Case Report

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Alternate Ways to Aid Complete Denture Esthetics

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ABSTRACT

Background: 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, labial, pre maxilla, undercuts, prong denture, sunken cheeks, cheek plumper.

INTRODUCTION

Demand for esthetics has increased these days not only in dentulous patients but also in edentulous patients. To meet these demands, Prosthodontists 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 sunken or hollow cheeks and labially inclined premaxilla accompanied by severe undercut.

Condition such as sunken 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 loss[1]. 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 customized die pin attachments, other attachments[2], push buttons[3] and magnets[1] 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 appearance[4]. 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 68 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.

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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

The Preliminary impression and secondary impression for both maxilla and mandible were made in the conventional manner and master casts were obtained. Denture bases were fabricated on the master casts on which occlusal ris 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. Further for the attachment of cheek plumper: Two holes were made with a straight fissure bur on the buccal side of maxillary denture and corresponding inner side of the cheek plumper. Die pin was made short according to the patient's requirement. Sleeve of the die pin was attached with the autopolymerizing resin on the holes made on the maxillary denture. On the corresponding cheek plumper part, die pin was inserted and attached with autopolymerizing resin. Patient was instructed on the use of plumper and dentures were delivered after evaluating them for fit and esthetics. Acrylisation of the denture was done in the conventional manner. The cheek plumper prosthesis was acrylised separately.

CASE REPORT 2

FLANGELESS WINGED COMPLETE DENTURE

A 74 year old male patient reported to the department of Prosthodontics with the chief complaint of difficulty in mastication and unesthetic denture. He had been edentulous for the past 6 years. As per the history revealed that dentures were not fulfilling his esthetic demand and made his mouth to appear fuller. He was not able to close her lips and her speech was not clear. The patient had ovoid face, convex profile, normal muscle tone and normal lip. 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, alveoloplasty was suggested for which the patient refused. Therefore, a non surgical treatment was planned which included modifying the labial flange of the denture.

Procedure

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.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 was done in the conventional manner. Denture base were fabricated on the master casts after thoroughly 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 and the dentures were waxed up.

After completing the wax-up and sealing the record base, in this case a novel flasking technique was used. In anterior land area of the master cast, V- shaped sharp grooves were made. Then polyvinyl siloxane rubber base impression material in putty consistency was mixed following manufacturer's instruction and was adapted over

the anterior section of the master cast from the sulcus to the cervical margin of the teeth (i.e., canine to canine). This was done in order to preserve the waxing and carving and design of the labial flange. The three grooves were made on the outer side of putty to orient it properly with the plaster during flasking.

Rest of the laboratory procedure was carried out in a conventional way. After processing, finishing and polishing were done, the denture insertion was performed. Patient was highly satisfied with the appearance and function. The speech was clear and the patient's problem of fuller appearance of the upper lip was rectified. This was all possible because of modified labial flange where acrylic was removed and lip was in direct contact with ridge

DISCUSSION

Prosthodontic rehabilitation does not mean to simply replace the missing teeth, but also to restore the facial aesthetics.[7] 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 corrosion.[2]

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 flange. This would have led to excessive fullness on wearing the denture.[8] 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 tissues.[9]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 noninvasive alternative to conventional dentures have been described in this article and cab be used in routine procedures 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. Rehabilitating an edentulous patient with sunken cheeks, bulbous labial cortical plate and severe labial undercut, a diverse thinking of modified labial flange design of maxillary and mandibular dentures & adding of cheek plumpers had justified its importance by providing a satisfactory smile on the patients face.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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