Course & Title: 529-A Treatment and Management of the Edentulous Patient

Session & Topic: Jaw Relations

General Goal: To understand the principles of orientational, horizontal and vertical jaw relations and be familiar with these determinations as they relate to complete denture treatment

Objectives: Upon completion of this course the student should be able to:

1. Explain the concept of the record base and list its uses in complete denture fabrication.
2. Explain the concept of the occlusion rim and how it is used in complete denture fabrication.
3. Discuss the fabrication of record bases and occlusion rims including requirements, materials, and specifications.
4. Discuss the jaw relations phase in general terms including procedures, sequence, and desired goals.
5. Discuss the orientation phase of jaw relations:
   A) Describe the procedures used to evaluate and contour the maxillary occlusion rim.
   B) Discuss the facebow transfer
      1. purpose/rationale
      2. indications
6. Discuss the methods used for establishing the vertical jaw relationship
   A) Define and explain VDR.
   B) Define and explain VDO.
   C) Define and explain the inter occlusal distance.
   D) Describe the methods used to evaluate the VDO.
   E) Describe the clinical consequences of a VDO which is a) excessive and b) insufficient.
7. Discuss the principles of horizontal jaw relations.
   A) Define centric relation and explain the rationale for its use in complete denture fabrication.
   B) Discuss the requirements of a material for inter occlusal records.
   C) List commonly used recording materials and compare to the ideal.
   D) Define eccentric records and give an example.
   E) Discuss the principles of the protrusive jaw relationship and the measures used to record it.
      1. Explain the significance of the Christiansen phenomena.

1. Understand the principles of stabilized record bases and occlusion rims
   A. Understand the purpose of record bases
   B. Understand the purpose of an occlusion rim
2. Understand the principles of orientation relations
   A. Understand the principles of a facebow transfer
   B. Understand the procedures used to contour maxillary occlusion rim

3. Understand the principles of vertical jaw relations
   A. Define and explain the vertical dimension of rest position
   B. Define and explain the vertical dimension of occlusion position
   C. Define and explain the term "inter occlusal distance"

4. Understand the principles of horizontal jaw relations
   A. Discuss centric relation and materials used for recording it
   B. Understand the principles of the protrusive jaw relation and the procedures used to record it

LECTURE V

JAW RELATIONS

I. Record bases
   A. Temporarily represent base of denture
      1. Jaw relation records
      2. Arranging teeth
      3. Trial insertion
   B. Comfort and stability to assure accuracy
      1. Maxillo-mandibular records
      2. Fit of the trial denture
   C. Materials
      1. Triad (VLC materials)
      2. Auto polymerizing resin
      3. Variations

II. Occlusion rims
A. Wax blocks contoured to simulate arch form and inclination
   1. Jaw relation records
   2. Tooth setting

III Orientation Relations
A. Relations of the jaws to references in the cranium
B. Maxillary wax rim
   1. Lip support - esthetics and phonetics
   2. Lip line - esthetics and phonetics
   3. Camper's line
      a. line running from the inferior border of the ala of the nose to the superior border of the tragus of the ear
      b. parallel to plane of occlusion
C. Facebow transfer
   1. orients maxillary cast to the articulator in the same relationship as the opening and closing axis of the patient
   2. when necessary to use
      a. to maintain the correct arc of closure of the mandible
      b. if balanced occlusion is desired in eccentric relations
      c. if cusped teeth are used
      d. when interocclusal records are made with the teeth or rims out of contact so the vertical separation of the casts must be reduced on the articulator
   3. arbitrary springbow
      a. used by your semi-adjustable, Arcon type of Hanau articulator
      b. records relationship of the condyle in the maxilla within an acceptable range of the true axis of rotation (5 mm.)

IV. Vertical Jaw Relations
A. Record amount of jaw separation (facial height)
B. Physiologic Rest Position
   1. habitual, postural position of the mandible when the patient is resting comfortably in an upright position and the condyles are in a neutral unstrained position in the glenoid fossa
   2. Significance
      a. it is a maxilla to mandible relation in a vertical direction (bone to bone)
      b. can be recorded and reproduced within acceptable limits
      c. useful reference when establishing OVD
C. Rest Vertical Dimension (RVD) - vertical dimension of the face with the mandible in physiologic rest position
D. Occluding Vertical Dimension (OVD)
   1. Vertical height of the face when the teeth or occlusal rims are in contact
2. Differs from RVD
   a. static position of the mandible
   b. position is braced and can be maintained for an indefinite time
   c. arbitrarily established approximately 3 mm. less than RVD

E. Inter-occlusal Distance
   1. Distance between the occluding surfaces of the occlusion rims when the
      mandible is at physiologic rest position
   2. can be measured by recording difference in facial height measurement
      between RVD and OVD
   3. old terminology: "freeway space"
   4. arbitrarily measures 3 mm. space at first premolar

V. Horizontal Jaw Relations
   A. Record the side-to-side and front-to-back relations of the maxilla to the mandible
   B. Inter-occlusal record
      1. a record of a positional relation of the upper and lower teeth or jaws to
         each other made on the occlusal surfaces of rims or teeth in a plastic
         material which is used to mount casts in the desired jaw to jaw relationship
   C. Centric relation
1. the maxillo-mandibular relationship in which the condyles articulate with the thinnest, avascular portion of their respective articular discs with the complex in the anterior-superior position against the slopes of the articular eminence

2. significance
   a. bone to bone relationship
   b. can be **reproduced**
   c. physiologic

3. materials
   a. wax
   b. compound
   c. plaster
   d. ZOE
   e. elastic bite registration materials

D. Eccentric relation
   1. any relation of the mandible to the maxilla other than centric relation
   2. mandibular movements in the horizontal plane
      a. protrusive relation - used to set horizontal condylar guidance angle on the articulator
      b. lateral relation