

# BULBOUS RIDGE AND ITS RELEVANCE IN DENTURE ESTHETICS- CASE REPORT

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## **Abstract**

When the patient's intraoral circumstances are not optimal, complete denture fabrication presents a hurdle. In patients with excessive bulky ridges conventional flange extension causes compromised facial esthetics and often flanges of denture to be extended upto height of contour so as to be able to insert and remove but it reduces peripheral seal as well as retention. The ultimate aesthetic result is greatly threatened by labial ridge undercut, which is more frequently observed in maxilla than in mandibular edentulous persons. A labial flange is required for complete dentures in order to complete the denture contours, support the lips, and establish a border seal. A better prognosis might be achieved by avoiding the typical construction of the labial flange, which could limit function, degrade aesthetics, and compromise the facial support and muscles of facial

expression. For the fabrication of a successful complete denture, an unusual method is required. The current study addresses a straightforward, affordable, conservative, and non-surgical method of fabricating a denture for a patient with a large maxillary ridge without sacrificing face retention or aesthetics.

**Key words:** Denture esthetics, apron clasp, bulbous maxilla, flangeless denture

## **INTRODUCTION**

Shape of denture flange plays a major role in determining the facial esthetics. Complete denture fabrication becomes difficult when the optimal biological consideration of both soft and hard tissues is not met.<sup>1</sup> A labially proclined maxilla with an accompanying undercut is the most common issue affecting the aesthetics and construction of a complete denture. The maxilla is more likely than the mandible to

have an exceptionally pronounced ridge with a labial undercut due to the differential resorption pattern of the remnant alveolar ridge.<sup>2,3</sup>

Denture esthetics is often determined not only by size, shape, colour, form of teeth. It is also determined by thickness, contour extensions and colour of the denture base. In severely resorbed ridges the lip may appear collapsed and in bulky ridges lip may appear protrude hence suitable considerations in designing labial flange is to be considered. Pre-prosthetic procedures are taken into consideration in these circumstances in order to alter the shape of the bone and create a prosthesis environment that would restore function, be stable and retentive, preserve related structures, and satisfy aesthetics.<sup>4</sup>

When the buccally displaced maxillary anterior teeth are extracted, the remaining ridge can support the upper lip. Two-thirds of the upper lip will be significantly deformed from the base of the nose to the upper lip edge, notably the wet-dry line, if a denture base extension is inserted in the pre-maxilla.<sup>5</sup> A modified flange or flangeless denture should be taken into consideration in this case. Lack of room makes it difficult to arrange prosthetic denture teeth, which ultimately leads to an obviously unsightly swelling lip appearance. In these situations, pre-

prosthetic surgery may be a corrective measure; nonetheless, patient permission, mental state, and overall health are important factors for surgical execution. These variables may not always allow for the possibility of surgery in elderly people. Therefore, under such clinical circumstances, a prosthodontist can alter the design of a traditional denture and restore it with the aid of flange adjustments, keeping in mind all the fundamental specifications that the prosthesis must meet in order to produce the best possible outcome.<sup>5,6,7</sup>

This article describes successful rehabilitation of non-surgical treatment modality for proclined pre-maxilla in completely edentulous patient to achieve comprehensive rehabilitation with great regard to esthetics without compromising on retentive ability.

## **CASE REPORT**

A 62 years old male patient reported with chief complaint of missing teeth in upper and lower arches and wants to get it replaced, on intra oral examination patient with completely edentulous and bulged maxillary arch (Fig.1)

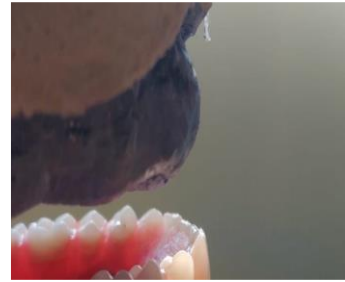
### **Fig.1 Bulbous maxilla intraorally**

and edentulous mandibular arch with favorable ridges. On extra oral examination noticed bulky pre-maxillary region, medical history revealed patient to be diabetic since 5years for which he was on hypoglycemic agents, so treatment was planned keeping patient requirements and medical history in mind.



#### **TREATMENT PLAN**

Since patient was diabetic and reluctant for surgical treatment of maxillary arch also keeping age factor in mind option for pre prosthetic surgical treatment to reduce maxillary ridge alveoloplasty is terminated and planned for the prosthesis with flange design modification to provide which is pleasing esthetics. Impression compound was used to make the initial impressions of the maxillary and mandibular arches. Low fusing impression compound was used to mould the border, and light body polyvinylsiloxane was used to make the final impression. Dental stone was then poured to create the final cast, and jaw relations and tooth arrangement were carried out. (Fig.2)



**Fig. 2 Bulbous maxilla lateral view**

During wax up denture try in marked bulky elevation of the upper lip was noticed with complete labial flange extended maxillary denture. Substantial bulky lip noticed. (Fig.3)



**Fig 3 Bulging upper lip with full contour denture.**

hence decision was made to reduce labial flange by marking upto height of contour in the maxillary arch from canine- to- canine region satisfactory lip contour was noticed which was accepted by the patient appreciable. (Fig.4)



**Fig. 4 flangeless denture**

Decrease in retention is noticed in flangeless denture, so to utilize the positive undercut, retentive ability of denture and to maintain esthetic 18 gauge wrought wire apron clasp been modified and adapted in the sulcus (Fig.5)



**Fig.5 Labial wrought wire with apron clasp**

attached to the denture base. Second try in was carried out to confirm lip contour and retentive ability of the denture. Utilizing conventional compression moulding acrylization processed dentures were obtained trimming and polishing and final denture insertion done. Happy with appearance and retentive ability was noticed by patient and taught to insert and withdraw maxillary denture with altered

labial tilt. Post denture insertion (Fig.6,7)



**Fig.6 Post insertion frontal view**



**Fig.7 Post insertion lateral view- satisfactory lip contour**

instructions were given periodic follow-up appointments were scheduled.

## DISCUSSION

When the hard and soft tissue requirements of the basal seat are not met. A diagnosis is essential to the best possible treatment strategy. An outstanding prosthesis is made possible by a well-thought-out treatment approach. Most important criteria for better prognosis is to be upto patients desires by offering significance to their request. The anatomy of residual ridges differs in each case hard tissue undercuts when judiciously used provide positive effect on retention of prosthesis, which are most commonly seen

in bucco-lingually or labially as mechanical means of retention in completely edentulous patients.<sup>8</sup>

The aesthetics of the face are frequently impaired by excessively large ridges. The labial fullness is further compromised by the labial flange's thickness, which results in an unsightly maxillary denture. Just as important as prosthodontic restoration of lost teeth is pleasing facial aesthetics.<sup>2,3</sup> In order to avoid this problem been various management technique been tried to eliminate the undercut.. Surgical correction of maxilla with alveoloplasty can be done which was ruled out due to systemic condition of patient. Modifications of labial flanges in maxillary denture can be planned like denture without labial flange which may provide better esthetics but will compromising on retention of denture. To enhance esthetic in such cases any modification of dentures would involve reduction of labial fullness by restraining denture base over bulged maxilla without compromising on denture retention.

Thinning of the denture flange will be inherent disadvantage of perforation and fracture during period of service. Flangeless denture or gum fitting denture or ridge grip esthetic denture in which entire flange is eliminated however leads to decrease in surface area of coverage and

compromising in retentive ability.<sup>9</sup> The denture with acrylic spikes or wings are used in labial undercut the main disadvantage of which may impringe the soft tissue and may lead to fracture.<sup>10,11</sup> Stainless steel wire extension with acrylic tags have been reported for use to reduce the fracture of acrylic spikes and to incorporate flexibility and adaptability to labial undercut, however in this cantilever flexible stainless steel wire are prone for positional distortion which may cause soft tissue trauma or recurrent maintenance visit and also flexible terminal acrylic tags entrap food and debris.<sup>4</sup>

In the present case anterior portion from maxillary right canine to left canine portion was removed to avoid over contouring and to improve esthetics a well adapted continuous labial arm apron clasp design with stainless steel clasp was given to obtain maximum undercut engaging gingivally without compromising labial fullness and providing best possible retention and strength to the denture.

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