthetic zone and discuss when to do extraction and immediate implant placement vs. delayed approach; Implant site development including hard and soft tissue augmentation and the type of materials will be presented; Digital dentistry using CAD/CAM restorations will be demonstrated showing the advantages over traditional restorations and; Different replacement options for the edentulous patient will be discussed.