



Unique Journal of Medical and Dental Sciences

Available online: www.ujconline.net

Case Report

CHALLENGES TO COMPLETE DENTURE ESTHETICS-ALTERNATE WAYS

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Received: 30-06-2016; Revised: 28-07-2016; Accepted: 26-08-2016

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ABSTRACT

Facial aesthetics play an important role in a person's social, personal and professional life. Even the edentulous patient demands denture prosthesis which will not only fulfil their functional requirement but will also enhance or maintain their facial esthetics. Oral changes seen after complete loss of teeth sometimes poses problem in achieving this goal. This article presents two case reports in which esthetic demands of completely edentulous patients have been fulfilled by modifying the conventional denture.

Keywords: Esthetics, Labially inclined premaxilla with undercuts, Winged denture, Sunken cheeks, Cheek plumper.

INTRODUCTION

Demand for aesthetics has increased these days not only in dentulous patients but also in edentulous patients. To meet these demands, prosthodontist's role has also widened from merely replacing the missing teeth and fulfilling the functional requirement of the patient to restoring the facial aesthetics. But in some cases, rehabilitation along with restoration of aesthetics becomes a challenge. Two such clinical conditions include slumped or hollow cheeks and labially inclined premaxilla accompanied by severe undercut.

Condition such as slumped cheeks arises due to factors like extraction of molars and resorption of supporting alveolar ridge associated with loss of muscle tonicity, thinning of tissues due to aging or weight loss¹. In such cases, esthetics can be enhanced by providing extra support to the dentures. This can be achieved by using cheek plumper. The cheek plumper prosthesis can be detachable attached to the prosthesis by customised attachments², push buttons³ and magnets¹ or non detachable fabricated as a single unit.

Another clinical condition compromising the aesthetics is excessive labial inclination of premaxilla. The conventional denture in such case will result in excessive fullness on wearing, thus giving a swollen lip appearance⁴. The accompanying undercut poses problem during denture insertion. Such a condition can be treated by pre prosthetic surgical procedure. But this option is not always possible as

many patients are not comfortable with the idea of surgery^{4,5}. For such cases, a non invasive alternative is to fabricate a flangeless prosthesis i.e. prosthesis without a labial flange in maxillary anterior region.

The purpose of this article is to present case reports in which satisfactory aesthetics and functional results have been obtained in non invasive manner in patients with prominent premaxilla and sunken cheeks.

CASE REPORT 1

DENTURE WITH CHEEK PLUMPER

A 58 year old male patient reported to our department with the chief complaint of missing teeth. He had been edentulous for the past 1 year and as he had sunken cheeks, he requested for a prosthesis that would not only fulfil his masticatory requirements but will also make his face look fuller. Thus, it was planned to fabricate complete denture for the patient with cheek plumper for the maxillary denture. As cheek plumper prosthesis with maxillary denture fabricated as single unit being heavy would have affected the retention of the prosthesis, it was planned to fabricate a detachable plumper prosthesis.

Procedure

1) Preliminary impression and secondary impression for both maxilla and mandible were made in the conventional manner and master casts were obtained.

2) Denture bases were fabricated on the master casts on which occlusal rims were fabricated and jaw relations were recorded. Teeth arrangement was then done. During the try in appointment, first the waxed denture was tried in the patient's mouth for occlusion and esthetics. Then wax template were made for the cheek plumper and attached to the distobuccal region of the maxillary denture. The facial esthetics of the patient was evaluated as the cheek plumper gave a fuller appearance. The templates were adjusted according to the patient's esthetic requirement. After seeking patient's approval, the waxed plumper was separated from the waxed denture.

3) For the final attachment of cheek plumper with the maxillary denture, custom made attachments were used. For the fabrication of the attachment, two wax patterns were made consisting of a rectangular base of 10 mm X 6 mm dimension with two cylindrical projections of 3 mm diameter with a ball end. The width of the rectangular base was kept slightly short of the width of the plumper prosthesis. Then the attachments were cast using chrome cobalt alloy. They were polished on all the surfaces except for the surface which would be inserted in the denture as the surface irregularities aid in better retention of the attachment to the denture. (Figure 1).



Figure 1 : Custom made attachments for cheek plumper

4) Acrylisation of the denture was done in the conventional manner. The cheek plumper prosthesis was acrylised with the attachment inserted into it. (Figure 2)



Figure 2 : Attachment inserted into waxed cheek plumper followed by flasking and dewaxing

On the appointment of denture insertion, first the finished and polished dentures were tried in the patient's mouth. Then the acrylised plumper prosthesis was tried in the mouth and required corrections were done. In the corresponding part of the denture, concavities were made. Orthodontic separators were placed over the attachments to get snap fit. Autopolymerizing resin was added in the concavities and

plumper prosthesis was inserted into it. (Figure 3) The separators allowed close approximation of the plumper with the denture and also facilitated removal from the denture. Patient was instructed on the use of plumpers and after evaluating fit, esthetics and retention of the denture, they were delivered to the patient. (Figure 4).



Figure 3: Concavities with separators in denture for attachment of plumper and finished prosthesis



Figure 4: Pre and Post Operative extraoral view

CASE REPORT 2

FLANGELESS WINGED COMPLETE DENTURE

A 52 year old female patient reported to our department with the chief complaint of difficulty in mastication and requesting fabrication of complete denture. She had been edentulous for the past 8 months. On examination, it was found that the patient had labially inclined premaxilla and a severe labial undercut. Keeping in view the difficulty the undercut would cause during insertion and removal of the denture and also its effect on the fullness of the labial flange of the denture, alveoplasty was suggested for which the patient refused. Therefore, a non surgical treatment was planned which included modifying the labial flange of the denture.

Procedure

1) Preliminary impression of the maxillary arch was made with irreversible hydrocolloid material so that the impression can be retrieved easily without injuring the patient's mucosa. Preliminary impression of the mandibular arch was made with impression compound.

2) Special trays were fabricated using autopolymerizing resin on the primary casts after careful blockout of the undercut area keeping them 2 mm short of the sulcus. Border molding and secondary impression for the mandible was done in the conventional manner. Single step border molding using polyvinyl siloxane putty was used for maxilla followed by secondary impression using light body impression material keeping in view the fragility of greenstick and zinc oxide impression material.

3) Denture base were fabricated on the master casts after blocking out the undercut area. The maxillary base plate was trimmed completely from the labial flange area from canine to canine leaving two wings extending approximately upto the mid of the central incisor region. This was done for the easy insertion and removal of the denture base. It also helped in maintaining the already existing labial fullness. Occlusal rims were made and maxillomandibular relation was then recorded in the conventional manner. The thickness of the wings was adjusted according to the patient's esthetic requirement. It was articulated and teeth arrangement was done in accordance with the aesthetic guidelines. A try in was then done.

4) The dentures were waxed up. Thin layer of wax was also added in the maxillary labial flange area that was trimmed. This was done for easy flasking. It was invested and processed in the conventional manner. After deflasking the denture, the labial flange of the denture was carefully trimmed leaving two wings of 2 mm thickness and 5 mm width. Thus, maxillary denture in the labial flange area covered only the ridge crest area of the maxillary edentulous ridge. These wings aid in retention of the denture. The thickness of the wings had no effect on the esthetics and lip fullness as the wings covered only the labial sulcus area. Scalloping was done on the remaining labial flange area according to the gingival shape of the anterior teeth to maintain esthetics and a slight bevel was given on the scalloped border. This was done so that the denture and gingiva would appear to be merging. The denture was then finished and polished.

5) During denture insertion, it was found that the retention of the denture was maintained due to wings and also the insertion and removal of the denture was easy. Since, in the area of prominence, lips and perioral tissues were in direct contact with the ridge, aesthetics was also maintained. (Figure 5,6)

DISCUSSION

Prosthetic rehabilitation does not mean to simply replace the missing teeth, but also to restore the facial aesthetics¹. Conventional procedures in some cases pose difficulty in fulfilling these requirements. One such clinical condition is of patient with slumped cheeks. To provide extra support to the cheeks, cheek plumper is given which can be detachable or non detachable from the denture. In the present case, detachable cheek plumper was fabricated to reduce the weight of the final prosthesis. To form a detachable unit, Custom made attachments made from cobalt chromium alloy were used as they are biocompatible, cause rare allergies and are resistant to corrosion².

Another clinical condition presented here is of prominent premaxilla with severe labial undercut. Conventional denture if given in this case would have necessitated excessive anterior blockout resulting in excessively bulky labial flange⁴. This would have led to excessive fullness on wearing the denture⁴. As the patient refused to undergo any surgical procedure, therefore alveoplasty and implant retained fixed complete denture were ruled out. Therefore, modifications were done in the conventional denture by trimming the labial flange area of the maxillary denture. This could have affected the retention of the prosthesis. Palatal Suction cups which provide high retention were not used because of their pathological effects on the palatal tissues⁶. Magnets can be incorporated in such case but it requires surgical procedure for which the patient refused. Therefore, trimming was done leaving two wings from the canine eminence region to aid in retention of the denture. The wings were thin enough not to affect the lip fullness.

CONCLUSION

Simple, cost effective and non invasive alternative to conventional dentures have been described in this article to improve the facial aesthetics of the patient. The methods used did not cause hindrance in the retention of the denture and both the patients were comfortable and completely satisfied at the end of the treatment.

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Figure 5 : Finished maxillary denture and post operative intraoral view



Figure 6 : Pre and Post Operative extraoral view

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Source of support: Nil, Conflict of interest: None Declared