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Case Report

Winged Denture for the Management of Flabby Prominent Premaxilla in Class III Ridge Relation: A Case Report

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ABSTRACT:
Complete denture fabrication poses a challenge when the intraoral conditions of the patient are not ideal.Patient with excessive bulky and flabby maxillary ridges often has a compromised facial esthetics as well as retention. Both horizontal and vertical ridge relations play a significant role in the prognosis of the final denture prosthesis. This case report presents a non-surgical procedure in treating a patient having maxillary ridge with severe labial undercut and flabby tissue with class III horizontal ridge relationship with the help of a flangeless denture.

Key words: maxillary labial undercut, flabby ridge, class III relationship, flangeless denture

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INTRODUCTION

Residual alveolar ridge form and shape may differ from severely resorbed to widely massive ridges in a completely edentulous individual. Fabrication of complete denture proves to be challenging when the ideal biological consideration of both soft and hard tissues are not fulfilled.[1] An exorbitantly noticeable bone is more typical in maxilla than in mandible. Prosthetic rehabilitation of such cases where maxillary bone is prominent giving adequate lip fullness in the absence of denture is challenging as building a labial flange in many such cases might mutilate the facial support, esthetics and function of muscles of facial expression.

Pre-prosthetic surgery is one of the treatment option available in such cases before advancing towards the construction of complete denture.[2] Use of reconstructive surgical treatment is not always feasible owing to lack of patient motivation and financial constraints. One of the disadvantage of preprosthetic surgery is that it may decrease the establishment for denture support. Other limiting factors include underlying systemic diseases such as uncontrolled diabetes mellitus, hypertension, and heart ailments.[3] Placement of anterior teeth in such cases become critical as even a minor prominence of anterior tooth/ teeth gives an unaesthetic swollen lip appearance. Nonsurgical treatment option includes fabrication of a flangeless denture in order to restore the support, function and esthetics.

Another complication commonly observed in edentulous patients is the presence of flabby ridges. Flabby ridge also called as fibrous ridge or displaceable ridge is mobile soft tissue present on the superficial aspect of the alveolar ridge. Flabby ridge is predominantly seen in the maxillary anterior region and maxillary tuberosity region and is commonly associated with features of combination syndrome. Earlier studies show that prevalence of flabby ridges vary in either arches, with edentulous maxillae prevalence being 24% and edentate mandibles 5%. Prolonged and night denture wear along with unplanned dental extractions are other factors that contribute to the occurrence of flabby. Typically they are composed of

mucosal hyperplasia and loosely arranged fibrous connective and dense collagenised connective tissues. The lesser resilient tissues can displace the dentures under masticatory load leading to loss of peripheral seal causing poor retention of the denture.[4]

Horizontal ridge relationship can be classified as class I, II or III based on the position of mandible with respect to maxilla. Class I considered as an ideal ridge relationship. Class III ridge relationship has mandible ahead of maxilla where mandibular ridge is larger and wider than maxillary ridge. Both size and position of the teeth arrangement differs from the ideal.

This case report presents a noninvasive manner of flangeless denture fabrication in patients having proclined anterior maxillary ridge with associated undercut and flabby tissue in maxillary anterior and tuberosity region having class III ridge relationship.

CASE REPORT

A 62-year old female patient visited the Department of Prosthodontics with a chief complaint of missing teeth and wanting a replacement for the same. Case history revealed no relevant medical history. Extra-oral examination showed adequate maxillary lip support and fullness [Figure-1]. Intraoral examination of the patient revealed a flabby tissue with respect to maxillary anterior ridge and tuberosity area [Figure-2] and mandibular resorbed ridge [Figure-3] with Class III ridge relationship.

Patient was explained about the prognosis and problems with the conventional denture and was advised to undergo pre-prosthetic surgery which she refused. The patient was then given the option of fabrication of unconventional modified flange denture. Patient agreed to the fabrication of unconventional denture.

Primary impressions of maxillary and mandibular edentulous ridge were made. Maxillary impressions with Alginate and mandibular with impression compound [Figure-4].

Maxillary impression was poured with Type-3 Dental Stone while mandibular impression in Type-2 Dental Plaster (Dentex, Dental Plaster Class II) [Figure-5].

The flabby tissues on maxillary ridge i.e. in premaxillary region was covered with double spacer of modeling wax [Figure-6]. Acrylic custom trays were fabricated. Maxillary final impression was made with Addition silicon (Medium Body) and zinc oxide eugenol impression paste (DPI Impression paste) for mandible after performing border molding with green stick(DPI Pinnacle Tracing Stick) [Figure-7].

The master casts were poured in type 3 dental stone (Kalabhai Kalstone) and maxillary cast was marked in the region of anterior labial undercut. Self cure acrylic resin (DPI RR cold cure) base plate was made as a record base using sprinkle-on technique. Subsequently, wax rims were fabricated over them for the jaw-relations appointment. Acrylic base plate was trimmed in the area of marked anterior labial prominence of maxilla. Jaw relation records were made at the next appointment of the patient [Figure-8].

Jaw relation records were mounted on articulator and teeth arrangement was done according to the principles given for the same [Class-III]. Patient's try-in of the denture was done [Figure-9] and patient was satisfied with the trial denture. Adequate lip support with no harmful effect on the musculature of face including facial expressions was observed.

Denture was fabricated using the conventional techniques of flasking, curing and polishing. Final prosthesis obtained and window was created in labial portion of maxillary denture.The window area was carefully sandpapered and polished.

In the next appointment, final prosthesis were given to the patient and checked for retention, stability, support and esthetics [Figure-10]. The denture was polished and tried in the patient's mouth for evaluation of appropriate esthetics and occlusion. After the necessary occlusal corrections, the prosthesis was given to patient.

The patient was recalled within a week for post insertion assessment. The patient was fascinated and satisfied with her flangeless denture and did not have any significant complaints. Patient was then instructed about the cleanliness and use of the dentures. Patient was satisfied with the outcome of the unconventional approach of the denture fabrication.[Figure-11]

Figure 1: Pre-operative

Figure 2: Flabby ridge in pre-maxillary area

Figure 3: Resorbed mandibular ridge

Figure 4: Primary impressions

Figure 5: Primary casts

Figure 6: Double wax spacer in flabby tissue region

Figure 7: Final Impressions

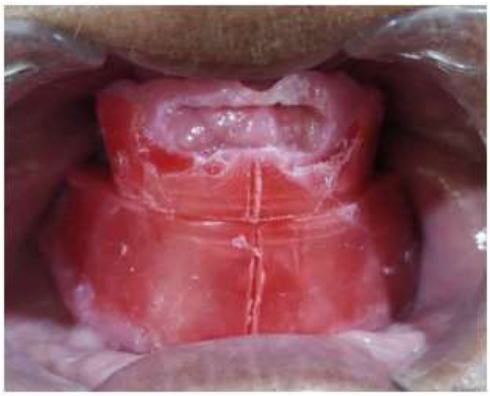

Figure 8: Maxillo-mandibular relations record

Figure 9: Try-in

Figure 10: Final winged denture

Figure 11: Post-operative

DISCUSSION

Flangeless denture is one of the non-surgical convention approaches to preserve the ridge.[1]The flangeless dentures have different names like gum fit, ridge grip, wing denture.

The labial vestibule width increases as the resorption of the labial cortical plate of the alveolar bone takes place. Most of the completely edentulous cases where this space is obliterated or decreased are either due to proclining maxillary anterior residual alveolar ridge or due to recent extractions where the labial cortical plate has undergone minimum or no resorption. It may also result if after extraction, the compressionof the socket is not done.[5]

Flangeless denture in this case report was suggested because of the prominent labial contour of the maxillary arch. A conventional denture would have resulted in severe labial fullness and an unaesthetic simian like appearance.[6] Flabby ridge is a superficial area of mobile soft-tissue affecting maxillary or mandibular ridges, which develop when hyperplastic soft tissue replaces alveolar bone. When found in the pre-maxillary region, it is usually the result of anterior hyperocclusion as in combination syndrome. These areas of mobile tissue provide limited support for the complete denture.[7] Conventional or mucocompressive impression procedures in flabby tissue result in ill-fitting of dentures due to recording of the underlying loose connective tissue in displaced state which recoils and dislodges the denture.The use of selective pressure or minimally displaced impression techniques should help to overcome some of these limitations.[6] Various available methods include use of window technique where a window is made in the region of flabby tissue and impression is made with the help of impression plaster[1] or by placing double wax spacer relief in the flabby tissue area and making impression with medium or light body addition silicone.[1]

In this particular case, primary impression for maxillary flabby ridge was made with alginate and final impression for the same was made with addition silicone medium body. Here in this case, window technique is not followed, as maxillary tuberosity region was also flabby, so custom tray was fabricated with double spacer.[6] After border molding, spacer is removed and relieve holes were made in the tray using round bur.[8] These relieve holes were made 4-6 in number before final impression is made.

Also in this case, the horizontal ridge relationship was class-III.Jaw relations were recorded in conventional manner after making a window in maxillary labial undercut for maintaining lip support as the final prosthesis. Some modifications were made in teeth arrangement. Posterior teeth were arranged in cross-arch cross bite position, with maxillary right posterior teeth and left posterior were arranged on mandibular left occlusal rim and right rim respectively. Also mandibular

left posterior teeth and right posterior teeth on maxillary right rim and left rim respectively.[9,10]

CONCLUSION:

The final prosthesis was winged flangeless denture for the management of the lip support due to pre-maxillary ridge prominence and it used special impression techniques for the management of flabby tissues present in both pre-maxillary ridge and maxillary tuberosity region. Class III ridge relationship was managed by cross-arch cross-bite teeth arrangement

REFERENCES

1. Paul G, Talukder D, Rathee S, Gupta A, Jain M, Mittal V. Flangeless denture: an innovative technique for management of labial undercut in completely edentulous patient: a case report. International Journal. 2019 Aug;5(8):225.
2. Srivastava S, Misra SK. Flangeless denture: An esthetic innovation. International Dental Journal of Students Research. 2018 Jun;6:24-5.
3. Hillerup S. Preprosthetic surgery in the elderly. The Journal of Prosthetic Dentistry. 1994 Nov 1;72(5):551-8.
4. Pai UY, Reddy VS, Hosi RN. A single step impression technique of flabby ridges using monophase polyvinylsiloxane material: a case report. Case reports in dentistry. 2014 Apr 27;2014.
5. Singh V, Goswami R, Rathi N. Flangeless complete denture and obliterated labial vestibule space. International Journal of Medical Reviews and Case Reports. 2020;4(7):20-2.
6. Bansal R, Kumar M, Garg R, Saini R, Kaushala S. Prosthodontic rehabilitation of patient with flabby ridges with different impression techniques. Indian journal of dentistry. 2014 Apr;5(2):110.
7. Kaur J. Liquid-supported dentures: A delicate treatment modality for flabby ridges. Indian Journal of Multidisciplinary Dentistry. 2018 Jan 1;8(1):48.
8. Chakarvarty K, Tomar SS, Tandan P, Modi R. Managing flabby tissue with different impression techniques: a case series. IJOCR. 2015 Apr;3:95-9.
9. Tambe A, Patil SB, Bhat S, Badadare MM. Cross-arch arrangement in complete denture prosthesis to manage an edentulous patient with oral submucous fibrosis and abnormal jaw relation. Case Reports. 2014 Sep 19;2014:bcr2013203065.
10. Jensen WO. Occlusion for the Class II jaw relations patient. The Journal of prosthetic dentistry. 1990 Oct 1;64(4):432-4.