

## A Novel Technique to Improve Complete Denture Esthetics: Undetachable Cheek Plumper Prosthesis

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### Abstract

### Case Report

The 2 major muscles of the cheek are the masseter and buccinator whose major function is to help in chewing of food. At a younger age these muscles are supported by teeth but with old age and resultant loss of teeth this support is steadily lost. There is also reduced tonicity of the facial muscle resulting in the appearance of sunken and slumped cheeks which is not aesthetically appealing. By placing a complete denture and using cheek plumper to the flange area the esthetic appearance can be improved. This also provides support to the cheek muscles. Various works of literature speak about the use of magnets and various other customized attachments to help plump cheek muscles but, they have disadvantages. This clinical report describes in brief a non-detachable method of fabrication of a cheek plumper prosthesis for improving the esthetics of the patient which will thereby improve his standard of living.

**Keywords:** masseter, buccinators, Undetachable, Prosthesis, Denture Esthetics.

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### INTRODUCTION

Emphasis on facial esthetics has become an integral part of dental treatment. Prosthetic rehabilitation of a completely edentulous patient no longer confines to only replacement of missing teeth. Patients are increasingly demanding improvement in esthetics at the end of treatment. Slumped or hollow cheeks can add years to a person's age and hence have a negative effect on the self-confidence of the patient.

Cheek plumper or cheek lifting appliance is essentially a prosthesis that supports and lifts the cheek to provide necessary support and esthetics. A conventional cheek plumper prosthesis is single unit prosthesis with extension near premolar-molar region which supports the cheek.

Cheek plumper can be of two types

- Undetachable / Conventional Cheek Plumper
- Detachable cheek plumper.

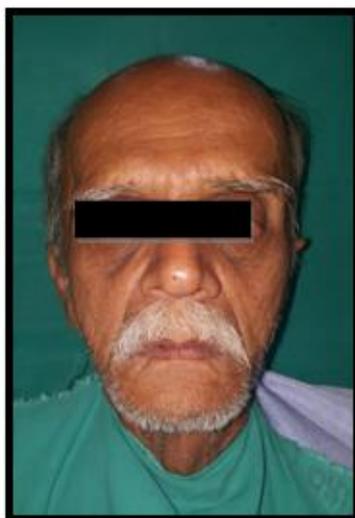
Undetachable cheek plumper has some limitations like increased weight which could hamper retention of the maxillary complete denture and make it difficult to insert [1]. Hence newer methods of making

the plumper hollow, need to be considered. Reduced weight and size of the attachment also make it more suitable for continuous and long term usage of the denture without causing any muscle fatigue.

This clinical report focuses on how to improve facial aesthetics of completely edentulous patients with sunken cheeks with the help of undetachable hollow cheek plumper and describes a simple, effective and noninvasive treatment alternative for such patients.

### CASE REPORT

A 72 year old male patient came to the department of prosthodontics with a chief complaint of difficulty in chewing food because of missing teeth. After the examination of the patient intraorally, complete edentulous upper and lower arches were noticed. The patient had mobile and edentulous teeth for the past 3 years. The patient lost his teeth over duration of 5 years due to the mobility of the teeth. Extra-oral examination of the patient clearly shows the poor aesthetic appeal, flaccid oral musculature causing the cheek muscle to appear sunken and unsupported (fig 1).



**Fig-1: extra oral photograph**

The patient was consciously concerned about his aesthetics. So keeping in mind the requests and demand of the patient, a treatment plan was formulated. It was decided to give the patient a conventional complete denture with an undetachable cheek plumper which was attached to the maxillary and mandibular denture.

For this, the maxillary and mandibular impressions were made using impression compound in a stock tray and primary casts were obtained. Self-cure acrylic resin was used to make custom trays from the

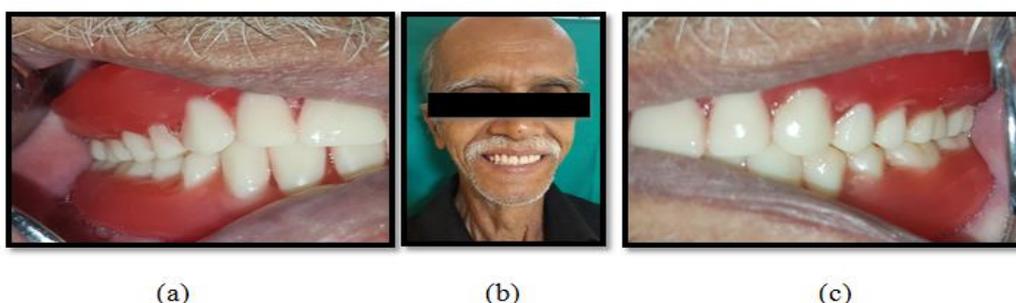
obtained primary casts. Border molding was carried out using soft green tracing sticks after checking the tray extension. A wash impression was made with zinc oxide eugenol impression paste. The obtained impressions were beaded using beading wax and boxed in the regular manner. Secondary casts were poured using type 2 dental stone and used to fabricate denture base and occlusal rims. The patient's jaw relations were recorded and a trial was carried out in order to check the occlusion & aesthetics. During the trial, a template for the cheek plumper was fabricated using modeling wax (fig 2).



**Fig-2: waxed up trial denture with buccal extensions**

This wax was then moulded and placed over the maxillary and mandibular right and left buccal flange of the denture base. Border movements were

done so that the wax is well adapted. Movements were repeated till the cheeks gained required fullness (fig 3).



**Fig-3: trial denture insertion to check cheek fullness**

Denture flasking and dewaxing procedures were finished for the final denture with cheek plumpers.

The resultant mould space was then packed with heat-polymerizing acrylic material (fig 4).



**Fig-4: Dewaxing for final denture**

Before completion of packing, the lost salt technique (table salt wrapped in cellophane sheet and

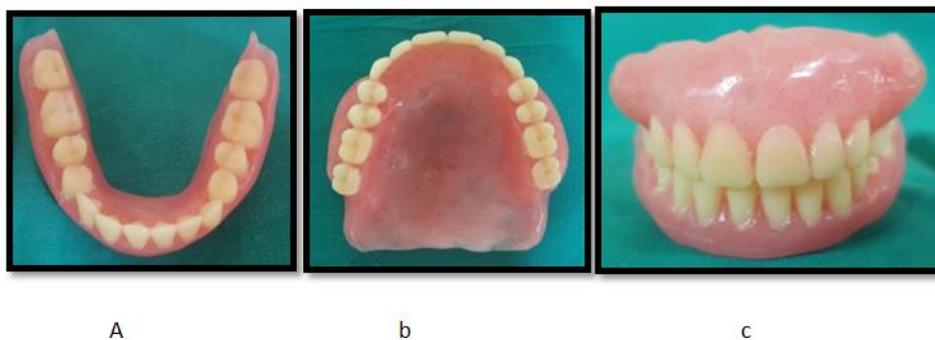
packed) was employed in order to make the plumper bulb hollow and weightless in nature (fig 5).



**Fig-5: final packing with lost salt technique**

This was followed by the normal curing procedure. After curing, the cured final prosthesis and

plumpers were retrieved. Trimming, finishing, and polishing procedures were performed (fig 6).



**Fig-6: finished and polished final denture**

Instructions were given to patient post insertion of the denture. Follow up was done with the

patient after 24 hours, 48 hours, 1 week, 1 month, 3 months and 6 months for comfort and aesthetics. The

patient was satisfied with the procedure, its appearance and also adapted well to the undetachable cheek

plumpers.



Fig-7

## DISCUSSION

In today's world denture esthetics is not confined only to selection of the teeth based on factors like form, shape, color, arrangement and sex. Instead, it is more about harmonization between the artificial and natural tissues. Loss of teeth in posterior region results in loss of cheek support due to which cheeks tend to move medially to meet laterally expanding tongue [2]. Also, loss of the teeth in the anterior region leads to changes in cheek contour as a result of loss of vertical dimension of occlusion [3]. The apparent loss of subcutaneous fat, buccal pad of fat and elasticity of connective tissue also produces the slumped cheeks, seen in the aged.

Rectifications of drooping of cheeks can be done by different methods like reconstructive plastic surgery, injecting the botulinum toxin (BOTOX) in the facial muscles and using different type of prosthesis<sup>4</sup>. Conventional cheek plumpers which are a single unit appliance with extensions on either side of the posterior flange of denture base, leads to muscle fatigue and decreased retention. But these are better than the detachable type because they are more suited for patients who require a lesser amount of plumpness.

Another type is the detachable cheek plumper which can be easily inserted in patients with reduced mouth opening. Various attachments like magnets, push buttons, etc. can be used to attach this cheek plumper with the denture. Clinical magnets being expensive, push button attachments are the most affordable means to attach cheek plumper to the denture [5]. But the cost factor can further be avoided by the use of an undetachable type of denture.

## CONCLUSION

The ability of the dentist to understand and recognize the problems of edentulous patients, to select the proper course of treatment required and reassure them is of great clinical importance. This case report describes a simple and economic prosthetic aid that not only offers esthetics but also improves the psychological profile of the patient.

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