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Prosthodontic Approach For Management Of Flabby Ridges: A Review

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Abstract: "Flabby" or "fibrous" ridges are the alveolar ridges covered with mobile soft tissue. These tissues interfere with the retention, stability and support of a denture. Unless appropriately managed, flabby ridges may pose a problem to the prosthodontist and the patient. Dentures fabricated over flabby tissues have a tendency to become loose due to tissue rebound. There are several techniques suggested to overcome this difficulty like altered techniques for making an impression or using implant retained prosthesis or by removing the flabby tissues surgically. Non-surgical prosthetic management of flabby tissues includes special impression techniques and using a liquid-supported denture. This article reviews the different impression techniques which can be used for making an impression for flabby ridges which will provide better retention, stability and support of the dentures.

INTRODUCTION

A final impression made for a complete denture needs to 'record the entire functional denture bearing area" to provide good retention, stability and support for the denture while in use.[1] However, problems emerge when the quality of the denture bearing area is insufficient for this purpose. Displaceable ridges, often known as "flabby ridges," pose a number of challenges and might lead to complaints of discomfort or looseness when a full denture is seated.[1] According to published research, flabby ridges can be found in up to 24% of edentulous maxillae and 5% of edentulous mandibles.[1] The 'Combination Syndrome,' as defined by Kelly in 1972, causes a flabby ridge to develop on the maxillary anterior area and includes resorption of alveolar bone in the anterior maxilla, enlargement of the maxillary tuberosity and resorption of bone underneath the mandibular denture bases.[2,3,5] When there is a longstanding edentulous zone opposing normal dentition, it may be present on other denture-bearing regions as well.[2] Surgical, non-surgical techniques and implant retained prosthetic treatment can be used to manage a flabby ridge.[2,4] Impression methods are used in the non-surgical procedure to record the flabby tissue in an undisplaced or static condition and the denture-bearing tissues to be recorded in a compressed state for adequate support.[2] Chase was the first to use elastic impression material to alleviate traumatised tissue in 1961.[6] However, this may only be a temporary solution.[6] Furthermore, this may promote candidal growth.[6] An ideal denture should be able to endure masticatory pressures and have a flexible tissue surface to avoid stress concentration and damage on the underlying tissues in a flabby ridge state.[6] As a result, a liquid-supported denture may be a viable solution to this issue.[6]

Four broad concepts for impressions have been described:[5]

1. "The mucostatic technique"
2. "The muco -compressive technique"
3. "The selective pressure impression technique in which some denture bearing tissues are displaced and others are not"
4. "Functional impressions"

This article describes the management of flabby tissues using the non-surgical procedure i.e. the modified impression techniques and by using liquid supported dentures.

IMPRESSION TECHNIQUES

1) Jone D Walter Technique[7]

In this approach, zinc oxide eugenol paste is used to record the healthy denture bearing tissues and impression plaster is used to record the displaceable tissues[7,8,9]

2) Allan Mack's Splint Method[7]

When the tissues are excessively flabby, this technique is employed. In this method, trays with a lot of relief over the fibrous tissue or trays that are loosely fitting are used.[7,8,9] First, the flabby region is painted with plaster of around 3 mm thickness, then the plaster is allowed to set.[7,8,9]

After that, the tray is filled with the second mix of plaster and the imprint is taken.[7,8,9] As a result, the first plaster covering of flabby regions functions as a'splint,' which is later removed with the second mix of plaster impression.[7,8,9]

3) Fluid Wax Impression[7]

It records the primary and secondary stress bearing regions by utilizing molten wax.[7] It does not alter the tissues of residual ridge.[7] It is a functional impression method.[7]

The techniques are

a) Hobkirk Technique[7]

Also known as One Part Impression Technique.[7] After proper border correction, preliminary impressions are made with low-viscosity alginate impression material using stock trays.[7] Primary cast is poured and over that a spacer of adequate thickness is adapted and special tray is fabricated.[7] Holes are made on the trays over the flabby areas to decrease the pressure.[7] Another impression is made with low viscosity impression materials like alginate, low-viscosity silicone or impression plaster.[7]

b) Window Technique[7]

Watson described the window method. An aperture termed a "window" is created on the custom tray over the flabby region in this procedure. On the custom tray, zinc oxide and eugenol are utilised to make a mucocompressive impression. After the impression sets, it is removed. It is trimmed and re-seated in its original position. Through the window, a thin mixture of 'plaster of Paris' is applied to the flabby region. After the plaster sets, the impression is removed from the mouth.[7, 10,11,12]

c) Two Part Impression Technique: Mucostatic and Mucocompressive Combination.[7]

Excessive pressure areas or tissue blanching can be detected using a transparent processed acrylic resin tray. The tray has a little handle on it to make it easier to take it to the mouth. Stability, retention, and muscular interference are all evaluated on the tray. The blanching zone is indicated on the tray, and the appropriate sections are removed with a bur until all tissue blanching is gone. On the tray, 5 mm apart on the anterior flange from canine to canine, holes are drilled. From the premolar to the molar area, finger rests are formed bilaterally. Putty silicone material is used for border molding and light body silicone impression is used to make the impression.[7, 13]

d) Controlled Lateral Pressure Technique[7]

In a fibrous posterior mandibular ridge, this method is used. A properly extended custom tray is used with Greenstick tracing compound, which is utilised for border moulding and recording the denture bearing area. A heated device is used to remove the excess green stick from the fibrous crestal tissue, and vent holes are created in the tray in this area. After that, a light body silicone impression material is used to make an impression on the buccal and lingual sides of the green stick in the region. Excess material flows out via the vent holes.[7,14]

e) Spacer Guided Differential Pressure Technique[7]

This approach prevents overloading the ridge's crest and allows for cautious ridge height preservation for stability. In the anterior zone, 2 mm of wax spacer was adapted, and in the "flabby" region, 3 mm of wax spacer was adapted. Differential pressure generated by changing the thickness of the wax spacer, wax spacer removed after border moulding and relief vents constructed in the flabby zone, low viscosity polyvinyl siloxane used for final impression.[7,12]

CONCLUSION

The prosthodontic rehabilitation of fully edentulous individuals is complicated by flabby or fibrous tissue and achieving a stable and retentive complete denture prosthesis is a difficult task.[2,15] In such situations, surgical excision and dental implant treatments are options, but they may not be viable for those individuals due to medical sickness or treatment costs.[15] So, to attain the desired results, nonsurgical treatment of these ridges should be prioritised, followed by modified prosthodontic procedures.[2] Dentures that are made using traditional impression procedures to record such flabby tissues are frequently unretentive and unstable.[15] Flabby ridges can be efficiently corrected without any further trips to the clinic by using certain adjustments to current impression procedures and newly developed materials with enhanced physical and handling qualities.[15] The limitations should be addressed with the use of selective pressure or minimally displacive impression methods.[2] In dental clinics, the materials utilised are easily available. In primary health care centres, even regular dentists may handle such instances.[15]

CONFLICT OF INTEREST

Conflict of interest declared none.

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