ORIGINAL RESEARCH PAPER

Prosthodontics

KEY WORDS: flangeless complete denture, labial undercut, metallic extention

MANAGEMENT OF COMPLETELY EDENTULOUS PATIENTS WITH SEVERE LABIAL UNDERCUT BY FLANGELESS DENTURE WITH METALLIC EXTENTION TO ENGAGE UNDERCUT: A CASE REPORT

Dr.Yusuf Shaikh* PG student (department of prosthodontics) at CSMSS dental college Aurangabad.*Corresponding Author

Dr. Kalyani Deshmukh MDS (Prosthodontics)

ABSTRACT

Loss of teeth affects facial appearance of person, patients with varying ridge morphology are encountered. One of the common variation encountered is thick labial cortical plates with severe labial undercut. Alternatives to conventional complete denture have been controversial because of the uncertainties regarding retention of dentures. The following case report presents a distinctive non surgical technique of treating and reproducing excellent aesthetics along with patient's oral comfort and functions, for a patient having bulky maxillary ridge with the help of a flangeless denture with metallic extention which engages undercut.

INTRODUCTION:

Residual alveolar ridge form may differ in each patient from severely resorbed to widely massive ones. An exorbitantly noticeable bone is more typical in maxilla then in mandible. However there are some basic goals to be achieved when restoring facial aesthetics. One of such goals is to provide adequate amount of labial fullness and lip support along with good comfort and function.[1]

Proclined maxilla with presence of associated undercut is one such condition. Tissue undercuts ranging from moderate to severe must undergo surgical corrections for reduction of undercuts. Pre-prosthetic surgeries including removal of severe undercuts by removal of minimum amount of bone and avoiding the loss of bony cortical plate, is considered essential in mouth preparation before a denture fabrication.[2,3,4] Use of reconstructive surgical treatment is not always feasible owing to lack of patients motivation. Systemic diseases such as uncontrolled diabetes mellitus, hypertension and heart ailments restrict the surgical rehabilitation.[5]

In such clinical conditions where the patient is not very keen in undergoing surgery, the prosthodontist can modify the art of conventional denture, and restore it with a simple, economical, conservative and non surgical treatment of choice for fabrication of denture.

The following case report presents a distinctive non surgical technique of treating and reproducing excellent aesthetics along with patient's oral comfort and functions, for a patient having bulky maxillary ridge with the help of a flangeless denture.

METHODOLOGY:

Case 1: A 58-year-old female patient reported to Department of Prosthodontics, dental college and hospital India with the chief complaint of difficulty in eating and speaking due to teeth loss. On extra oral examination, it was found that the patient had a convex profile with an ovoid face, class 2 profile (Fig.1). Intraoral examination showed that the patient had a U-shaped arch with proclined anterior maxillary ridge and an accompanying severe labial undercut (Fig.2).

Technique:

Impression compound was used to make the primary impression of maxillary and mandibular arch. Custom trays were fabricated on the primary cast. Border moulding was done utilizing green stick compound and final wash impression was done by using light body polyvinyl siloxane. Once the master cast is ready jaw relation was recorded (Fig.3). Articulation was done and teeth arrangement was completed (Fig.4). After try in, during wax-up, the labial flange was completely removed from canine-to-canine leaving two acrylic spikes extending anteriorly from the distal side enabling in retention by engaging the undercut. For metallic extention which engages undercut, wax pattern of flange was made after trimming acylic spikes, it was then casted in CO-CR After the casting was completed, flasking of the denture was carried out. (Fig.5 & 6). The final flangeless denture was polished (Fig.7) and attempted in the patient's mouth for assessment (Fig.8). Occlusal corrections were done, the denture insertion was done. The patient was reviewed following 24 hours, a week and one month for post-insertion visits. The patient was satisfied and happy with the outcome (Fig.9).

Fig.1 Extra-oral photograph

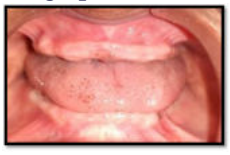

Fig.2 Intra-oral photograph

Fig.3 Jaw relation recorded

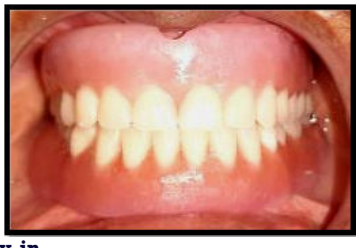

Fig.4 Try-in

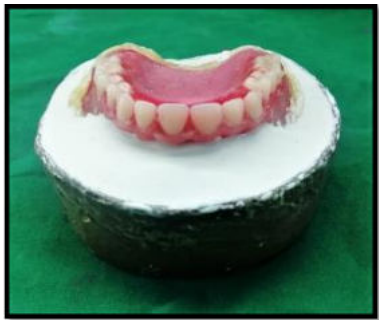

Fig.5 Flasking

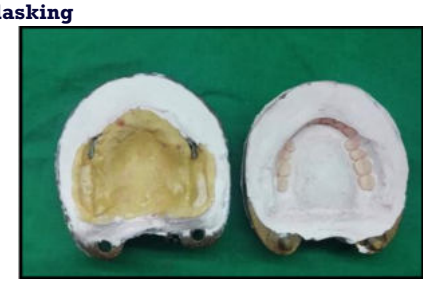

Fig.6 Dewaxing

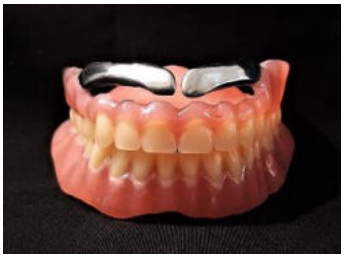

Fig.7 Final denture

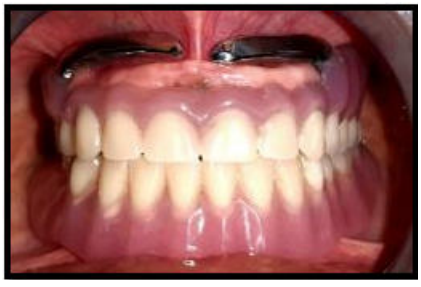

Fig.8 Denture-insertion

Fig.9 Post-operative photograph

Case 2:

A 55-year-old female patient reported to department of prosthodontics who was already a denture wearer with complaint of difficulty in chewing and bad aesthetics with old denture. On extra oral examination, it was found that the patient had a convex profile with an ovoid tapering face, short lip length (Fig.10). Intraoral examination showed that the patient had a U-shaped arch with proclined anterior maxillary ridge and an accompanying severe labial undercut.

Technique:

Similar technique as in case 1 was followed for fabrication of denture with metal flange (Fig.11- Fig.14).

Fig.10 Extra-oral photograph

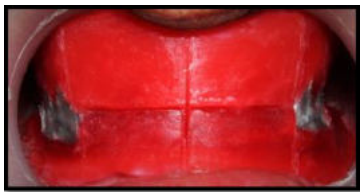

Fig.11 Jaw relation recorded

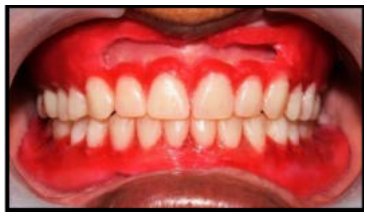

Fig.12 Try-in

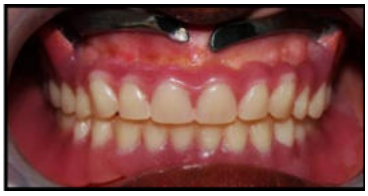

Fig.13 Denture-insertion

Fig.14 Post-operative photograph

DISCUSSION:

The flangeless dentures have different names like gum fit, ridge grip, wing denture.[7] The labial vestibule is a space that is present between the mucosa covering the inner side of the lip and the mucosa over the gums. After the teeth are lost, the lips fall inward due to unopposed contraction of the buccinator and orbicularis oris muscles.[8,9] The space increases as the resorption of the labial cortical plate of the alveolar bone take place. Most of the completely edentulous cases where space is obliterated or decreased are either due to proclaiming 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 compression of the socket is not done. Hypertonic maxillary lip and overactive modiolus can obliterate labial vestibule. Another conservative treatment option include use of soft liners that can easily adapt in the undercut area without causing trauma to underlying mucosa.[10]

CONCLUSION:

This clinical report describes the fabrication of an economical, quick and easy method of fabrication of a

flangeless denture for rehabilitation of proclined maxillary ridge with presence of labial undercut. Nonsurgical procedures can thus be utilized for the fabrication of the prosthesis as they are noninvasive, provide better acceptance, and ultimate satisfaction for the patient. The flangeless denture was convenient for the patient in terms of insertion, removal and function.

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