

TABLE CLINIC SYNOPSES

Annual Session of The American College of Prosthodontists, Waikoloa Village, Hawaii, November 15-18, 2000

Michael A. Mansueto, DDS, MS
Chair, ACP Table Clinics Subcommittee

Converting Complete Dentures to Fixed Implant Supported Provisional Restorations

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Restoring the edentulous patient with an implant fixed complete denture is a challenging procedure. The patient's occlusal vertical dimension, centric relation position, esthetics and phonetics must be maintained throughout the restorative process, while the patient is wearing a removable prosthesis. Using simple procedures, the complete dentures can be converted to fixed provisional restorations and provide valuable information to the clinician.

Prosthodontic Management of Improper Implant Angulation

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Improper implant angulation is one of the most difficult problems to overcome in the fabrication of implant-supported and implant-retained restorations. Different methods are used depending on the severity of angulation. Diagnostic procedures and proper treatment planning should minimize the incorrect placement of dental implants. However, when this does occur, esthetic and functional

results can still be achieved. The various clinical and laboratory procedures for solving these problems will be presented.

A Simple Predictable Method for Repositioning a Complete Denture for Soft Lining Procedures

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The use of implants and bone grafting procedures require a gross reduction of the intaglio of an existing prosthesis that will serve during a transitional phase. Because of the difficulty in adequately positioning the prosthesis against the opposing arch, this frequently compromises occlusal stability. This table clinic offers a dual stage technique for applying a soft liner to ensure that a proper horizontal and vertical relationship is established for the prosthesis.

System for Diagnosis, Placement, and Prosthetic Restoration of Root Form Implants

Francesco Di Sario, DDS
Canosa Sannita, Italy

A method for implant prosthesis treatment planning is described which allows fabricating of the prosthetic restoration before surgical placement. The method includes the following steps: A) determining the mesiodistal inclination of the implant, B) determining the buccolingual dimensions of the bone, C) fabrication of the surgical guide, D) fabrication of the prosthetic restoration.

Prerestorative Minor Tooth Movement Using Orthodontic Separators

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Caries or missing teeth may result in drifting of teeth, making restoration difficult. This presentation demonstrates a technique utilizing orthodontic separators to align the teeth prior to restorative procedures. The technique is simple, inexpensive, and can easily be incorporated into any restorative practice.

Nasal Prosthesis for Total Rhinectomy Patient

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The techniques for making a realistic lightweight silicone polyurethane-lined nasal prosthesis with magnet attachment to an acrylic framework will be presented. The aims of this prosthesis are not only to replace the gross cosmetic disfigurement that results from surgical removal of the cancer but also to help patients return to normal social activity.

Marginal Adaptation of Metal-Ceramic Inlays

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Metal-ceramic inlay designs were developed to determine whether the esthetic qualities of all-ceramic inlays could be duplicated and at the same time their strength and stability be improved. The objective of this study was to determine

the correlation between marginal gap width and fracture resistance. A comparison of the gap widths in metal-ceramic inlays and all-ceramic inlays reveals the average gap widths to be 120 μm and 105 μm respectively. An analysis of covariance establishes no relationship between marginal gap width and fracture resistance.

Effect of Colored Window Glass on the Accuracy of Dental Shade Matching

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The aim of this study was to evaluate the effect of various colors of window glass on the accuracy of dental shade matching. Dentists were asked to match pre-selected dental shades. A viewing booth was designed with interchangeable glass panels. The results indicated that the color of glass used in windows has an effect on the accuracy of dental shade selection when using sunlight as the source of illumination.

Pressure Underneath Complete Denture Impressions

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The final impression is an important step in complete denture fabrication. A number of techniques have been proposed to make final impressions as accurate as possible. All of these techniques focus on manipulating the pressure to provide superior results. The pressure exerted under maxillary edentulous impressions utilizing four commonly used impression materials and three impression tray configurations is measured.

A Comparison of Two Types of Implant Retained Overdentures

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Dr. Ju-Chun FanChiang, DDS

Graduate Prosthodontics

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A study comparing two types of implant supported overdentures is presented; Hader Bars with distal ERA were compared with direct ERA attachments. The study rates the overdentures according to patients' acceptability and cleansability. There is no report in the literature comparing the two different techniques in terms of these factors.

Multiple Applications of Polyvinyl Siloxane

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Common uses of polyvinyl siloxane are as impression material, disclosing medium, interocclusal record, and laboratory putty matrix applications. Additional applications suggested are implant screw access obturation, maintaining peri-implant soft tissues during restorative procedures, a record base stabilizing liner, an intraoral blackout material, trial pack medium for denture processing, and as a substitute matrix for radiographic template markers.

The Effects of Fast Burnout Times on Casting Accuracy, Smoothness, and Castability Using a New, Fast-Setting Investment Material

Paul Hansen, DDS

Assistant Professor

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This study evaluated the effects on casting smoothness, castability, and dimensional stability of post and cores fabricated from Duralay resin after a fast burnout time. Fast

Fire investment was used for a 12-minute bench set and 10-minute burnout at 1650 degrees Fahrenheit.

Adjusting Complete Denture Occlusion with an Intraoral Balancer

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Dorsey J. Moore, DDS

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Acrylic resin shrinks when processed and distorts when dentures are decast. Adjustments of occlusion must be made at the insertion appointment. This table clinic demonstrates a simple, time saving, accurate, and low cost procedure for using an intraoral balancer to make occlusal adjustments.

Implant Retained Overdentures Using Spherical Attachments: Is Implant Parallelism Really Necessary?

Andrew S. Wiemeyer, DMD

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University of Connecticut

The table clinic will demonstrate that parallelism of the matrix portion of certain spherical attachment systems is substantially more critical than parallelism of the underlying implants for stable overdenture retention.

The Use of Mandibular Tori as a Donor Site for Autogenous Bone Graft

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Prosthodontics and Implant Dentistry

Loma Linda University

Intraorally harvested intramembraneous bone grafts have been used for alveolar

ridge augmentation. The symphysis area, the ascending ramus, the palate, the coronoid process, the tuberosity and the extraction socket have been proposed as donor sites. The presentation will describe the use of mandibular tori as an intraoral donor site for autogenous bone graft material.

Masking Ability of Procera® All Ceram Copings Using Different Core Substructure Materials

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The masking ability of Procera® All Ceram copings was measured in this study using five different core build-up materials. Ten disc samples of a 0.6 mm thickness were placed on top of discs made of amalgam, gold, titanium, Ti-Core Silver and Ti-Core Natural, with no cement layer between the discs. Using a colorimeter (Minolta Chroma Meter CR-300, Minolta Inc. Osaka, Japan), reading of light reflection from those samples was measured under Lab and Yxy models for measuring chromaticity and color deviation according to the CIE L*a*b color coordinates. The mean L*a*b* values for the Procera® All Ceram coping material on five different core build-up materials exhibited no statistically significant differences when the coping wall thickness was uniform.

Microleakage of Various Restorative Materials at Endodontic Access Holes in Metal Ceramic Crowns

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Irreversible pulpal involvement can occur after cementation of fixed restorations. Ideally,

a new restoration would be fabricated. In practice, the access cavity is often filled with restorative material. Microleakage of various restorative materials with different treatment protocols that may be used to seal access openings on endodontically treated metal ceramic crowns is presented.

Immediate Loading of Implants in Edentulous Mandible Maintaining Vertical Dimension

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Although implant prostheses success for edentulous mandibles is above 98%, treatment duration may be undesirable for patients. This report demonstrates the immediate loading of the edentulous mandible using conventional implants and components. A factor facilitating prosthetic treatment is retention of one tooth.

Restorative Treatment of a Patient with an Oro-Facial Developmental Disorder

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This is a report of a patient who presented to Montefiore Medical Center with a congenital developmental disorder involving microgynathia, partial anodontia, and velopharyngeal insufficiency. Special considerations were given to evaluation of the disorder and guidance of the patient's growth pattern. The patient was treated from childhood to adolescence, using a multi-medical and dental department approach. The height of the mandibular residual alveolus necessitated bone grafting and implant placement. Several unique prostheses were used to restore function. The dental departments involved in the care were oral surgery, orthodontics, and prosthodontics.

Fabrication of a Single Crown Under an Existing Removable Partial Denture

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Postgraduate Prosthodontic Student

University of Missouri-Kansas City

Occasionally the crown on an abutment tooth must be replaced because of caries or mechanical failure. If the removable partial denture is otherwise serviceable, it would seem prudent to construct the new crown to the existing rest and clasp contours. The suggested technique uses a pattern made of autopolymerizing resin. The restoration is completed in two visits and the patient can continue to wear the RPD during the laboratory phase.

Esthetic Provisional to Display Gingival Tissues

Reem Haj-Ali, BDS

Postgraduate Prosthodontic Student

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Tissue—colored porcelain has been used to duplicate missing tissues in esthetic areas. A technique has been developed in which provisional restorations can be fabricated to duplicate the appearance of gingival tissues. This technique provides a means to predict the likelihood of eventual success and to demonstrate to patients what the final prostheses will look like.

Uses of Procera® CAD/CAM Technology

Marianella Sierraalta, DDS, MS

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School of Dentistry

Dentistry has new ways of fabricating ceramic restorations for natural teeth and dental implants. Procera® is established worldwide and represents a combination of computer technology and creativity. This table clinic will demonstrate those CAD/CAM

technologies used to fabricate a variety of ceramic crowns, veneers, and individually designed ceramic implant abutments.

Applications of Computerized Digital Radiography in Prosthodontics

Kelley Tomsett, DDS

Postgraduate Prosthodontics

University of Texas Health Science Center

at San Antonio

Examples of applications of computerized digital radiography (CDR) technology in a prosthodontic practice will be presented. Included will be the benefit of instant confirmation of margin integrity of fixed partial dentures, post and core information, and some of the valuable uses in implant dentistry such as the immediate confirmation of a positive seat of impression copings, abutments, and prostheses.

Computerized Occlusal Analysis Systems: Evaluating Occlusal Contacts

Ryan C. Farnum, DDS

Postgraduate Prosthodontic Student

University of Texas Health Science Center

at San Antonio

This table clinic will evaluate occlusal contacts using computerized occlusal analysis systems. Clinical and research applications of the T-Scan II and the I-Scan will be discussed. Patient scenarios will include: natural dentition, maxillary and mandibular complete dentures, and implant restorations opposing natural teeth.

Titanium in Today's Dental Practice. What Cuts It?

Chetan S. Daulat, DDS

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Quite often the need arises to modify an implant abutment. This study compares a

variety of dental burs used in a high-speed handpiece. Six burs from four manufacturers were evaluated as to their cutting efficiency on commercially pure titanium and titanium alloy bars. Cutting efficiency as well as the resultant surface roughness of the samples were evaluated using SEM and a profilometer.

Transformation of the Periodontium Through Forced Eruption

Jeffrey S. Rouse, DDS
 Postgraduate Prosthodontic Student
 University of Texas Health Science Center
 at San Antonio

Successful restorative dentistry requires the preservation of a healthy periodontal attachment apparatus and an esthetic gingival architecture. The biology and dimensions of the gingival complex is an important consideration and must not be overlooked during restorative therapy. This presentation will focus on the dynamic biological transformation of the periodontium through forced eruption. The technique will be demonstrated in treating nonrestorable teeth, developing ovate pontic ridges, and augmenting implant receptor sites.

Comparison of the Tensile Bond Strengths of Three Different Surface Treated Alloys Cemented to Human Teeth

Cynthia S. Petrie, DDS, MS
 Assistant Professor
 University of Missouri-Kansas City

There is no clear answer in the literature as to what type of alloy-suitable surface treatment should be selected when a resin-bonded fixed partial denture is constructed. The tensile bond strengths of three different combinations of castin alloy-surface treatment when luted on human enamel with a resin cement, were tested.

Recognition and Management of Gastroesophageal Reflux Disease (GERD)

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The association between gastroesophageal reflux disease (GERD) and tooth erosion is widely recognized. However, health professionals are often unaware of GERD and its sequelae. Consequently, an early diagnosis of tooth wear is often not rendered. This table clinic will provide information concerning the medical and oral signs and symptoms that will aid in the early recognition and management of GERD.

Comparison of Two Different Techniques for Preparing Abutments in the ITI and Astratech Implant Systems

Ingeborg Johanna De Kok, DDS
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 Department of Prosthodontics
 UNC School of Dentistry

Poor implant location often requires preparation of the abutments to enhance successful clinical restoration. Intra- and extra-oral preparation constitute two different approaches for modifying these abutments. Advantages and disadvantages of each technique are presented.

Utilizing Tissue Undercut in Record Base Fabrication

Tarek S. AbdelHalim, DDS, MSC
 Clinical Assistant Professor
 University of Illinois at Chicago

Accuracy in complete denture record base and inter-occlusal records affects the stability of the final prostheses. Available trial denture base materials and techniques do not allow the engagement of significant tissue undercuts. A new technique that enables clinicians to utilize severe tissue undercuts in trial denture base fabrication will be presented.

Dimensional Accuracy of Dental Casts: Influence of Tray Material Selection and Multiple Pours at Varying Elapsed Times after Impression Making

*Sudsukh Thongthammachat, DDS, MSD
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A total of 240 casts were produced at 4 different time intervals, and then measured. No statistical differences were found within 6 μm for all time periods among 6 tray materials except Hydroplastic resin with both polyether and silicone impression materials and Fastray LC with polyether. Polyether impression material distorted over time. Silicone impression material had stability up to 30 days.

Restoration of the Straumann ITI Wide Neck Implant

*Anthony J. Montella, DDS
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University of Illinois College of Dentistry*

Wide diameter dental implants with dimensions similar to the teeth they replace allow the creation of emergence profile that mimics the natural dentition. Straumann USA provides an uncomplicated approach to the restoration of the ITI wide neck dental implant. This presentation will encompass impression, provisionalization, and restoration of the wide neck implant system.

Pre-Prosthetic Surgery Using Non-Conventional Graft Material

*Maribel Harb, DDS
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Maria Gonzalez, DDS
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Conventional vestibuloplasty with skin grafts can enhance stability of an otherwise unfav-

orable denture. The surgical effort is reduced and the attendant post-operative pain from a donor site is avoided with use of an acellular dermal graft (AlloDerm[®]), increasing patient acceptance. A successful application to concurrently lower the anterior floor of the mouth is presented.

Periimplant Strain Comparison Generated by Resin and Bone Models Using Strain Gages

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Strain around endosseous implants is responsive to occlusal loading. Many attempts have been made to study bone behavior using bone analogues such as PMMA models; however, they do not possess the anisotropic properties of human bone. This experiment compares periimplant strain in resin and bone in-vitro models using strain gauges.

Mechanical Properties and Clinical Relevance of Polyvinyl Siloxane Impression Materials

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This study investigated the flexibility, recovery from deformation, and tear strength of 5 kinds of polyvinyl siloxane materials and evaluated their clinical relevance. Tests were performed in accordance with ADA/ANSI Specification No. 19 and modified trouser test for stretched materials. The results showed the new high-flexibility addition silicones had acceptable values of recovery from deformation and tear energy.

Restoration for a Bruxism Patient with Lost Vertical Dimension

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Private Practice

A bruxism patient has a severely worn occlusion with vertical dimension loss of about 8 mm. The conservative treatment options include composite fillings with pins, crown lengthening, intentional root canal treatment, fixed bridges and a night guard.

projections were performed with no statistical differences ($p > 0.05$).

Comparison of Load Distribution for Implant-Retained Overdenture (IRO) Attachments

Vicki C. Petropoulos, DMD, MS

Assistant Professor of Restorative Dentistry

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IRO's are a useful treatment modality for improving masticatory function. This investigation analyzed the forces and moment distributions that develop on two implants supporting an IRO of nine commonly used attachments. Biomechanical consideration of the force distribution is essential, as mechanical overloading is detrimental to the implants supporting the overdenture.

Mechanical Devices for Recording Maxillomandibular Relations: A Historical Review

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University of Iowa, College of Dentistry

Jaw relationship records in edentulous patients can be recorded by mechanical devices or checkbite methods. The reliability of one technique over another has been discussed in the dental literature. The use of mechanical tracing devices at a given vertical dimension of occlusion enables the clinician to record the centric relation position as well as providing information about mandibular movement. This table clinic will present a historical review of mechanical devices used to record maxillo-mandibular relationships for the edentulous patient.

Health Status in Patients with Access to Free Dental Care in San Jose

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UOP School of Dentistry

San Francisco, California

Free dental care has been offered in the clinics of San Jose, California from 1970 to 1999. This study investigated differences in medical status, dental status and self-reported satisfaction between two groups of elderly patients who regularly attended for dental treatment ($n=100$) and those who were infrequent attenders ($n=100$). Differences in all parameters (medical status, dental status and satisfaction) were observed between the two groups and will be reported.

Array Geometry for Assessment of Mandibular Implant Positioning Using Tuned-Aperture Computed Tomography (TACT)

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The purpose of this study was to evaluate depth discrimination using various beam arrays with Tuned-Aperture Computed Tomography (TACT) for the task of estimating implant position with respect to simulated mandibular canals. Results: The mean reading errors for TACT images constructed using the various different projection arrays were small (0.09-1.24 mm). Horizontal, vertical linear, conical and controlled random

Thermal Cycling's Effect on the Marginal Gap Size of Relined Provisional Resin Crowns

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New Jersey Dental School

Private Practice

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The fabrication of a provisional resin crown may lead to marginal gaps due to polymer-

ization shrinkage. Improving marginal adaptation by a relining process may be accomplished using the parent resin material or a different polymeric material, which possesses additional characteristics such as light or rapid chemical cure. These polymer materials vary in chemical composition and their interaction requires investigation to demonstrate the effect of these variations on marginal gap size formation after simulated thermal cycling and water storage.

Long-term Follow-up of a Patient with Ectodermal Dysplasia Treated with Implants

*Arun Sharma, BDS, MSc
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UCSF School of Dentistry*

This 12-year-old patient was treated with implant restorations. Standardized cephalometric radiographs were taken regularly over a

period of 9 years and demonstrate continued growth.

The One Piece, One Stage Dental Implant Restorative System

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This table clinic presents a recently developed implant system with a further simplification in its protocol. The One Piece, One Stage Dental Implant Restorative System utilizes a one piece implant/abutment structure. This design eliminates the possibility of screw loosening and minimizes infection and inflammation at the implant/abutment interface. The resistance-retention form of the multiple unit cement-retained prosthetic restoration is unique.