FABRICATION OF FLANGELESS COMPLETE DENTURE TO IMPROVE ESTHETICS: A CASE REPORT

Mandeep Kaur¹, Shiv Kumar², Sakshi Malhotra Kaura³, Simratdeep Kaur⁴, Jaspreet Singh⁵

Abstract

Face is the most important part which determines one’s social acceptance. Loss of teeth affects the facial appearance and also may create psychological trauma in a patient. Prosthesis may affect the appearance of a person by either enhancing or detracting from natural appearance. In routine dental practice, patients with varying ridge morphology are encountered. One of the common variations observed is the thick labial cortical plates with severe labial undercut. This case report describes an alternative to surgical correction of an inclined premaxilla with severe anterior undercut in a completely edentulous patient. Conventional denture fabrication produced an excessive labial fullness giving a simian appearance. Thus, flangeless denture was planned to give a more esthetic appearance to the patient.

Author Affiliations:

¹-⁴ Department of Prosthodontics, Luxmi Bai Institute of Dental Sciences, Patiala, Punjab
⁵ PG student, Department of Prosthodontics, Gian Sagar Dental College & Hospital, Banur (Patiala), Punjab

Keywords: Pre-prosthetic surgery, unconventional, pre-maxilla, flangeless

*Corresponding Author:

Dr. Mandeep Kaur,
PG student, Department of Prosthodontics,
Luxmi Bai Institute of Dental Sciences, Patiala, Punjab.
Email – dr.mandeepkaur@yahoo.com
Mobile- 9463478369
INTRODUCTION

In modern era, the face determines one’s social acceptance. Facial appearance is a significant part of the self-image. The loss of teeth affects the facial appearance and often creates tremendous psychological trauma to a patient. The prosthesis can either restore or distort a patient’s personal image, depending upon the naturalness and attractiveness of its appearance.

Rehabilitating a complete denture patient is always a challenging situation and any unusual morphology accentuates the task\cite{1}. Some abnormal conditions that exist in the edentulous patient can be corrected surgically prior to construction of dentures, enabling the patient to function more successfully following prosthetic restoration\cite{2,3}. However, use of surgical aid is not always possible. The major obstacle for pre-prosthetic surgery is getting patient’s consent\cite{4}. The increasing demands of patients have led to the outcome of the special, i.e the unconventional approach for fabricating complete dentures. New techniques based on same old fundamentals of prosthodontics is known as the unconventional complete dentures, a manifestation of new vision in prosthesis fabrication\cite{5}.

One such clinical condition, which may pose a problem in denture insertion and may even affect the denture aesthetics, is a bulbous labial cortical plates accompanying severe labial undercut which is commonly seen\cite{6}. Aesthetically, on extraction of the buccally displaced maxillary anterior teeth the residual ridge is in a position to support the upper lip. If a denture base extension is placed in the pre-maxilla, two-thirds of the upper lip will be severely distorted from the base of the nose to the edge of the upper lip, specifically the wet-dry line\cite{7}. Thus, in this situation modified flange or flangeless denture is fabricated.

A key indication for a modified extension of prosthesis is bulbous labial bone with severe undercut where labial flange of prosthesis is not needed required because of sufficient bone and lip support\cite{7}. In these instances, adding a buccal flange can distort the facial support and muscles of facial expression limits the function and compromise the esthetics. The flangeless maxillary complete denture can meet aesthetic requirements and provide ideal support for the upper lip. By maintaining the undercuts in the pre-maxilla, additional retention is potentially available.
CASE DETAILS

A 42-year old female patient visited the Department of Prosthodontics with a chief complaint of missing teeth and wanting a replacement for the same. Extraoral examination of the patient revealed a well supported upper lip [Figure-1,2].

Intraoral examination of the patient revealed a severe anterior labial undercut in maxillary ridge[Figure-3,4].

A diagnostic impression was made. Patient was explained about the 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 with impression compound and primary casts were poured in Plaster of Paris(Dentex, Dental Plaster Class II) [Figure-5]and maxillary cast was marked in the region of anterior labial undercut [Figure-6].
Fig-5- Primary Casts

Fig-6- Marked Maxillary Primary cast

Special trays were made and final impressions were made with zinc oxide eugenol impression paste (DPI Impression paste) after performing border molding with low fusing impression compound (DPI Pinnacle tracing sticks). The master casts were poured in type III dental stone (Kalabhai Kalstone) [Figure–7] and maxillary cast [Figure-8,9] was again marked in the region of anterior labial undercut [Figure-10].

Fig-7- Master casts

Fig-8-Maxillary Master Cast (Lateral)

Fig-9- Maxillary Master Cast (Frontal)

Fig-10- Maxillary master cast (marked)

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 undercut of maxilla. Jaw relation records were made at the next appointment of the patient [Figure-11,12].
Jaw relation records were mounted on articulator and teeth arrangement was done according to the principles given for the same [Figure-13]. Patient’s try-in of the denture was done [Figure-14] 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.
In the next appointment, final prosthesis were given to the patient and checked for retention, stability, support and esthetics [Figure-18-21]. Patient was then instructed about the cleanliness regimen and use of the dentures. Patient was satisfied with the outcome of the unconventional approach of the denture fabrication.

DISCUSSION:
Facial and dental esthetics significantly influences the prosthetic replacement. Functional integrity along with esthetics is also demanded with any prosthesis. But, the abnormal morphology of the oral structures hinders the fulfillment of all these requirements[8]. In this situation, an eccentric thinking slightly different from...
routine conventional way may help in changing the whole scenario. In this case after clinical examination it was revealed that the major cause of unesthetic appearance is labially inclined premaxilla and the accompanying undercut which led to excessive fullness in the maxilla. The goals of pre-prosthetic surgery is to create a favourable situation for the prosthesis that would restore function, provide stability and retention, preserve associated structures and satisfy esthetics but many a times patient’s consent create hurdle for this which may be due to their phobia for surgery or medical conditions which contraindicate the surgery. Since the patient did not want any surgical procedure, modification of the labial flanges of the maxillary denture was contemplated. The technique of using a flangeless maxillary denture has been described as an important method for the patient and the dentist to preview the expected esthetic result three dimensionally, and to determine the prosthetic design accordingly.

CONCLUSION:
Although the flangeless complete denture is not used routinely, it has been successfully used in the treatment of edentulous patients with high esthetic demands. Modified maxillary denture is a valuable treatment modality that should be considered when treating edentulous patients with some abnormal oral morphology like in this case, a deep anterior maxillary undercut with prominent pre-maxilla.

Conflict of Interest Statement-
There is no conflict of interest.

REFERENCES:


