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Prosthodontic management of flabby tissue using modified custom tray design and single impression technique

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Abstract
'Flabby' or 'fibrous' are terms used alternately when there is a superficial mobile tissue on the alveolar ridge. This hyperplastic tissue displaces the denture and affects the denture stability, retention and support. This paper presents a modified custom tray design and single impression technique as a nonsurgical method to record the flabby tissue in its undisplaced form.

Keywords: Flabby tissue, modified custom tray design, light body impression material

Introduction
Complete denture construction and its performance in function solely depend on the appropriate impression of the denture bearing structures and the limiting areas. Hence the challenge to achieve and ensure adequate retention, stability and support of denture increases when there is a flabby tissue on these denture bearing areas. Most often flabby ridge is seen on the maxillary anterior region as a result of the 'Combination Syndrome' as described by Kelly [1] in 1972. But it may be present on other denture bearing areas as well when there is a long-standing edentulous region opposing natural dentition.

Prosthodontic management of flabby ridge can be achieved by surgical or non-surgical methods [2]. The non-surgical method involves impression techniques that help in recording the flabby tissue in undisplaced or static form and the denture bearing tissues in compressed state for optimal support.

Numerous techniques have been suggested and advocated to overcome the difficulty of making a denture to rest on the flabby ridge. Displacement of mobile tissue during impression making can be reduced by controlling force exerted by adjusting the factors such as tray design, impression material and tray seating [3]. There is two-step as well as one-step impression procedure and both have their own merits. While considering the one-step impression procedure, additional relief spaces and escape holes are provided in the region of flabby tissue and impression is made with single impression material. This article presents a modified custom tray design and single impression technique for the management of maxillary flabby ridge using a case report.

Case report
A sixty year old female patient, reported to the Department of Prosthodontics including and Crown and Bridge, Royal Dental College, Kerala with complaint of missing teeth in upper and lower arches. On history taking, patient said that she recently underwent total extraction of remaining teeth in upper and lower arches. On clinical examination it was found that there was flabby tissue on right and left maxillary tuberosity region due to the prolonged edentulous state of maxillary posterior region opposing natural dentition. Tissue blanching was noted on pressure application in these regions. [Figure 1]

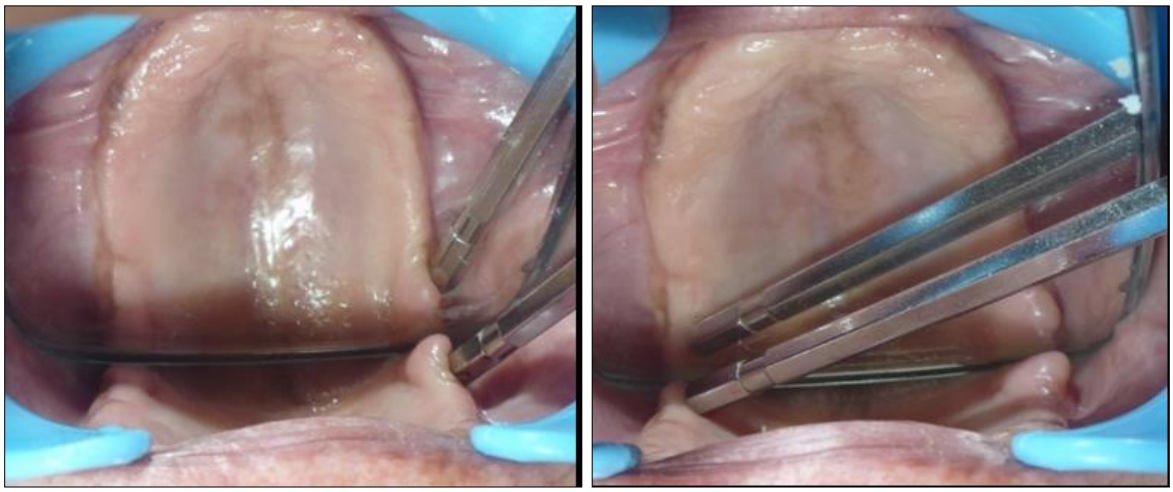


Fig 1: Flabby tissue in the maxillary posterior region

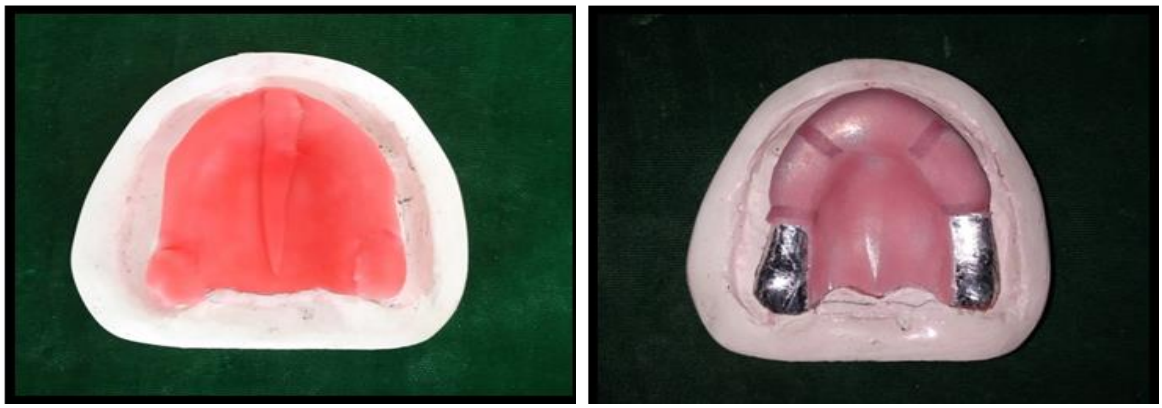
The fabrication of complete denture was planned for this patient using a custom modified impression tray and single impression technique. The maxillary preliminary impression was made using irreversible hydrocolloid (tropcalgin, zhermack) in perforated edentulous tray and preliminary cast was poured with dental plaster. The mandibular impression was made using impression compound in edentulous non perforated tray [Figure 2a and b]

Figure 2a and b: preliminary impression and casts

a b

Fig 2a and b: Preliminary impression and casts

Custom tray was fabricated with 1mm wax spacer not extending to posterior palatal seal area and additional tadpole spacer on mid palatine raphe and 1mm spacer on flabby tissue. Tin foil was adapted all over. Stoppers on canine and molar region were placed according to Sharry's design. A thin layer of self cure acrylic not more 0.2mm thickness was added on this spacer design for stabilization not extending to posterior palatal seal area and the flabby tissue region.[Figure 3a and b]



a b

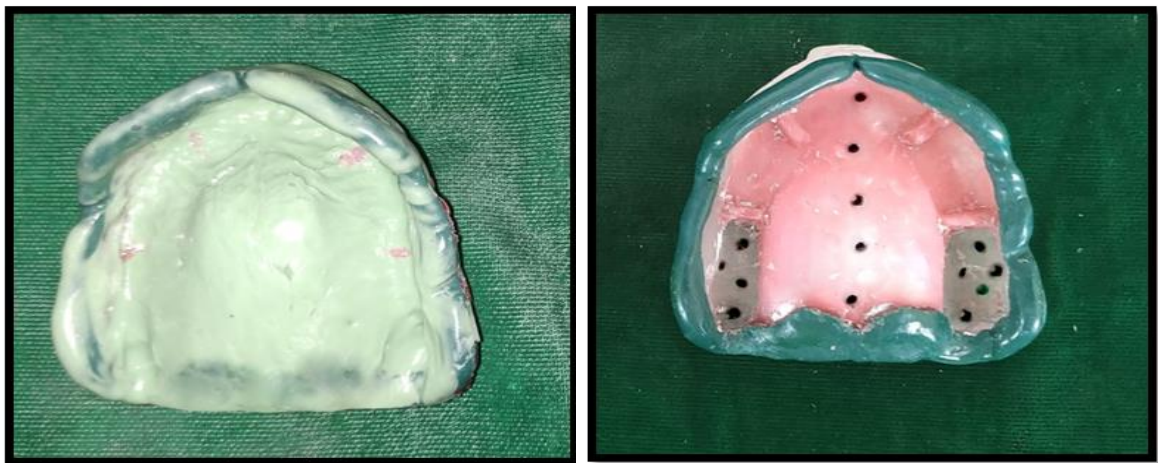
Fig 3a and b: Wax spacer and modified design

Additional 2mm spacer wax spacer was placed on the flabby tissue region and the custom tray fabrication with anterior handle was completed. [Figure 4a and b]

a b

Fig 4a and b: Additional 2mm spacer and completed custom tray design

After checking the tray extensions, border molding was done incrementally using green stick tracing compound (DPI Pinnacle Tracing Sticks).Spacer wax was removed and relief holes were placed on the midpalatine raphae and flabby tissue region to facilitate the mucostatic impression technique. Tray adhesive was applied. The custom tray was loaded with single elastomeric impression material (Hydrorise light body impression material) and a wash impression was made [Figure 5a and b].



a b

Fig 5a: Border molding with green stick and relief holes. b. Completed corrective master impression

Beading and boxing of final impression was made using beading and boxing waxes and master cast was poured using Type III dental stone. Tentative jaw relation and complete denture try in procedure was performed. Patient was completely satisfied with her new retentive dentures and the restored appearance. Subsequent visits for review was also done.[Figure 6]

a b

Fig 6: Patient with fabricated complete denture in mouth

Discussion

Many techniques have been recommended and there still exists an argument as to whether a mucodisplacive technique which compresses the mobile tissue aiming to achieve maximum support from it or whether a mucostatic technique with the aim of achieving maximum retention without compressing the displaceable tissue should be employed [4, 5].

In this paper, the case presented describes a technique where the maxillary borders were recorded by selective pressure impression technique using green stick tracing compound. The wax spacer was removed and multiple relief holes were placed in the special tray to ensure prevention of pressure build-up in the flabby area thereby leading to inadvertent tissue compression [6, 7]. The single impression technique was used to record flabby tissues in their undisplaced state with the help of readily available clinical materials like low viscosity silicone impression material.

Displaceable or 'flabby ridges', present a particular difficulty and may give rise to complaints of pain or looseness relating to a complete denture that rests on them [8]. The amount and position of displaceable tissue should be considered so that the effects of tissue displacement and distortion during impression making can be eliminated. The use of relief holes, windows and double wax spacers reduce the pressure on tissues and minimize the displacement of denture bearing tissues. If load is to be distributed evenly over the available denture bearing area, then distortion of the tissues must be minimized during the impression making procedure [9, 10].

Conclusion

The prosthodontic management of flabby or fibrous tissue pose a challenge for the achievement of stable and retentive complete denture prostheses. Emphasis should be laid on non-surgical management of these ridges followed by modified prosthodontic procedures to achieve the desired results. The use of selective pressure or minimally displacive impression techniques should help to overcome some of these limitations. With modified impression techniques, these ridges can be managed effectively without any additional clinical visits as compared to patients with normal edentulous ridges.

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