

ACP2015

PROSTHODONTICS

45TH ANNUAL SESSION • OCT. 21-24 • ORLANDO

2015 Member Speaker Forum

Chair: L. Scott Brooksby, DDS, BS

Friday, October 23, 2015

11:30 AM – 3:45 PM

Coral Ballroom

3.25 CE Credits

11:30 a.m. – 3:45 p.m.

Member Speaker Forum

11:30 – 11:40 a.m.

Introduction

11:40 a.m. – 11:55 a.m.

Digital Denture Fabrication in Pre- and Postdoctoral Education: A Survey of U.S. Dental Schools

Monica A. Fernandez, DDS, MS

University of Florida College of Dentistry

An invitation to participate in an online 20-item survey was sent to 52 prosthodontics/restorative department chairs of U.S. dental schools and to all 50 program directors of postdoctoral prosthodontics programs to identify the current trends in complete denture fabrication using CAD/CAM technology. This survey was used to determine how and to what extent this technique is taught and used in U.S. predoctoral and postdoctoral prosthodontic programs. A dependent samples paired t-test was run on items that were the same in both surveys. The response rate for the survey was 63% for department chairs and 44% for program directors. All program directors and department chairs who participated in the survey are aware of this technology with the exception of one department chair. More than half of the program directors reported that they have incorporated this technology in their curricula compared to only 12% of department chairs. Currently, only 10% or less of complete denture cases are processed using the CAD/CAM technology, at either the post- or predoctoral levels. Both groups reported that the main use of this technology is for the fabrication of denture bases and for processing dentures including the try-in step. The majority of respondents in both groups indicated they plan to add digital denture fabrication into their curricula within the next 1 to 4 years.

No disclosures

11:55 a.m. – 12:10 p.m.

Using Computer-Aided Planning for Single Tooth Immediate Implants

Sompop Bencharit, DDS, MS, PhD, FACP

University of North Carolina School of Dentistry

Computer-aided treatment planning has been widely used in single immediate implant surgery to give the operator insight into the dimensions of an implant in relation to the extraction socket and adjacent anatomical structures. However, little is known on the accuracy of using computer-aided planning in the placement of single immediate implants. This study included 18 clinical cases of single immediate implants performed together by two surgical operators. Preoperative cone beam computed tomography (CBCT) scans were used to plan implant position, while postoperative scans were used to measure the implant position after insertion. The implant displacements in the mesio-distal and the facial-lingual dimension were measured, as well as changes in the angulation of the planned and actual implant position in relation to the clinical crown. Box plots and 95% confidence intervals were used for means of paired differences between the planned and actual implant positions. The data showed no statistical difference between the planned position and final implant placement position in any significant

measure. The study suggests that utilization of a computer-aided implant planning program may enhance the accuracy of single immediate implant surgery.

Disclosures: Zimmer Biomet Dental

12:10 – 1:45 p.m.

Lunch

1:45 – 2:00 p.m.

Management of Biological and Mechanical Complications with the All-on-4® Prosthesis

Sameh K. El-Ebrashi, BDS, MS, FACP

Portland, OR

The All-on-4® protocol using immediate implant placement and immediate loading has become a popular concept in clinical practice. This approach relies upon a TEAM philosophy, with a collaborative effort between the prosthodontist, the surgeon, and the dental technician. A critical part of the procedure is the creation of space:

1. Biological space for implants & abutments,
2. Prosthetic space for the prosthesis

Failure to plan using the TEAM approach leads to failures: esthetic, biological or biomechanical.

Biological failures are rare. Biomechanical failures are more prevalent, and vary from loose or fractured screws, rarely titanium framework failure, and most commonly acrylic fracture. This presentation will give some guidelines regarding optimum treatment planning, and management of these complications.

No disclosures

2:00 – 2:15 p.m.

Altering Occlusal Vertical Dimension: When, Why & How?

Heba T. Elkassaby, BDS, MDSc

Stony Brook University School of Dental Medicine

Vertical dimension is defined as the distance between two selected anatomical or marked points. Several clinical situations require restoring occlusal vertical dimension (OVD) include gaining restorative space for a severely worn dentition, enhancing facial and dental esthetics, obtaining physiologic occlusion, and minimizing the need for biologically invasive clinical procedures. It is commonly assumed that extensive occlusal wear results in decreased occlusal vertical dimension. However, there is no definitive evidence to support this concept. Rehabilitation of an increased occlusal vertical dimension may cause postoperative problems such as clenching of teeth, muscle fatigue, soreness of teeth, muscles, and joints, headache, intrusion of teeth, fractured porcelain, occlusal instability, and continued wear. Therefore, it is critical to verify loss of occlusal vertical dimension prior to restoration at an increased/established occlusal vertical dimension. However, to date, there are no clear objective guidelines that determine the ideal increase of the OVD that can be physiologically tolerated by the

patient. Loss of OVD without further treatment can be problematic functionally, parafunctionally, and esthetically.

No disclosures

2:15 – 2:30 p.m.

Biomechanical Occlusion: A Different Perspective

Steven H. Feit, BS, DMD, CAGS

Boca Raton, FL

Using hinge axis: identified anatomical relationships that enhance the accuracy for orienting dental casts identified on an articulator.

The dental literature describes many ways to mount dental casts on an articulator. The ability to place dental casts on an instrument on hinge axis is the basis for the success of all that follows in the dental clinical setting. If the casts are mounted in a position that is not coincident with hinge axis error results requiring corrections. This presentation describes key anatomical relationships that facilitate the orientation of dental casts on hinge axis. Hinge axis is the basis and starting point for treatment planning, fabrication of restorative devices, and occlusion. With this anatomical relationship discovery, a predictable technique for mounting dental casts is possible. Once the casts are mounted or oriented properly to the condylar element of whichever articulator is used, the clinician is able to analyze intra-arch and inter-arch relationships, treatment plan, and fabricate accurate dental restorations. A thorough review of the literature was completed and no articles discuss hinge axis with regard to dental cast orientation. The face-bow is “arbitrary” and fails to utilize the only true anatomical relationship with respect to hinge axis. The goal of the face-bow or any other such instrument is to record the hinge axis. To date it is not possible to do so. The maxilla does not rotate on hinge axis, the mandible does. This critical anatomy needs to be captured in our impressions, maintained on the dental cast, and then recognized, identified, and utilized. We try to use the face-bow to transfer our dental casts to the articulator. The hope is to try to orient the upper cast to the hinge axis when in fact the mandible is what rotates on hinge axis. Our goal is to mount the casts on the articulator in an accurate orientation to facilitate the fabrication of a crown or some other prosthetic device to fit into the occlusal scheme intra-orally for our patient such that no adjustments are required upon insertion.

No disclosures

2:30 – 2:45 p.m.

Membrane Protected Cementation of Dental Implant Supported Fixed Restorations: How to Consistently and Easily Minimize the Risk of Cement Induced Peri-Implant Disease

Ronald C. Haas, DDS

Deer Park, NY

Peri-implant disease has been frequently associated with residual excess cement. Prosthodontists, restorative dentists, and surgical specialists consistently see patients presenting with peri-implant inflammation, bone loss, and less frequently, implant failure. While the etiology of these findings is certainly multifactorial, residual excess cement has been widely recognized in the literature and by clinical practitioners as a potential cause or exacerbating factor. Peri-implant disease and implant loss

are disappointing and frustrating outcomes for patients and dentists alike. They can lead to loss of patient confidence, loss of patients, as well as decreased referrals to one's practice.

As a method of minimizing risk, a number of authors and opinion leaders have recommended avoiding cement retention for implant restorations by returning almost exclusively to screw retention. This presentation will describe in detail a simplified technique developed by the presenter for cementing implant supported crowns and fixed prostheses that will consistently, quickly, and easily result in a well retained prosthesis with minimal to no cement excess. The technique requires minimal change to the restorative dentist's usual cementation technique and can easily be widely adopted, thus minimizing the serious risk of cement induced peri-implant disease and allowing practitioners to confidently and safely prescribe and provide cement retained implant supported restorations.

No disclosures

2:45 – 3:00 p.m.

Management of a Failed Dentition Utilizing Block Provisionalization as a Teaching Tool

Louis F. DeSantis, DDS, FACP

New York University College of Dentistry

The management of acute dental emergencies can be successfully used as a teaching tool for postgraduate prosthodontic residents. Failed or broken full arch fixed restorations can be an especially stressful situation for both the resident and/or private practitioner. By using sound prosthodontic principles, a full arch fixed block provisional restoration was used to restore an acute failed dentition. The novel use of a modified Lucia jig incorporated into the methyl methacrylate allowed not only a successful outcome but also a deeper understanding of prosthodontic principles by the resident.

No disclosures

3:00 – 3:15 p.m.

Using Tooth Anatomy to Optimize Rest Seats for Removable Partial Prosthesis: A New Rest Seat for Mandibular Canines

Igor J. Pesun, DMD, MS, FACP

University of Manitoba

Removable partial denture prosthesis (RPD) is a treatment modality that is presented for patients who are missing teeth. These prostheses replace part of the missing dentition and their adjacent tissues. Treatment objectives are to preserve the remaining natural teeth and their investing and support tissues. RPD therapy must encompass evaluation of the existing biological factors, as well as consideration of the mechanical aspects of denture design. Masticatory loads move an RPD toward its supporting structures and must ultimately be resisted by "BONE." These loads are transmitted to the bone through the mucosa of the tissue and the periodontal ligament of the teeth. To minimize the effect of such forces one can use multiple tooth rests and maximum extension of the denture base for the broadest possible distribution of load to the remaining natural teeth and the residual ridges. A rest is defined as a rigid (stabilizing) extension of a removable partial denture, which contacts remaining teeth to dissipate or resist vertical or horizontal forces. It is that portion of the RPD, which prevents

movement of the framework or clasp apparatus in a gingival direction. Namely it provides support for the RPD framework. Rests are designated by the location on the tooth on which they are placed. For posterior teeth, a rest is placed on the occlusal surface adjacent to the edentulous space on molars and second premolars and can be placed with a lingual approach on to occlusal surface of mandibular first premolars. The placement of rest seats on anterior teeth is more difficult to prepare and is limited by the tooth's anatomy. Incisal rests placed on anterior teeth at the incisal edge present an esthetic compromise. Lingual Rests are placed on the lingual surface of anterior teeth. There are several different forms of lingual rests on anterior teeth. This presentation will review the RPD rest seat designs for anterior teeth that allow for adequate support for the framework, are conservative and esthetic preparations of the abutment teeth; the incisal rest, cingulum chevron shaped, cingulum U-shaped, and marginal ridge rest.

No disclosures

3:15 – 3:30 p.m.

An In Vitro Comparison of Fracture Load of Zirconia Custom Abutments with Internal Connection and Different Angulations and Thicknesses

Roya Zandparsa, DDS, MSc, DMD

Tufts University School of Dental Medicine

The purposes of these in vitro studies were to compare the fracture load of two-piece Zirconia Custom Abutments (ZCA) and one-piece ZCA with different thicknesses and angulations. Throughout this presentation, two conducted experiments and the results will be discussed.

No disclosures

3:30 – 3:45 p.m.

A Complex Implant-Supported Reconstruction with Monolithic-Minimally Veneered Zirconia: A Clinical Report

Michael Moscovitch, DDS, CAGS

Montreal, Canada

The purpose of this case report is to highlight the issues of treating a complex maxillary and mandibular fixed implant-supported reconstruction. The use of established evidence-based information along with recently developed supporting digital technologies for diagnostics and laboratory procedures, combined with the high strength ceramic, zirconia, acrylic materials (polymethyl methacrylate) for provisionals and prototypes, have created an accurate and precise workflow to provide reliable long term performance and esthetic outcomes without the associated prevalence of damage and wear with previously used restorative materials.

No disclosures