



SCOTTSDALE

NOVEMBER 2 - 5, 2011

Member Speaker Forum

Thursday November 3rd 2011

1:00-1:15 PM Managing the Patient with a Worn Dentition



Paul A. Hansen, D.D.S.

University of Nebraska College of Dentistry

Currently Associate Professor and Director of Prosthodontics at the University of Nebraska College of Dentistry

Dental Education:

DDS University of Nebraska 1975

United States Air Force 1975-1995

One year oral surgical training 1978 US Air Force

Prosthodontics training, University of Texas Health Care Science Center, San Antonio, Texas and Wilford Hall Medical Center, San

Antonio Texas, 1981-1984

Certification:

Board Certification American Board of Prosthodontics 1986

Master, Academy of General Dentistry 1988

Prior positions:

Director of Graduate Prosthodontics – University of Missouri at Kansas City, 1995-2001

Private Practice 2001-2007 Overland Park, Kansas

University of Nebraska 2007- Present

Addendum:

20 publications on prosthodontics in various journals

2010 Judson Hickey Scientific Writing Award

Speaker internationally for over 30 years on prosthodontics

Voted teacher of the year 1999 and 2000 at University of Missouri – Kansas City

Teacher recognition awards classes of 2007,2008,2009,2010 University of Nebraska

Abstract:

Initial examination of a new patient occasionally reveals a severely worn dentition characterized by extensive wear and loss of tooth structure. Function and esthetics are compromised, and the prognosis for one or several teeth may be jeopardized if the problem is not corrected. The complex nature of this condition, and its multifactorial etiology, often overwhelms the general dentist with limited experience in treating such widespread tooth destruction.

This oral presentation will discuss how to treatment plan difficult cases, especially those cases with severe wear. The use of the diagnostic mounting is emphasized and the evaluation of interocclusal contacts is demonstrated. There is a significant difference in the types of bruxism that will affect the dentition. The use of the diagnostic mounting will aid in this evaluation.

The diagnosis when complete, will allow the clinician to begin to treat the patient. Treatment sequence to establish a mutually protective occlusion is paramount for a stable long lasting reconstruction. This oral presentation will examine the loss of tooth structure which can lead to possible changes in vertical dimension of occlusion, loss of esthetics, and wear into the pulpal chambers of individual teeth. Once the etiology is understood, a reconstruction can take place. The sequence of reconstruction will be documented. The diagnostic mounting can be combined with a full mouth wax up, the wax up will be a pattern to make provisional restorations which will mimic the desired final result. The final restorations will be placed with the knowledge that the occlusion will provide the patient with a stable long lasting result.

1:15-1:30 PM Ceramir C&B, A Bioactive Dental Luting Cement – Its Properties and Clinical Findings



*David Appleby, D.M.D., MScD, FACP
The Kornberg School of Dentistry at Temple
University*

Dr. Appleby received his DMD from the University of Pennsylvania in 1974; and, from Boston University, his certificate in Prosthodontics in 1978 and MScD in 1979. He is a Diplomate of the American Board of Prosthodontics and a Fellow of the American College of Prosthodontists. A former Director of Graduate Prosthodontics at Temple University, he is now a Professor Emeritus. He lectured on Fixed Tooth Preparation for the University of Michigan Board Preparation course; the bibliography of which was included in the "Parameters of Care" issue of the JOP. And he continues to serve as a member of the ANSI/ADA MS-156 Subcommittee on Aqueous Impression Materials.

Abstract:

Physical property, biocompatibility, and clinical efficacy tests were performed to assess the viability of a new bioactive luting cement for fixed restorative dentistry. Materials and Methods: Ceramir C&B (formerly XeraCem) is a hybrid of calcium aluminate and glass ionomer. When immersed in physiologic phosphate buffered saline solution, hydroxyapatite is formed. In vivo this activity is manifested through the precipitation of nano crystals at the interface of the prepared tooth resulting in mechanical interlocking and surface energy-based attachment of the calcium aluminate hydrate nano crystals with the tooth structure. Three to four hours after setting, Ceramir C&B reaches a basic pH of 8.5, a major contributing factor to its biocompatibility. Assessments of setting time, compressive strength, and film thickness all conformed to the International Standard Organization for water-based luting agents. Comparative retention tests demonstrated higher values than glass ionomer and zinc phosphate cement. Both dye and bacterial microleakage tests showed no mutagenicity. In vivo animal tests demonstrated an absence of pulpal inflammation. A pilot clinical study evaluated 38 crown and bridge

abutments cemented in 17 patients. Technical parameters, including ease of dispensing, working time, ease of seating and cement removal were recorded. Also noted were marginal integrity, marginal discoloration, secondary caries, retention, gingival inflammation (GI), and tooth sensitivity as recorded with the Visual Analog Scale (VAS). These clinical findings were recorded at baseline; six months; and one, two, and three years. Results: Mixing was 'effortless'; working time generous (2 min.); seating complete; and cement removal "easy". 15 of 17 patients were available for the one-year recall examination; 13 for the two-year; and 10 for the three-year. Restorations at the three-year recall included 10 single unit crowns, 4 – 3 unit bridges comprising 8 abutments, and one – 2 unit splint. No retentive failures were recorded after three years. Marginal integrity was excellent (alpha) for all restorations. The VAS for sensitivity decreased from 7.63 mm at baseline, to 0.44 mm at six months, to 0.20 mm at one year, to 0.00 mm at two and three years. The average GI score for inflammation decreased from 0.56 at baseline to 0.11 at six months, rose to 0.16 at one year and 0.21 at two years, and was 0.08 at three years. Conclusions: Three year recall data revealed no loss of retention, no recurrent caries, no loss of marginal integrity, and no subjective sensitivity. Within the limits of this study, Ceramir C&B has proven to be a successful luting agent after three years of function.

1:30-1:45 PM Implant Supported Complete Upper Dentures For Maxillofacial Patients Who Have Received Free Flap Reconstruction.

*Igor Pesun D.M.D., M.S.
University of Manitoba*



Dr. Igor Pesun is Associate Professor and Head of the Department of Restorative Dentistry, Faculty of Dentistry University of Manitoba. He completed his dental education at the University of Manitoba, and then a General Practice Residency at the Royal University Hospital in Saskatoon, Canada. He returned to set up a general practice in Winnipeg and was a part-time instructor and clinical researcher at the University of Manitoba. After 4 years of private practice he entered the Medical College of Georgia's (Now known as Georgia Health Sciences University) Graduate Prosthodontic Program and received a Certificate in Prosthodontics and a Masters in Oral Biology. He began his full time academic career at the University of Minnesota, School of Dentistry. As an active member of the department he taught in the undergraduate clinic, coordinated the preclinical prosthodontic curriculum and instructed the graduate prosthodontic residents in their didactic, research and clinical courses. As a Board Certified Prosthodontist in the USA and a Fellow of the Royal College of Dentists of Canada, his private prosthodontic practice provides restorative, maxillofacial, implant and esthetic dental care. He has published articles on basic, applied, clinical, and educational research. Dr. Pesun has been involved in a number of local, national and international organizations including the ACP and ADEA. He serves as a reviewer for a number of national and international dental journals and is an examiner for the Royal College of Dentists of Canada (Prosthodontics). Helping practitioners to expand their clinical practice

with contemporary techniques he has lectured to various groups in the Bolivia, Croatia, Canada, Japan, Mexico, Nicaragua and USA.

Abstract:

In the area of maxillofacial prosthodontics, dental implants has allowed patients to retain prosthesis when the anatomy post surgical reconstruction is less than ideal. Many maxillectomy patients receive free flaps to close the defect that occurs as a result of their resection. The free flap closes off the nasal cavity from the oral cavity thus making it easier for these patients to eat and drink. Speech is also improved as it is not as hypernasal. The consequence of closing off this defect is that a major retentive element that has been used in the past, namely the defect itself, has been lost. In the past the opening would be obturated and the lateral scar band could be used for retention of the prosthesis. The free flap surgical reconstruction results in a flat anatomy and poor tissue bed that is more difficult if not impossible to restore. Dentures adhesives are inadequate to retain the prosthesis and these patients require dental implants to retain their prosthesis. The resection surgery removes bone into which implants are usually placed. The search for adequate bone results in compromised implant placement and results in unique designs for the bars to be fabricated to retain the prosthesis. This presentation is of three cases of maxillary resection that have been restored with implant-supported bars to retain upper complete dentures. Each patient had a partial maxillectomy restored with a free flap to close the defect. One year after the free flap surgery, computer tomography was undertaken to evaluate the remaining bone and suitable locations for dental implants were determined. Surgical guides were fabricated and the implants were placed. 6 months post implant placement, implant supported bars were fabricated. The complete denture was fabricated and retained with various types of retentive elements dependant on the amount of space that was available. The use of dental implants makes it possible to restore patients who have had free flap reconstruction of their maxillary defects. The properly retained denture allows these patients to improve their ability to eat foods, speak clearer, and improve their appearance and overall self-confidence.

1:45-2:00 PM Teeth in an Hour with Computer Guided Surgery – Full Mouth Implant Borne Rehabilitation with Computer-aided design and computer-assisted manufacturing

Samantha Siranli D.M.D PhD

Unknow Institution



Dr. Siranli received her DMD degree from University of Pittsburgh. She completed a one year clinical Fellowship in Implantology in conjunction with the University of Pittsburgh School of Dental Medicine Department of Prosthodontics. Dr. Siranli also completed Advanced Hospital Dentistry Program and Maxillofacial Prosthodontics trainings at the University of Pittsburgh Medical Center, Montefiore Hospital. Dr. Siranli completed her Prosthodontics training in Medical College of Georgia. She became the Diplomate of the American College of Prosthodontics in January 2011.

Abstract:

The improvement of 3D dental diagnosis by ConeBeam computed tomography allows detailed preparation for the prosthodontically driven surgical placement of dental implants. The precision dental implant planning software and clinical execution with guided surgery have revolutionized dental implant diagnosis and treatment and created an interdisciplinary environment in which communication leads to better patient care and outcomes such as often loading the implants at the time of the placement.

Computer-aided design/computer-aided manufacturing (CAD/CAM) technology has also broadened the scope and application of the treatment options, allowing for ideal substructure design for optimal esthetics and biomechanics.

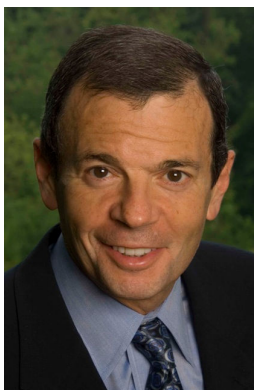
In this presentation, the data transfer method from three dimensional imaging, the preparation of surgical templates for guided dental implant surgery, the protocol of immediate loading with a preformed provisional full arch fixed prosthesis as well as the use of CAD/CAM technology in combination with zirconia for the full mouth implant borne rehabilitation have been described and discussed.

2:00-2:15 PM Treatment modality of extremely worn down dentition patient

Suda Takayoshi, D.D.S, F.A.C.P.

Unknown Institution

The worn down dentition is one of the most complex clinical situations in prosthodontics, not only because diagnosing and managing of cases are difficult, but also because multi-disciplinary approach is often needed for the occlusal reconstruction. In 1984, Turner categorized different types of extremely worn-down dentitions and suggested treatment modalities for each category based on the loss of occlusal vertical dimension and inter-arch distance available for restorations. This presentation will introduce three different approaches to achieve enough inter-arch distance for restoration and will discuss about comprehensive assessment of etiology, diagnosis, vertical dimension of occlusion. Detailed multi-disciplinary approach including diagnosis wax up, provisionalization, surgical procedures, etc.) will also be explained to achieve predictable final treatment outcomes.



2:15-2:30 PM Maximizing Soft Tissue Profiles: The Unrecognized Advantage of Implant Platform Switching

Jeffrey Dornbush, D.D.A.

New York University College of Dentistry

Dr. Dornbush has over 25 years of clinical experience, continuing education and teaching, and maintains a clinical practice of prosthodontics in Marblehead, Massachusetts. He graduated from New York University College of Dentistry in 1975, and completed the two year Advanced Graduate Study in Prosthodontics at the Boston University School of Graduate Dentistry in 1978. Dr.

Dornbush served as dental consultant and lecturer for Implant Innovations during its formative years. He co-authored publications on the subject of inter-disciplinary implant treatment in the “International Journal of Periodontics and Restorative Dentistry” ; Quintessence Publishing Company. He is a contributing author of the text: “Demystifying Smiles: Strategies for the Dental Team”.

Abstract:

Platform switching is the placement of a prosthetic abutment having a measured diameter that is narrower than the implant platform. The advantage of the implant platform switching has been predominately recognized on its ability to maintain post-restorative crestal bone level. However, much of its advantageous impact on the peri-implant soft tissue has gone unrecognized. The aim of this presentation is to bring to light the unrecognized soft tissue advantages that platform switching implant abutments offer.

2:30-2:45 PM Classifying Patients for Fixed Implant Protheses in the Edentulous Maxilla

Avinash S. Bidra, B.D.S., M.S., F.A.C.P.

University of Connecticut



Dr. Bidra is a Board Certified Maxillofacial Prosthodontist and an Assistant Professor at the University of Connecticut Health Center. He serves as Assistant Program Director of the Prosthodontics Residency Program. He completed his dental and specialty training from India, Florida and Connecticut respectively. He then completed his sub-specialty training in Maxillofacial Prosthetics from MD Anderson Cancer Center. His research interests include facial and dental esthetics, implant based reconstructions of the maxilla and

clinical outcomes of prosthodontic treatment. He has lectured at national and international meetings, as well as published on these topics in international journals. He is a member of the ACP, AAMP and AAFP.

Abstract:

Fixed implant-supported protheses for the edentulous maxilla have gained tremendous popularity over the years. It is necessary to treat each patient uniquely and avoid using a generic or a similar design of fixed prosthesis for all patients. Therefore, this presentation reviews a classification system that categorizes patients into 4 classes based on amount of tissue loss, position of anterior teeth in relation to residual ridge, smile line and need for lip support and gingival prosthesis. Class I patients are those who require gingival prosthesis to obtain adequate lip support, esthetic tooth proportions and optimal prosthesis contour. Class II patients are those who require gingival prosthesis only to obtain esthetic tooth proportions and for prosthesis contour. Lip support is not a consideration in these patients, because the difference in lip projection with and without any prosthesis is generally insignificant. Class III patients will not require any gingival prosthesis and Class IV patients are distinct as they are the only class of patients who have a high or a gummy smile; they may or may not require gingival prosthesis, based on the outcome of pre-prosthetic intervention for management of the gummy smile.

2:45-3:00 PM Integration of digital technology in the prosthetic rehabilitation: from

computer guided implant placement to CAD/CAM prosthetic finalization.
Gianluca Paniz, D.D.S, M.S., F.A.C.P.
TUFTS University, University of Padova



Dr. Gianluca Paniz achieved his DDS from Padova University (Italy) in 2002.

Since June 2003 he has been training at Tufts University School of Dental Medicine, Boston, MA (USA). In June 2006 he achieved the Certificate in Advanced Education in Prosthodontics, in September 2006 the Master of Science (MS) with a Master Thesis about color achievement with different crown systems, and in December 2006 the Certificate of Advanced Education in Esthetic Dentistry (AEED).

From January 2007 Dr.Paniz is working in Italy, in Padova and Verona, limiting his practice to Prosthodontics.

“Adjunct Assistant Professor” in the Department of Prosthodontics and Restorative Dentistry at Tufts University, School of Dental Medicine.

“Visiting Professor” in the Department of Implantology at Padova University School of Dental Medicine, developing different research protocols in the field of implant prosthodontics.

Member of the Italian Association of Dentists (ANDI), of the Italian Academy of Prosthetic Dentistry (AIOP) and of the Italian College of Prosthodontists (ICP).

Diplomate of the dell’ American Board of Prosthodontics and International Fellow of the American College of Prosthodontics.

Abstract:

Digital technology is contributing significantly to the development of implant dentistry and this presentation will focus on its application in the treatment of maxillary arches with high esthetic involvement.

Diagnostic softwares, combined with the basic principles of treatment planning, improve the clinician’s diagnostic ability bettering the evaluation of bone quantity and quality in relation to the prosthetic treatment plan.

Surgical stents allow a less-invasive flap-less implant placement procedure with a precision sufficient to better predict immediate loading. Knowing the expected implant position, improves the diagnosis and predictability of the immediate occlusal loading procedures.

Finally, the utilization of CAD-CAM technology improves the ultimate prosthetic protocols. By reducing technique sensitive procedures, the accuracy and the predictability of the prosthetic finalization, is increased.

This presentation will try to condense in a short time a balanced combination of basic principles with innovations as well as scientific background with clinical procedures.

3:00-3:15 PM (BREAK)

3:15-3:30 PM Successful veneered zirconia core restorations: Core material, core design and a porcelain-specific veneering protocol

Bernard Keough D.M.D., C.A.G.S

Howard Kay D.M.D., C.A.G.S.

Unknown Institution



Dr. Bernard Keough specializes in prosthetic dentistry and full-mouth reconstruction. After graduating Cum Laude from the University of Kentucky, he received his Doctorate of Dental Medicine from the University of Kentucky College of Dentistry and completed his training at Boston University School of Graduate Dentistry, where he received a Certificate of Advanced Graduate Study in Prosthetic Dentistry. Dr. Keough has presented clinical findings at international symposia in Germany, Italy, and Spain, and at meetings and study clubs throughout the United States. He has authored highly acclaimed articles for peer-reviewed publications including *The International Journal of Periodontics & Restorative Dentistry* and *Practical Procedures and Aesthetic Dentistry*. Along with Howard B. Kay, DDS, and periodontists Marvin M. Rosenberg, DDS, and Robert L. Holt, DMD, PhD, Dr. Keough co-wrote a landmark textbook on periodontal prosthetics, as well as a chapter on prosthetic dentistry in Harper & Row's *Clinical Dentistry*.

Dr. Keough has served as Adjunct Assistant Clinical Professor at Nova Southeastern University School of Dentistry, where he and Dr. Kay established the curriculum for the school's first Periodontal-Prosthetic program. He is a pioneer in the use of CAD/CAM technology and has, most recently, co-authored a paper published in the *Compendium of Continuing Education in Dentistry*, reporting the results of a 6-year clinical study using BIO-HIP Zirconia as the core material for bilayered all-ceramic restorations.

Abstract:

The success of bilayered all-ceramic restorations is dependent upon the combination and contributions of the three principal components of these restorations: core material, core design, and the core-veneer interface. This presentation will describe the fabrication and clinical survival of optimized ceramic restorations having an explicit, scientifically designed core that was machined from HIP'd isotropic zirconia. The cores were then veneered using thermally compatible porcelain with a protocol designed to strengthen both the veneer and the core-veneer interface.

Over a six-year period, 3,192 bilayered single and 797 bilayered splinted units were fabricated and placed on teeth and implant abutments in 1,007 patients. Approximately 61.7% (n = 2,462) were posterior restorations and 38.3% (n = 1,527) were anterior. Of the total, approximately 5.7% (n = 227) were placed on implant abutments. For the 3,989 units placed, 9 failures were recorded. Survival of all restorations was determined with the Kaplan-Meier method by tooth number.

Isotropic HIP'd zirconia was chosen for the core in this study, as it is FDA approved for medical implantable devices and is 99.9% porosity free. It is also a dual phase material that possesses the unique property of transformational toughening when subjected to excessive

stresses. A distinctive and scientifically developed design that strengthened the core while negating damaging interfacial tensile stresses at the core-veneer interface was devised. This design also protected the veneer from damaging shearing forces generated during occlusal function, while also allowing for optimal esthetics of the ensuing restoration. Veneering porcelain specifically formulated for zirconia, with a CTE less than that of zirconia, was used to complete the final structure. A documented protocol for porcelain application, one that relied on the principle of “fast cooling” after firing to strengthen the final restoration, was employed for that porcelain. Different systems and veneering porcelains requiring the use of other application protocols have had unsatisfactory success rates; however, the measures used in this study yielded results equal to or surpassing the equivalent-term success rates of porcelain-fused-to-metal restorations.

**3:30-3:45 PM GINGIVAL CERAMICS IN THE RESTORATION OF DENTAL
IMPLANTS: A PROPOSED CLASSIFICATION SYSTEM FOR THE
DENTO-GINGIVAL PROSTHESIS, AND ITS SELECTION CRITERIA**

*Mario Gatti D.M.D. F.A.C.P.
Tufts University*

Originally from Milan, Italy, Dr Mario Gatti attended Tufts University School of Dental Medicine where he received his D.M.D. in 2000. He then received a C.A.G.S. from Boston University School of Dental Medicine in for his residency in Advanced Education in General Dentistry. After working for three years as a general dentist in the Boston area, he returned to Tufts University where he completed a prosthodontics residency in 2007 and a Fellowship in Advanced Education in Esthetic Dentistry in 2008. In 2008 he became board certified at the American Board of Prosthodontics. In 2010 he completed a 2 years part-time Fellowship in Implantology at New York University College of Dentistry. Dr Gatti practices prosthodontics and implantology in the Boston area. He is a clinical instructor at Tufts University, department of graduate and post graduate prosthodontics. Dr Gatti is a diplomate of the American Board of Prosthodontics, a fellow of the American College of Prosthodontists, a member of the Greater New York Academy of Prosthodontics, a member of the Academy of Osseointegration, a member of the International Team for Implantology, Treasurer of the Tufts University Prosthodontics Alumni Organization and President Elect of the American College of Prosthodontists Massachusetts Chapter. He is fluent in English, Italian and Spanish.

Abstract:

The preservation or regeneration of a natural muco-gingival architecture is a challenging task for the restorative dentists because we are facing the dilemma of providing a consistently predictable esthetic outcome for our patients.

If in most situations, the surgical goal is to regenerate the ideal hard and soft tissue architecture prior to implant placement, in others, the use of gingival ceramics is a less invasive, stable and predictable long term option.

Objectives:

- Diagnose a hard and soft tissue defect and determine the ideal treatment and the proper treatment sequence, based the location, the extent of the defect, the smile line, lip support

and tissue biotype.

- Determine if, in the management of a defect, a regenerative or resective surgery is indicated and if a dental or a dento-gingival prosthesis is indicated.
 - understand the proposed classification system for the dento-gingival prosthesis based on the gingival ceramics interface location and identifiable anatomical landmarks,
- Review the different dento-gingival prosthesis (gingival ceramics on a coping, on a custom abutment or on a framework) and analyze their selection criteria

3:45-4:00 PM Student Perceptions of a Pre-doctoral Implant Curriculum: A five-year Report

Mijin Choi, D.D.S., M.S., F.A.C.P.

New York University College of Dentistry



Dr. Mijin Choi is a clinical associate professor at the New York University College of Dentistry (NYUCD) in the department of Prosthodontics. She has been a course director for Advanced Prosthodontics and Honors in Prosthodontics at NYUCD. She obtained her DDS degree from the Columbia University College of Dental Medicine. Dr. Choi completed her certificate in

Prosthodontics and a MS degree in Oral Biology at the University of Maryland. She then completed her sub-specialty training in Maxillofacial Prosthetics at Memorial Sloan-Kettering Cancer Center. She became a Diplomate of the American Board of Prosthodontics in 2004. Dr. Choi received the Claude R. Baker Faculty Award from the American Academy of Fixed Prosthodontics in 2010.

Abstract:

Implementation of predoctoral implant curriculum has been a subject of discussion for the past three decades. In recent years, more patients have become aware of the success of implant restorations as alternative treatment options to traditional fixed partial dentures. Evidence based success of implant therapy as well as public awareness has led to the expansion of the predoctoral prosthodontic curriculum to include implant dentistry. The purpose of this presentation is to discuss the five-year outcomes of a predoctoral implant curriculum with an emphasis on student perception. The New York University College of Dentistry program results indicate that the number of students who restored single implant crowns increased from 6% in 2006 to 100% in 2011. Recent graduates expressed confidence to treatment plan (89%) and confidence to restore implants (85%). This presentation discusses implant curriculum challenges and the upcoming CODA mandate for inclusion of and achieving competency in implant therapy within the predoctoral program.

4:00-4:15 PM Developments in Assistive Technology for Spinal Cord Injury Patients

Aaron G. Segal, D.D.S.

School of Dental Medicine, Stony Brook, NY



Aaron Segal is an Assistant Clinical Professor at the School of Dental Medicine at SUNY Stony Brook. He became a Diplomate of the American Board of Prosthodontists in

2010. He has been named the director of the Prosthodontic Postgraduate Program scheduled to begin in 2013.

Abstract:

Prosthodontics has been involved in the attempt to provide some degree of independence, thereby improving the quality of life for quadraplegics for over three decades. Mouthpiece devices have been described in the literature as early as 1956. These tools allow patients to do mundane tasks such as dialing a phone, turning pages of a book, using a computer, and grasping objects. The number of people in the United States in 2010 living with spinal cord injury has been estimated to be approximately 265,000.

In 1996 a Tongue Touch Keypad™ (TTK) was introduced (New Abilities System Inc. of Santa Clara, California) that consisted of a tongue-activated keyboard with nine pressure sensitive keys and a wireless communications controller embedded in an acrylic removable maxillary ancillary prosthesis. The user is able to operate the keys with their tongue that interfaces to multiple devices such as the user's wheelchair, computer, light switches, bed position and TV controls.

This device had many drawbacks and the company recently dissolved leaving the users of the device in dire straits, as the TTK plays a central role in their lives. This author, cooperating with the Department of Engineering at SUNY Stony Brook, is in the process of refashioning this device to make it less complicated to manufacture and test, thereby making it more accessible to the people who would benefit from it. The device has wide potential for use by people inflicted with cervical spinal cord injuries, as well as degenerative muscular diseases and late stage Parkinson's disease.

4:15-4:30 PM SURGICAL AND PROSTHETIC COMPLICATIONS associated with the IMMEDIATE LOAD 'ALL-ON-4' FULL ARCH RESTORATION TECHNIQUE

*Carl Brownd, D.D.S., M.S.
Unknown Institution*



Dr. Brownd received his D.D.S. from Baylor College of Dentistry in Dallas in 1978, and then completed a Dental Residency at the Veteran's Administration Hospital in Temple, Texas. He obtained his prosthodontic specialty training and received a Masters of Dental Science in Prosthodontics from the University of Texas Graduate School in 1982. He continued his training at UCLA and received a Certificate in Maxillofacial Prosthetics in 1983.

He is Board Certified as a Diplomate of the American Board of Prosthodontists and a Fellow of the American College of Prosthodontists. Dr. Brownd is a member of numerous dental societies, professional organizations, and past President of the Colorado Prosthodontic Society.

Dr. Brownd has been involved in Dental Implants since 1979. He served on the clinical faculty at the University of Colorado Dental School, the Children's Hospital Cleft Palate

team, and the St. Joseph's Hospital Dental faculty for many years. He maintained a private practice limited to Prosthodontics and Dental Implants in Denver for 24 years before relocating to Las Vegas where he opened a dental implant center.

Abstract:

The 'All-on-4' full arch implant restorative technique is becoming more popular as a viable approach to full arch restoration for debilitated partially edentulous and fully edentulous patients. Continued documented success with the 'All-on-4' technique is appearing in the literature, however many factors can influence the overall outcome.

This presentation will outline some of the surgical and prosthetic challenges and complications that have been encountered after treating over 600 full arch immediate load 'All-on-4' cases in the last three years.

Topics to be discussed will include:

Patient Assessment

Esthetic and Functional Considerations

Co-Treatment Planning between the Surgeon and the Restorative Dentist

Radiographic and C.T. Treatment Planning

Surgical and Prosthetic Complications

Several patient cases will be presented and reviewed.

4:30-4:45 PM Influence of Treatment Sequence in Optimizing Implant Esthetics

Miguel Vidal, D.M.D., M.S.

Massachusetts General Hospital/University of North Carolina



Dr. Vidal received his dental degree from the University of Pennsylvania School of Dental Medicine (D.M.D). He continued his specialty training at the University of North Carolina at Chapel Hill, where he was awarded a certificate in Prosthodontics and a Masters of Science (M.S.) degree. His main area of research focused on the development of cell based tissue engineering for clinical bone regeneration applied to implant therapy. Dr. Vidal has published articles in the Journal of

Prosthodontics and Quintessence of Dental Technology (QDT) and lectures nationally on topics related to prosthodontics and implant dentistry. Dr. Vidal was recently recognized as a "New and Emerging Speaker" by the American Dental Association (ADA).

Dr. Vidal holds a faculty appointment at Harvard School of Dental Medicine. He works as the staff Prosthodontist at the Massachusetts General Hospital (MGH) Division of Dentistry. Dr. Vidal oversees the Implant Task Force for the MGH/Harvard Wide General Practice Residency (GPR) program. He was awarded the "Partners in Excellence Award" for Clinical Leadership and Innovation from the Massachusetts General Hospital (MGH).

Dr. Vidal also maintains a private practice specialized in Prosthodontics and Implant Dentistry in Winchester, MA.

Abstract:

As the predictability of implant therapy has increased, patients esthetic expectations have risen as well. The implant restoration needs to integrate seamlessly with the natural dentition. An understanding of proper treatment sequencing is critical to achieve a highly successful esthetic outcome. Intimate coordination between the precise surgical aspect and the restorative phase is paramount in achieving consistent esthetic restorations. Factors that can impact the restorative outcome are often determined during the surgical aspect of treatment including extraction of teeth, timing and positioning of implant placement, and hard and soft tissue management. The role of provisionalization and abutment design is key in creating the appropriate peri-implant tissue volume. Determining the appropriate stage for when to place provisionals and engage abutments can have a profound impact on the esthetic outcome of the implant restoration. This program will discuss how different treatment protocols can be employed to achieve the desired esthetic outcomes.

At the conclusion of this session, the attendee should be able to:

- Understand the impact of treatment timing between the surgical aspect and the restorative outcome
- Recognize the role of implant provisionals in creating and maintaining soft tissue contours for implant esthetics
- Identify the essential design principles for provisionals and abutments and transfer this information to the dental technician

4:45-5:00 PM Influence of Commercial Denture Cleaners on Retention of Locator Abutments

Alfredo I. Hernandez, D.D.S., M.S.

Case Western Reserve University



Dr. Hernandez is a graduate of Javeriana University College of Dentistry in Bogota, Colombia. Dr. Hernandez received his first training in Prosthodontics from the Nueva Granada Military University (CIEO) in Bogota, Colombia. He works for five years at the Columbus Institute of Cosmetic Dentistry and two years with Dr. James Metz in private practice in Columbus, Ohio. Dr. Hernandez received his second training in Advanced Prosthodontics and Master of Science at The Ohio State

University in Columbus, Ohio. A member of several professional organizations including the Academy of Osseointegration, the American College of Prosthodontist, the American Dental Education Association, the American Association for Dental Research, and other organizations. At the present time, Dr. Hernandez is an assistant professor at Case Western Reserve University School of Dental Medicine, department of Comprehensive Care, and maintains an intramural practice limited to cosmetics, fixed, removable and implant prosthodontics in Cleveland, Ohio

Abstract:

The aim of this in-vitro study was to evaluate the influence of commercially available denture cleaners in combination with mechanical wear on the retention of nylon inserts of implant overdenture abutments.

Methods: 64 Locator implant abutments (Zestanchors) were screwed onto implant analogues, embedded in acrylic resin (Technovit 4004, Heraeus Kulzer). Retentive nylon inserts (color pink) were inserted into corresponding housings and divided in four groups. Each group was immersed in either distilled water (control; DW) or one of three different denture cleaner solutions: Efferdent (ED; Pfizer), Polident (PD; GlaxoSmithKline) and Stain Away Plus (SA; Regent Labs). Nylon inserts were stored in solutions for a total of 2,920 hrs to simulate immersion of 1yr for 8 hrs per day. Additional mechanical aging was performed by cyclic engaging and disengaging of the attachments in a chewing simulator for a total of 1,460 times to simulate removal of the overdenture for four times a day for one year. Tensile strength of each attachment was tested before (baseline) and after simulated 1, 3, 6, 9, and 12 months of use. To determine wear on metal abutments, retention was measured using nylon inserts, which were not subjected to storage in cleaner/water and mechanical ageing (CO). Statistical analysis was performed with Kruskal-Wallis and Mann-Whitney test at $\alpha=0.05$.

Results: Retention ranged from 24.7N at baseline to 5.32N after 12 months. All values decreased significantly after each aging interval ($p<0.05$), except for group CO, ED between month 6 and 9, SA between baseline and 1 month, DW between month 1 and 3, and 9 and 12 ($p=0.073$).

	ED	PD	SA	DW	CO
Baseline	21.30±3.99	22.58±5.97	24.27±7.77	24.71±5.07	21.77±3.85
1 Month	12.46±12.78	21.02±8.46	27.46±3.92	17.87±2.89	
3 Months	10.33±10.68	17.29±7.29	27.45±2.91	18.47±2.67	
6 Months	7.92±8.21	15.47±6.01	23.29±3.47	15.29±2.10	
9 Months	8.74±9.31	12.47±5.17	15.53±4.26	11.80±3.13	
12 Months	5.32±5.27	8.35±4.03	7.44±4.90	12.36±3.63	40.12±10.16

Conclusions: Artificial ageing decreases retention of Locator implant abutments already after 1 month, except for group SA. Loss of retention is caused by storage in cleaner, regardless of its composition, and by mechanical wear of the nylon insert.

5:00-5:15 PM Peri-Implant Disease Associated with Excess Implant-Specific Retrievable Cement: Diagnosis & Management. A Clinical Report.

*Farzam Maleki B.D.S., M.S., F.A.C.P.
Private Practice*



Dr. Maleki graduated from King's College School of Dental Surgery, University of London in 1992. Following five years of general practice, he entered the University of Minnesota to

pursue his graduate degree. In May 2000 he received his Specialist Certificate in Prosthodontics as well as a Master of Science degree. In December 2000 he joined Northwestern Memorial Hospital as an attending specialist, where he held a clinical assistant professor position with Feinberg (Northwestern University) Medical School, Division of Dental Surgery.

Dr. Maleki is a Diplomate of the American Board of Prosthodontics and a Fellow of the American College of Prosthodontists. He is licensed in the states of Arizona, Illinois and Minnesota. Dr Maleki is a member of the American Dental Association and the Arizona Dental Association & has been in private practice limited to Prosthodontics and Dental Implants in Scottsdale, Arizona since October 2002.

Abstract:

BACKGROUND:

Residual cement has been associated with clinical and radiographic signs of peri-implant disease, with the number of reported cases on the rise. The purpose of this clinical report is to demonstrate potential damage to peri-implant soft & hard tissues associated with undetected excess implant-specific cement.

METHODS:

A patient with a cement retained implant restoration reporting vague clinical symptoms is examined (*video format*). Clinical and radiographic history, from the time of implant placement to restoration through management of peri-implant disease will be presented. Treatment rendered, choice of cements available and cementation technique will be reviewed.

RESULTS:

After removal of excess cement and recementation with non implant-specific radiopaque cement, all signs and symptoms resolved.

CONCLUSIONS:

Dentists should be aware of hard and soft tissue damage that can be caused by excess resin based cements that are difficult to detect clinically and radiographically. Clinical examination technique presented to detect peri-implant disease will be beneficial to the restorative dentists.

5:15-5:30 PM The Accuracy of Fiducial Marker Based Implant Planning Software using CBCT Data

Marcus F. Abboud, D.D.S.

State University of New York Stony Brook

Objectives:

New Cone Beam CT (CBCT) scanners aid in the preoperative evaluation of bone and soft tissue contours, allowing a comprehensive risk assessment to be made by the clinician. In this study the accurate detection of fiducial markers used by many implant planning systems was measured in-vitro by different CBCT scanners.

Methods:

The accuracy of Cone Beam CT scanners (ProMax 3D - Planmeca; Finland/ Galileos – Sirona; Germany/ Accuitomo 80 – Morita; Japan/ PAX-Reve3D – VATECH; Korea/ Iluma - 3M Imtech; USA/ Koadak 9000 3D - Rochester/USA) was

compared to a medical CT scanner (Brilliance 64 – Philips; Netherland) and evaluated on a model with different geometrically known and constant fiducial markers (Sirona; Germany/ Straumann - Switzerland/ Bredent - Germany). In addition to this anatomic bone and teeth structures are scanned and evaluated using a human cadaver mandible.

Results:

Using the physical measurements as the standard, the experimental model looking only at the accuracy of the CBCT scans showed a minimum deviation of 0.1 mm. Most anatomic objects were accurately determined. For the fiducial markers, the mean maximum deviation was 0.56 mm. Differences from 0 to 1.27 mm were detected by the linear measurements on the 12 uniform 3 mm radiopaque fiducial marker within 1 CBCT scan. The CT scans were highly precise for the fiducial markers and the human bone and teeth structures. The maximum deviation was under 0.2 mm.

Conclusions:

The results from the model experiment indicate that there is room for improvement. The measurement of the CBCT scanners, in comparison to medical CT scanners, deviated from the original known fiducial marker measurements. This fiducial localisation error will cause a registration error in the implant planning software. This error is carried on through the whole implant planning process adding up with more potential errors and it will finally be implemented in the drill guide.

Friday November 4, 2011

8:30-8:45 AM Impact of Radiotherapy Dose on Dentition Breakdown



Mary Walker, D.D.S., PhD

University of Missouri-Kansas City School of Dentistry

Dr. Walker is a Professor and the Associate Dean for Research and Graduate Programs at the University of Missouri-Kansas City School of Dentistry where she also serves as the Director of the Oral Biology MS and PhD degree programs. Her academic credentials include a prosthodontics certificate, MS and PhD degrees. She has been involved in translational and clinical research focused on biomaterials and mineralized tissues. She is the author of more than 60 papers in peer-reviewed journals as well as

two book chapters.

Abstract:

To evaluate the severity of post-radiation dental lesions and possible correlation with radiation dose to the teeth in patients treated for head and neck cancers. **Methods:** Data from 93 head and neck radiotherapy patients enrolled in a retrospective clinical investigation were analyzed. Subjects' computerized radiotherapy plans were used to calculate the cumulative dose for each tooth. Subjects' teeth were evaluated using a validated index and then categorized as having none/slight or moderate/severe post-radiation damage. A mixed-effect logistic model was used to evaluate the effect of tooth-level radiation dose on tooth damage while controlling for other factors (covariates) including elapsed time after radiation, xerostomia, topical fluoride use, and oral hygiene status. **Results:** Subjects (31 females, 62 males) ranged in age from 18-82 yrs (mean = 57). The number of teeth/subject ranged from 3-30 (mean = 20) with a total of 1873 teeth evaluated. Average total radiation dose to the target volume was 63 Gy with individual tooth dose varying within and across subjects from 0-79 Gy. The elapsed time since radiation varied widely between subjects, 1-133 months. Overall, 51% of teeth demonstrated moderate/severe damage, with the remaining exhibiting little or none. Using odds ratios and 95% confidence intervals, between 30-60 Gy the odds for moderate/severe damage were 2-3x greater as compared to no radiation. However, for teeth exposed to ≥ 60 Gy as compared to no radiation the odds of moderate/severe tooth damage was greater by a magnitude of 10 times. **Conclusions:** The outcomes indicate there is minimal tooth damage below 30 Gy (salivary gland threshold), a greater than 1:1 increased dose-response between 30-60 Gy likely related to salivary gland damage, and a critical threshold of ≥ 60 Gy which may be linked to direct effects of radiation on tooth structure. These findings suggest care should be taken during radiotherapy treatment planning to limit tooth dose, and when clinically possible to limit tooth dose to less than 60 Gy. However, limiting the tooth dose is not always feasible; thus, additional research is required to better understand the mechanism of radiotherapy-induced effects on mineralized tooth substrates. (Supported by NIH/NIDCR grants K23DE01623 and R01DE021462)

8:45-9:00 AM Reconstruction and Immediate Load of the Severely Atrophic Mandible



Edward Amet D.D.S., B.S., M.S.D
University of Missouri-Kansas City School of Dentistry

DEGREES & TRAINING

- University of Puget Sound - BS 1965
- Northwestern University – DDS 1969
- United States Air Force dental corps– Captain 1969-72
- United States Army Reserve dental corps – Captain 1972-76
- University Missouri Kansas City –MSD Degree 1974
- University Missouri Kansas City – Certificate Prosthodontics – 1974
- Maxicourse in Oral Implantology–Externship Program, Brookdale Hospital Medical Center 1989-90
- Midwest Implant Institute – Externship Program, Implant training 1991-93

ACCREDITATIONS & CERTIFICATIONS

- Missouri State Dental License, 1973 & Prosthetic Specialty License 2008-current
- Kansas State Dental License, 1974 & Prosthetic Specialty License 1992-current
- Level 2 Anesthesia Permit-Kansas Since, 1991-current
- ACLS Certified 1993 and Recertified: 95-97-99-10
- BLS for CPR & AED & ACLS 1993-current
- Kansas Prosthetic Specialty Board, 1992-current
- Diplomate of the American Board of Oral Implantology/Implant Dentistry, 1992-current
- Diplomate of the American Board of Prosthodontics, 1994-current
- Recertification American Board of Prosthodontics: 2004-Current
- Fellow of the Academy of General Dentistry, 1983-current
- Fellow of the Midwest Implant Institute, 1993-current
- Fellow of the American Academy of Implant Dentistry, 1992-current
- Fellow of the American College of Prosthodontist, 1994-current
- Fellow of the Academy of Osseointegration, 1998-current
- Honored Fellow of the AAID, Selected by AAID, 2006
- Life Membership in ADA Granted June 11, 2008 Starting January 1, 2009
- Emeritus Membership in AGD Granted, Starting January 1, 2009
- Active Life Membership in American College of Prosthodontists Granted, Starting January 19, 2010

Abstract:

INTRODUCTION: Loss of bone in the mandible after tooth removal is not limited to alveolar bone; portions of the basal bone may also atrophy. This continuing loss of bone is associated with anatomical and aesthetic complications and the instability of the mandibular complete denture. If the remaining mandible is 6mm or greater and the prosthesis is totally implant supported, bone grafting is considered unnecessary. When the mandible is less than 6mm grafting is considered necessary.

METHODS: CBCT scanning for implant diagnostic planning with virtual surgery, onsite surgical implant placement, with prosthetic reconstruction and follow-up.

RESULTS: The type of grafting for the severely atrophic mandible usually involves: autogenous bone from the hip, general anesthesia, 3-6 months healing time before dental implants can be placed or loaded and the patient is unable to wear a mandibular prosthesis during the healing phase. In the current study of severely atrophied mandibles (4mm or less of body of mandible), a one surgical appointment technique for grafting and implant placement was used. For all patients treated; I.V. Conscious sedation was used with the immediate implant placement and simultaneous homologous bone grafting with PRP and loading of the implants with an immediate interim prosthesis. Thirty seven cases were completed having 6mm of native bone with 185 implants, 1989-99. Six cases were completed having 4mm of native bone with 30 implants, 2000-07. In all cases the implants were placed into the symphysis of the mandible three dimensionally, with maximum circumferential arch position, an increased A-P spread, a unique implant connecting bar, with a mandibular overdenture opposing a maxillary complete denture.

CONCLUSION: Single stage grafting and implant surgery with immediate prosthesis loading. No implants lost to date, observable crestal bone increase, patients satisfied with totally implant supported and stabilized prosthesis, with minimal dental office maintenance of O-ring retained prosthesis. Guided spontaneous bone regeneration apparent on CBCT radiographs with increase thickness and density of body of mandible when original height of mandible less than 6mm. This technique eliminates autogenous hip grafting to the mandible, uses homologous bone regeneration, and the patient is never without a mandibular prosthesis.

Learning objectives of Presentation,

Upon completion of this presentation, participants should understand and be able to discuss: Indications and limitations of using advanced dental imaging for diagnostic implant planning

- a. Indications and contraindications for this type of surgical treatment.
- b. Benefits and risks for this type of surgical treatment described.
- c. Prosthetic considerations for this type implant surgical/prosthetic treatment

9:00-9:15 AM Immediate Implant Therapy for A Failed Endodontically Treated Tooth: A Biological and Clinical Perspective.



Sompop Bencharit DDS, MS, PhD, FACP

University of North Carolina

Dr. Sompop Bencharit is an Assistant Professor in the Department of Prosthodontics, School of Dentistry and an Adjunct Assistant Professor in the Department of Pharmacology, School of Medicine at the University of North Carolina at Chapel Hill (UNC). He received his DDS and Clinical Diploma in Prosthodontics from Chulalongkorn University, Bangkok, Thailand. At UNC, Dr. Bencharit earned his Certificate and Master Degree in Prosthodontics, a PhD in Oral Biology, and a Certificate in Clinical Research. Dr. Bencharit is a Diplomate of the American Board of Prosthodontics and a Fellow of the American College of Prosthodontists. Beside prosthodontics, Dr. Bencharit is a protein structural biologist specializing

in protein X-ray crystallography and mass spectrometry proteomics. He has his research interests in structural biology and its applications to human diseases, in particular the role of signaling proteins involved in vascular development as well as peri-implant bone regeneration.

Abstract:

A failed endodontically treated tooth with a periapical infection frequently requires replacement with a single tooth implant. Immediate placement and provisionalization of an implant to replace a tooth with a periapical infection has recently become very popular. The success rate and clinical outcome of the procedure is comparable to immediate placement/loading of a dental implant in a non-infected site. This presentation will review the clinical and biological key parameters important in ensuring the success of this procedure and maximizing esthetic and functional outcomes. Biological aspects of periapical infection including anatomy, pathology, bacteriology as well as inflammatory response will be reviewed. Case-based scenarios will be used to present a step-by-step procedure. Diagnosis and treatment planning, in particular utilization of cone beam CT scans, will be discussed. Case selection and alternative treatment options will be emphasized. Clinical techniques including extractions, implant placement, and fabrication of provisional restorations will also be reviewed. The role of pre-operative antibiotics, debridement of extraction socket as well as grafting will also be discussed. Current literature, controversies, and future outlooks of the procedure will be summarized.

9:15-9:30 AM Design of an Innovative Prosthodontics Rotation for a Navy AEGD Program

*Barry M. Goldman, D.D.S., M.S.
U.S. Navy Coronado, CA*

Presentation will discuss the design of an innovative 3 week rotation for 10 AEGD residents. The emphasis of the rotation is on clinical aspects of fixed and implant prosthetics for the general dentist with intensive chairside mentorship by the prosthodontist. Learning objectives and evaluation parameters will be included.

9:30-9:45 AM Volumetric Misfit in CAD/CAM and Cast Implant Frameworks: A University Laboratory Study



*Riad Almasri, D.D.S.
Baylor College of Dentistry/Private Practice*

Dr. Almasri received his D.D.S. from University of Aleppo, School of Dentistry, where he graduated with honors. Dr. Almasri practiced general dentistry for several years prior to entering Nova SE University College of Dental Medicine, Ft Lauderdale, FL; he received his specialty certificate in Prosthodontics in June, 2010. Prior to his entering the Prosthodontic program at Nova SE University, Dr. Almasri worked as a dental

technician; Dr. Almasri continues to enjoy the laboratory part of dentistry. In addition to private practice Dr. Almasri is a Clinical Assistant Professor at Baylor College of Dentistry, Dallas, TX.

Dr. Almasri excels in his area of expertise (prosthodontics) and he has received considerable training in the surgical placement of endosseous implants. In addition to private practice, Dr. Almasri enjoys lecturing to both general dentists and specialists. He assisted at several hands-on courses in the Department of Continuing Education at Nova SE University and is scheduled to provide further Continuing Education courses at the same institution in 2011.

Abstract:

Purpose: The purpose of this research project was to compare the volumetric misfit between implant restorative platforms of implants and implant frameworks manufactured with two different technologies. One set of implant frameworks was made with a CAD/CAM protocol and a tactile probe; the second protocol consisted of frameworks made with the lost wax technique and conventional casting technology.

Materials and Methods: In this laboratory study, an acrylic resin model with five “interforaminal” implants was used as the “patient” model. Implant level impressions were made and 10 definitive master casts were fabricated. The casts were verified using an index made on the patient model. Five cast high palladium noble alloy and five CAD/CAM titanium alloy frameworks were fabricated. The patient’s implants and the frameworks’ implant restorative platforms were scanned with a tactile probe and the data were digitized. Via a computer software program, the digitized implant restorative platforms of the frameworks were fit onto the patient’s digitized implants in a process called “lofting.” This computerized procedure simulated a 1-screw test; the process was performed on both sides. The volumetric misfit between the implant restorative platforms of the frameworks and the patient’s implants were measured. A Welch’s t-test was used to determine significant differences ($p < 0.05$) between the misfit of the two different technologies. Wilcoxon Signed-Rank tests were used to evaluate differences between the right and left sides.

Results: On average, the volumetric misfit of the CAD/CAM frameworks was 1.8mm³ less than the volumetric misfit of the cast alloy frameworks ($p < 0.05$). The Wilcoxon Signed-Rank tests showed no significant differences between the right and left sides within both systems ($p > 0.05$).

Conclusions: The scanning technology and computer software program used in this study, demonstrated that the CAD/CAM implant frameworks had a statistically significant less volumetric misfit when compared with the cast implant frameworks. There were no significant differences between the right and left 1-screw tests within the same type of frameworks.

9:45-10:00 AM Hard and Soft Tissue Reconstruction Following Severe Facial Trauma

*Keith Boenning DDS
Unknown Institution*

Keith A. Boenning, D.D.S. is a prosthodontist who focuses on cosmetic, implant and reconstructive dentistry. His practice is in Baltimore, MD and he is a graduate of the University of Maryland Dental School and its post-graduate prosthodontic program. He has lectured extensively on implant and esthetic dentistry and enjoys photography, painting and any warm beach.

Abstract:

This case illustrates a successful reconstruction of missing teeth, bone and soft tissue utilizing dental implants, conventional and pink porcelain plus pink composite following severe facial trauma.

A 25-year-old woman presented with recent facial trauma caused by a boating accident while on her honeymoon. While on a Jet Ski, a speedboat going 70 mph. crashed into her face resulting in multiple fractures of the mandible, orbits and other facial bones. She lost four maxillary and two mandibular teeth, plus a sizeable amount of the surrounding bone.

Immediate care was performed by a local oral surgeon and after initial healing the patient pursued definitive reconstructive treatment for her missing teeth and deformed face. Another oral surgeon performed facial plastic surgery as well as extensive bone and soft tissue grafting procedures. A titanium meshwork was utilized in the maxilla to help form a ridge with graft material. Four maxillary and two mandibular implants (Nobel Active) were placed and upon adequate integration were all restored as individual crowns by another dentist. The maxillary crowns were esthetically unacceptable due to a high lip line that revealed dark vertical facial embrasure lines formed by the individual pink porcelain of each unit.

A new design was used for her current prosthesis. Due to the large volume of bone and soft tissue still missing it was necessary to fabricate a continuous prosthesis rather than individual units. A metal substructure was fabricated that screwed directly to the implants and the esthetic overstructure was connected by two lingual screws. The prosthesis was designed with a large amount of pink porcelain to replace lost bone and soft tissues. Various shades of pink composite (Gradia Gum Shades; GC Corp.) were used to customize the gingival tissues. Composite was added at both mesial and distal ends to blend into the surrounding tissues.



10:00-10:15 AM Severe and Rapid Erosion of Dental Enamel from Swimming: A Clinical Report

*Leila Jahangiri, B.D.S., D.M.D., M.M.Sc.
New York University*

Dr. Leila Jahangiri completed her B.D.S. at King's College, University of London; followed by D.M.D., Certificate in Prosthodontics, and Masters of Medical Sciences degrees from Harvard School of Dental Medicine. Having taught undergraduates and residents in dentistry and Prosthodontics at Harvard, the University of Medicine and Dentistry of New Jersey, and New York University College of Dentistry, her expertise is in innovative curriculum development. She has been an active clinician, researcher and teacher since 1991. She has authored numerous scientific articles and two books which focus on Prosthodontics and *Teaching Effectiveness*. Currently, she is the Chair, Department of Prosthodontics at NYU.

Abstract:

Diagnosis and treatment for a patient presenting with excessive and rapid erosion of enamel is presented. The presentation will be a review of the causes of erosion. Although the Center for Disease Control and the dental literature have reported cases of dental enamel erosion resulting from pool chlorination, the awareness of such etiology among the dental professionals may be limited. Common findings in these reports include cold sensitivity, distinctive look of laminate preparation on facial of anterior teeth, appearance of diastemata, and at times rough or gritty appearance of the remaining tooth structure. Clinical presentations of erosive lesions can be diagnostic and determine the best course of treatment.

10:15-10:30 AM (BREAK)

10:30-10:45AM Using an Occlusal Scan to Monitor Immediate and Final Implant Restorations

*John S. Chang, D.M.D., M.M.Sc.
Harvard University*

The use of occlusal scanning device can facilitate immediate lading procedures and enhance laboratory communications for implant supported full mouth ceramic restorations. The device is useful in full mouth immediate loading procedures because the clinician can determine what the occlusion looks like at the time the appliance is delivered. Occlusal irregularities can be noted and immediate repairs instituted. Obstructions that take place during excursive movements can be eliminated. This provides for mutually protected occlusion. Communication is assured with the dental laboratory. This occlusion must be precise when making complex ceramic restorations, especially with a zirconia frame and a zirconia superstructure. It should be very similar when viewed from the articulator and upon intraoral appliance insertion. The laboratory technician and dentist can compare results in real time even though they are in different geographic locations. The dentist can measure up to eight μ for occlusal contact. This system can help reduce patient visits, enhance communications and, ultimately, provide a better restoration. Two cases will be presented-one of immediate loading and one

with a fixed implant supported zirconia restoration. Emphasis will be made to correlate occlusion to the laboratory phase and the clinical placement.

10:45-11:00 AM The A – P Spread Revisited, Fact or Myth?



*Saul Weiner D.D.S.
Hoda Yousef D.M.D, M.S.
Rakan Baaq D.D.S.
Yasser Alali, D.D.S.
New Jersey Dental School*

Dr Weiner is a Professor in the Departments of Restorative Dentistry and Oral Biology at the New Jersey Dental School. He is a Fellow of the American College of Prosthodontists.

Abstract:

Cantilevered prostheses are frequently utilized to avoid anatomic structures such as the mandibular nerve and maxillary sinus. The current use of these prostheses are based upon treatment planning principles that are not evidence-based and are vague in definition. The goal of this presentation will be to present a brief systematic review of our current state of knowledge regarding the use of these types of restorations and propose a list of criteria useful in treatment planning the mandibular cantilevered prosthesis

11:00-11:15 AM Occlusal and Biomechanical considerations in Implant- supported Prostheses

*Mohammad Dashti D.M.D., C.A.G.S
Roxana Hashemian, D.D.S.
Boston University*

Education:

- Certificate of Advanced Graduate Studies in Prosthodontics
Boston University School of Dental Medicine
Boston, Ma., USA
1989-1991
- Doctor of Dental Medicine
Boston University School of Dental Medicine
Boston, Ma., USA
1984-1988
- Bachelor of Science in Biology
University of Southern California
Los Angeles, Ca, USA
1979-1983

Professional affiliations:

- Member of the American College of Prosthodontists
- Member of the Academy of Osseointegration
- Member of the Iranian Association of Prosthodontists

Academic experience:

- Assistant Professor

Department of Restorative Sciences and Dental Materials
Postgraduate Prosthodontics
Boston University School of Dental Medicine
November 2010 to present

-Assistant Professor

Department of Removable Prosthodontics
Azad University School of Dentistry
Tehran, Iran
September 1997- July 2010

- Assistant Professor

Department of Removable Prosthodontics
Shahid Beheshti University School of Dentistry
Tehran, Iran

July 1992- July 1997

- Several published scientific articles
- More than 60 national and international lectures and presentations
- More than 20 years of private practice limited to prosthodontics.

Abstract:

After the achievement of Osseointegration with proper crestal bone and gingival health, the mechanical stress or strain beyond the physical limits of hard tissues is probably the primary cause of bone loss around the implants. Biomechanics concerns the response of biological tissues to applied loads. The primary responsibility of the restorative dentist is to design and deliver the type of implant-supported prostheses which can minimize and dissipate the occlusal and other intra-oral forces to the supporting bone. The magnitude of force depends on two variables; force magnitude and cross-sectional area over which the force is dissipated. Force magnitude can be minimized by proper design of the prosthesis, choice of the occlusal materials, use of occlusal splints, and prescription of overdentures instead of fixed prostheses, when indicated. Increasing the number of implants and selecting an implant geometry which maximizes the functional cross-sectional area will be another efficient method to decrease the overall stresses to the bone. In this presentation, original clinical cases will be presented to demonstrate the different aspects of occlusal and biomechanical considerations in implant-supported prostheses. Emphasis will be on the details of achieving an optimum occlusal equilibrium as well as on the complications which may arise clinically.

11:15-11:30 AM Resolution of a functional problem of a milled-bar implant- supported overdenture with the use of a new electroplated suprastructure and MK1 attachment

Maria Protopadaki D.D.S., M.C.S
University of Buffalo



I was born in Athens, Greece where I completed my DDS degree. I obtained my certificate in Prosthodontics at the State University of New York at Buffalo along with my Master's degree in Oral Sciences. My thesis was on "Fracture resistance of pressable fused to metal custom implant abutment". In 2010, I completed an Implant

Fellowship at the State University of New York at Buffalo, USA. Currently, I am back in Greece and work at my private practice in Glyfada, Athens as well as at the Dental School of Athens as a clinical instructor.

Abstract:

The integration of dental implants in everyday dental practice has opened up new horizons in the rehabilitation of fully edentulous patients and has revolutionized our ability to provide them with customized treatment plans. A milled-bar implant-supported overdenture is a valid alternative prosthetic solution. This prosthetic design is characterized by a milled-metallic bar that is screw-retained to the implants and an overdenture with a custom suprastructure fabricated to the milled bar. The retention is achieved by friction between the bar and the suprastructure achieved by custom milling the gold suprastructure to the milled bar, and Ceka attachments. This design may be used in the mandible or maxilla.

The purpose of this oral presentation is to demonstrate a prosthetic solution to overcome the obstacles generated by an unstable maxillary overdenture on a milled bar. The case of a 54-year-old Caucasian male who presented to the prosthodontic clinic with the chief complaint “my upper denture is loose” is discussed. The patient was fully edentulous and had 5 maxillary and 4 mandibular implants. The prosthesis he was provided included a gold milled bar that was screw-retained to the implants and an overdenture with a gold electromilled suprastructure and four Ceka attachments, both for the maxilla and the mandible. The lower prosthesis was quite successful while the patient was encountering problems with the upper one in terms of stability and retention both upon speech and mastication. The patient was very satisfied with the aesthetics of his prosthesis. The diagnostic phase revealed that there was a poor fit between the milled bar and the electromilled gold suprastructure.

In order to overcome the functional problem, the gold implant bar was remilled and a new suprastructure was custom electroplated to the newly remilled cast gold bar. For additional retention, the non-resilient, positive locking, frictionless MK1 attachments were used to lock the overdenture to the milled bar. The position of the teeth was maintained in a new wax up and processed with no changes to the appearance of the prosthesis. The patient was very satisfied with the retention and the stability of his final prosthesis.

11:30-11:45 AM Prosthodontic Treatment and 2 Year Follow Up of Two Siblings with Chediak-Higashi Syndrome



*Henry Y. Wu, D.D.S.
Private Practice*

Dr. Henry Wu received his dental degree from Taipei Medical University in Taiwan in 1978. He then completed 3 year general practice residency at V.A. Hospital in Taipei in 1983, prosthodontic training with master degree at Northwestern university in 1985 and Maxillofacial prosthodontic training at Roswell Park Memorial Institute in 1986. He became a diplomat of American Board of Prosthodontics, a fellow of American College of

prosthodontists in 1991 and of American Academy of Maxillofacial Prosthetics in 1995. He has been a part time faculty member at UCSF since 1989 and left school at position of clinical professor in 2010. He has two private practice offices in Oakland and Milpitas, California.

Abstract:

Chediak-Higashi syndrome is a rare autosomal recessive disorder which involves mutation of the lysosomal trafficking regulator gene resulting in abnormalities of neutrophil chemotaxis, degranulation, and bactericidal activity. Clinical manifestations include neutropenia with recurrent pyogenic infections, coagulopathies, and progressively debilitating neurologic symptoms. Development of lymphoma-like progression in late childhood is often fatal.

Two siblings with Chediak-Higashi syndrome a brother and sister are reported. Both presented with severe juvenile periodontal disease in infancy and early adulthood leading to loss of the permanent dentition. Both also demonstrated severely under-developed maxilla in all dimensions. Functionally and mentally unsatisfied with wearing complete dentures, they sought “fixed type” denture prosthesis to improve their quality of life and self-esteem. Treatment of the maxilla included two zygoma implants and two “speedy groovy” implants (Nobel Biocare). Two straight and two angled “speedy groovy” implants were placed in mandibular arch with placement of immediately loaded complete dentures. A second set of horse-shoe type complete dentures with metal bases, attached to the maxillary milled bar and mandibular Hader bar were fabricated one year later. Despite adequate oral hygiene and regular clinical prophylaxes during two year follow up gingival inflammation and hyperplasia persisted. Gingivectomy combined with peri-implant placement of Arestin microspheres (minocycline hydrochloride) was necessary to resolve the chronic periodontal inflammation. The implants are currently stable 2 years following placement. Long term antibiotic administration and vigorous local therapy are indicated for continued management. This is the first report of dental implants placed in siblings with this difficult immune deficiency disorder.

11:45AM-12:00 PM The First Choice Standard of Care for the Edentulous Mandible: A Delphi Survey of Academic Prosthodontists in the United States
Kavitha Das, B.D.S., M.P.H., M.S.
New York University College of Dentistry

A Delphi Method survey was administered to a panel of academic prosthodontists representing 16 of the 17 ADA Trustee districts in the United States. The goal of the Delphi survey was to determine a consensus on the “first choice standard of care” for the edentulous mandible when comparing the two implant retained mandibular overdenture (IRMOD) with the conventional mandibular complete denture (CD). A consensus was defined as equal or greater than 70% agreement among the panelist and was attained for all parameters within the

survey with the exception of esthetics. The findings of this extensive survey are presented indicating that the panelists would recommend IRMOD over CD as the “first choice standard of care” for patients who are healthy or have mild systemic disease. The panelists agreed that IRMOD improves mastication, retention, stability, confidence, self esteem, and preserves anterior mandibular bone. The discussion focuses on mechanisms to convey this consensus to the greater community of practitioners and patients.

12:00-12:15 PM Horizontal and vertical dimensional changes of peri-implant facial bone following immediate placement and provisionalization of maxillary anterior single implants: a 1-year cone-beam computed tomography study

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The fate of the facial bone following maxillary anterior single immediate implant placement and provisionalization (MASIIPP) has been debated. Methods have been used to assess the facial bone, but they are invasive or not sequentially reproducible. This cone-beam computed tomography study (CBCT) evaluated the horizontal and vertical dimensional changes to the facial bone following MASIIPP.

Twenty-one patients were evaluated using CBCT scans taken immediately following surgery (T1) and at 1-year following surgery (T2). The mid-sagittal cut of each implant was identified and measurements were made at predetermined levels. Horizontal facial bone thickness (HFBT) was measured at 0 (implant platform), 1, 2, 4, 6, 9, and 12 mm apical to the implant platform. Vertical facial bone level (VFBL) was the perpendicular distance from the implant platform (0) to the most coronal point of the facial bone. The HFBT and VFBL were recorded and changes between T1 and T2 were calculated.

At T2, the mean HFBT changes at 0, 1, 2, 4, 6, 9, and 12 mm levels were -1.23 ± 0.75 mm, -0.64 ± 0.55 mm, -0.46 ± 0.27 mm, -0.48 ± 0.29 mm, -0.50 ± 0.31 mm, -0.32 ± 0.29 mm, -0.08 ± 0.24 mm, respectively. The mean VFBL change was -0.82 ± 0.64 mm. The HFBT changes at 1 – 9 mm levels were not significantly different from one another ($p > .05$), but were significantly lower than the change at the 0 mm level ($p < .05$), and significantly greater than the change at the 12 mm level ($p < .05$). Significant positive correlations were observed only between HFBT change and VFBL change ($r = .55$, $p = .01$), and between HFBT change and initial VFBL at the implant platform level ($r = .44$; $p = .046$). While the VFBL of 7 implants (33%) and 1 implant (5%) were apical to the implant platform and 1 mm level respectively at T2, none was noted at T1.

Dimensional changes to the peri-implant facial bone following MASIIPP should be expected. Greatest HFBT change was noted at the implant platform level in

part because HFBT change is correlated to the initial VFBL and VFBL change at that level.

12:15-12:30 PM Just want my teeth to look natural – The way they were before the accident...

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Dr. Douglas Benting graduated from the University of Minnesota School of Dentistry in 1999, completing the prosthodontic specialty program with a Master's of Science in 2002 and is a Fellow of the American College of Prosthodontists. Currently, Dr. Benting maintains a solo prosthodontic referral practice in Phoenix, Arizona, participates in the prosthodontic clinic as an Adjunct Faculty member at Arizona School of Dentistry and Oral Health and is a Visiting Faculty member at Spear Education in Scottsdale. He is a past-president of the AZ section of the ACP and has participated in ACP committees and promotional events geared toward dental students.

Abstract:

Patients that have endured a significant oral injury as a result of trauma present unique challenges in terms of expectations for the definitive result. With information available from a variety of sources, an informed patient seeks help navigating through a complex restorative treatment plan that may involve several choices. The goal is to create an experience that involves the patient in decision making while guiding the restorative process by what is possible from a biomaterials perspective through a series of questions and visual aids.

The design of the dental implant supported restoration was based on helping the patient analyze the treatment options at three key points in the process: 1. The initial diagnostic set-up transferred intra-orally in bis-acrylic to visually demonstrate the considerations related to tooth arrangement, 2. The diagnostic set-up with teeth in wax to coordinate the contours of the interim prosthesis with the soft tissue support of the upper lip, and 3. The contours of the provisional restoration to influence tissue contour allowing for a hygienic intaglio surface with an appropriate seal to accommodate for speech sounds and allow for the evaluation of prosthetic tooth and tissue color as well as contacts with adjacent teeth.

The definitive dental implant supported restoration was designed as a hybrid screw-retained/cement-retained prosthesis in the maxillary anterior (6-12a), and a cement retained prosthesis for the mandibular anterior (21-27). The porcelain fused to the cast metal framework provided the opportunity for optimal color, proportion and character of the teeth. Pink porcelain was applied to the intaglio surface of the restoration as well as to the prosthetic free gingival margin area. Gingival shaded composite resin was applied between the free gingival margin area and the intaglio surface to providing the reddish appearance to the gingival aspect of the restoration

