THE “WINDOW” IMPRESSION MAKING TECHNIQUE FOR COMPLETE DENTURES

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Impressions

- IMPRESSION MAKING
- Primary (diagnostic)
- Final (definitive)

“DEFINITIVE” IMPRESSION:

1. Accurate negative copy of “DENTURE BEARING AREAS” (basal seat)
2. Borders extending only up to the “FUNCTIONAL LIMIT”
   - Need for a good CUSTOM TRAY

IMPRESSION

- an imprint or a negative copy of denture bearing areas produced by the “pressure” of oral structures (being copied) upon or into the surface of an impression material. (glossary of Prosthodontic terms)
- “Mucosal impressions”- pressure on mucosa
Pressure

Impression Tray
- Impression Material
- Mucosa

Compression = Distortion

Too much compression = Distortion

Distorted Impression
- Distorted Master Cast
- Poor adaptation

Poor Retention

Pressure has to be controlled in order to reduce the amount of distortion of the mucosa

ACCURATE COPY OF THE "static state" (undistorted) of BASAL SEAT

Improve RETENTION

But Pressure is also required in certain areas of the basal seat

- Primary load bearing areas require a certain amount of compression in order to provide proper load distribution

- This protects areas that are "non-load bearing"

NEED MORE PRESSURE to be APPLIED ON PRIMARY DENTURE BEARING AREAS (pre-loading)

IMPRESSION pressure

DENTURE Masticatory forces

PROTECTS NON-STRESS-BEARING AREAS
Primary Load Bearing Areas

• Maxillary
  – Horizontal surface of the hard palate
  – Full, rounded residual ridges (posterior)
  – Prominent and fibrous maxillary tuberosities

Primary Load Bearing Areas

• Mandibular
  – Buccal shelf
  – Stable retromolar pads
  – Full, rounded residual ridges (posterior)

Pressure has to be controlled to also provide adequate amount of compression to load bearing areas

Proper Load Distribution

Impression Making Techniques

• Reduce/eliminate pressure → improve retention
  – "Mucostatic Impressions"

• Apply pressure on primary Load-bearing areas → improve load distribution/support
  – "Muco-compressive Impressions"

• Combination → retention + load distribution
  – "Selective Pressure Impressions"
  – WINDOW TECHNIQUE
How can we control pressure in Impression Making in order to produce an accurate copy of the basal seat?

Factors:
- Amount of pressure applied to the mucosa depends on:
  1. Quality (resiliency/compressibility) of the mucosa
  2. Viscosity of the impression material
     - Heavy body: greatest amount of pressure
  3. Design of the Custom Tray

Case: “Flabby Ridges”
- Excessively movable residual ridge tissue
- Severely resorbed alveolar bone underneath hyperplastic tissue
- Due to severe masticatory stress
- Commonly associated with natural opposing teeth

Not Epulis Fissuratum
- Hyperplastic tissue resulting from chronic trauma/irritation in the vestibular region due to ill-fitting dentures

How can we control pressure in Impression Making in order to produce an accurate copy of the basal seat?

Control/Modify:
1. Resiliency of the mucosa
2. Viscosity of the impression material
3. Design of the Custom Tray

Management of Flabby Ridges
- Presents difficulty in impression making
  - An extreme example of how tissue can distort under pressure
  - Can easily distort and compromise retention

1. Control/Modify the resiliency of the mucosa: Surgical removal (excision)
Surgical Intervention

**Benefits:**
- Impression-making becomes less difficult
- Provides stable alveolar/basal bone which can improve distribution of load and support

Solution: Implants, ridge augmentation, surgery

**Disadvantages**
- May create an area which is prone to breakage of the peripheral seal (poor retention)
- May significantly increase the thickness of the denture base (additional weight)
- Lack of vertical walls that aid in preventing horizontal movement/dislodgment of the denture (poor stability)

**Contraindication**
- Health reasons
- Additional cost
- Time constraint due to healing period
- Patient simply not amenable to any type of surgery

**Proceed with denture service**
- Provisional/Temporary Dentures
- Dentures as Stent prior to surgery/implant treatment

Alternative Management: “Selective Pressure Impression”

**WINDOW TECHNIQUE:**
- Objectives:
  1. Obtain a mucostatic impression of the flabby ridge
  2. Obtain a mucocompressive copy of primary load-bearing areas
Selective Pressure Technique

Control Pressure:

1. Resiliency of mucosa (challenge)
2. Viscosity of Impression Material
3. Design of the custom tray

Selective Pressure Technique

Control Pressure:

1. Viscosity of Impression Material
2. Design of the custom tray

1. Choosing the Impression Materials

Impression Material

Viscosity

• A combination of:

Medium body (Medium Viscosity):
  – to provide a muco-compressive impression of the primary denture-bearing areas
  – border-moldable in order to copy functional limit
    • medium body rubber impressions (polyether, silicone) or Zinc Oxide Impression Paste

Light Body (Low Viscosity):
  – to provide a muco-static impression of the flabby region
    • Light body rubber impressions (silicone wash) or Impression plaster

• Or single viscosity (medium body)

Impression Material Combinations:

2 step impression using 1 tray

• Zinc Oxide Impression paste + Impression plaster (old)

• Medium body Silicone (Addition or Condensation) + Light body

• Polyether (medium + light body)
2. Modifications in the Custom Tray

Pressure inside the tray can be controlled by:

1. Relief/spacer:
   - the thicker the amount of relief, the less the amount of pressure
   - Relieve movable tissues (flabby area)
   - Do not relieve primary load-bearing areas

Relieve areas that are movable as well as areas that are “non yielding”

Do not relieve primary load bearing areas

Fabricate Custom Trays

Pressure inside the tray can be reduced by:

2. Vents (holes):
   - that allow impression material to escape thru the holes easily, thus relieving pressure on these areas
Combination of VENTS AND RELIEF

CASE: FLABBY RIDGES

"Window" provides an almost “pressure-less” impression of the flabby region

2 Stages

VENTS AND RELIEF MAY NOT BE ENOUGH

Custom Tray: Window

Relieve and Outline

Weaken window outline

Tray handle

Tray handle
FIRST STAGE

Weaken Window Outline
Apply Tray Adhesive

Medium Body
SECOND STAGE

WINDOW TECHNIQUE

• Open window
• Remove excess impression material

Apply tray adhesive

Mucostatic
Mucocompressive

• syringe low viscosity impression material over flabby area
Other Requirements:

- Balanced Articulation
- Anterior Teeth above the flabby area should be set off-contact at centric and must be free of any interferences in all eccentric positions
- Proper contours of polished surfaces

end

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