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# Detachable Cheek Plumpers to Improve Aesthetics in Conventional Complete Denture: A Case Report

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## ABSTRACT

Loss of tooth is associated with, resorption of the alveolar process, and reduced tonicity of the facial muscles, leading to sunken cheeks and an unesthetic appearance. Esthetics is an integral part of any prosthodontic treatment. For patients in need of complete dentures the sunken appearance can be an esthetic concern. This article describes a simple, scientific, cost-effective technique to improve facial esthetics in the completely edentulous patient with the help of a detachable cheek plumpers.

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## INTRODUCTION

Esthetics play an integral role in a person's professional and social life.<sup>1</sup> The long term edentulism is associated with resorbed alveolar ridge, reduced muscle tonicity, and hollow cheeks.<sup>2</sup> Loss of teeth followed by resorption of the alveolar ridge and loss of muscle tone leads to the slumping of the cheeks, resulting in a hollowed-out, and sunken appearance with exaggeration of wrinkles because of tissue laxity. The form of the cheek is determined by the support provided by the teeth, the ridges or the dentures. With the loss of the posterior teeth, the cheeks tend to collapse to varying degrees and move medially to meet the laterally expanding tongue.

Loss of subcutaneous fat and elasticity of the connective tissue produces the hollow cheeks seen in the aged.<sup>3</sup> The aged appearance affects the patient's self-image, leading to feelings of social rejection and psychosocial pressures and further age- concealment procedures.<sup>4</sup> Appropriate flange extensions can help restore the esthetics and facial appearance by adequately providing support to the cheeks. Cheek Plumpers are one of the methods to improve the facial appearance of such patients and patients with maxillofacial defects or facial paralysis.<sup>4</sup>

Cheek plumper prosthesis can be fabricated either as a single unit or as separate components attached to the denture flange. A conventional cheek plumper is a single-unit prosthesis with an extension ranging from the premolar to molar region that supports the cheeks. Such devices are an integral part of the contour of maxillary denture flanges designed by over contouring the denture flanges in the mediolateral and anteroposterior directions within physiologic limits. However, an extra quantity of denture base resin may increase the weight and bulk of the prosthesis. This makes their insertion challenging and also hampers the retention of maxillary complete dentures. They cannot be used in patients with limited mouth opening as the additional thickness might hinder the insertion and/or removal of the dentures.<sup>5</sup> Another type of cheek plumpers are those that are separate components attached to the denture flange, a detachable plumper prosthesis; where plumper can be detached easily and conveniently from the complete denture separately to overcome the disadvantages of single unit prosthesis.<sup>6</sup>

## **Case Report**

A male patient, aged 65 years old came to Dept of Prosthodontics with the chief complaint of missing teeth and wanted replacement of the same and wanted to improve his extraoral appearance. On extraoral examination wrinkling of skin and flaccidity of facial muscles, resulting in sunken cheeks. (Fig. 1), Intraoral examination revealed completely edentulous maxillary and mandibular arches.



**Figure 1:** Extraoral Examination

As the patients was seeking improvement in the facial appearance, a treatment plan was formulated with a detachable cheek plumper for maxillary and mandibular dentures along with the insertion of conventional complete dentures and. Preliminary impressions were recorded with impression compound and poured-in dental plaster, custom impression trays were fabricated with auto- polymerized acrylic resin. Border molding was performed with low fusing impression compound and Definitive impressions were made with zinc oxide eugenol impression paste. The jaw relation was recorded. (Fig. 2)

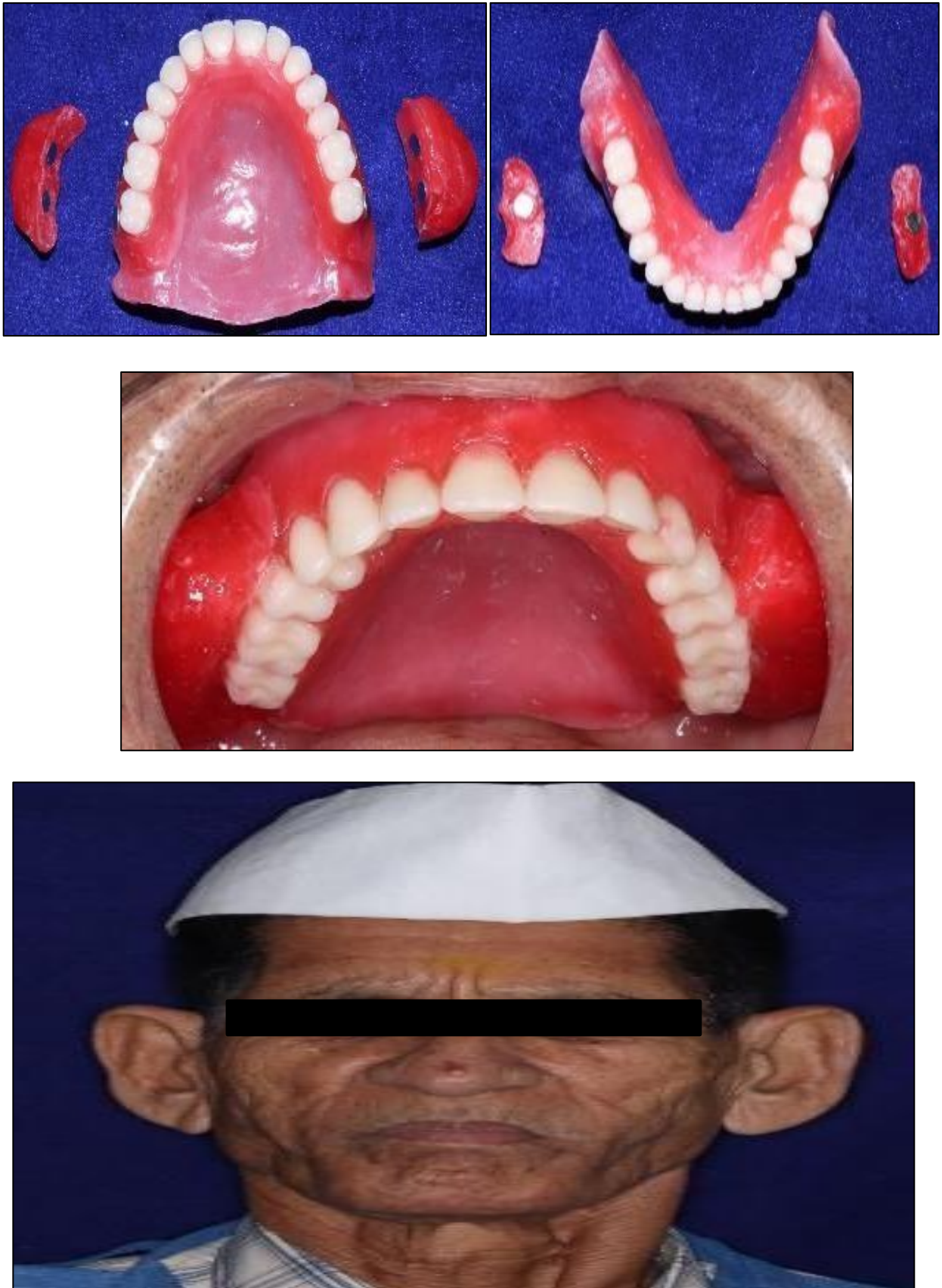


**Figure 2:** Jaw Relation

During the try-in appointment, along with other parameters, denture was also evaluated for esthetics (Fig. 3) The wax patterns for the cheek plumpers were fabricated in modelling wax using a roll of softened modelling wax which was adapted over the buccal flanges of the maxillary denture on either side extending from premolar to molar region. The wax was adapted and inspected extra orally for adequacy of cheek support and contour. Because the definitive wax patterns of the maxillary cheek plumpers did not provide adequate support to the cheek, mandibular cheek plumpers were planned on both sides to ensure adequate fullness of the cheek. Wax patterns for the mandibular cheek plumpers were fabricated by a similar method and modified to ensure that they did not cause any instability of dentures, occlusal interference, or unnecessary tension in the facial muscles (Fig. 4). Magnets were incorporated into the buccal flanges of the maxillary and mandibular dentures on both the sides to aid in retention of detachable cheek plumpers. Two Magnets of 5mm diameter and 2 mm in thickness were used on both the sides for maxillary denture and a single magnet was used on the mandibular denture.



**Figure 3:** Try in Without Cheek Plumpers



**Figure 4:** Try in With the Cheek Plumpers

Once the patient's satisfaction was assured on the extraoral appearance, processing of the dentures and cheek plumpers was carried out. Dentures and cheek plumpers were processed separately using heat-polymerized acrylic resin. Putty was adapted on to the magnets and dentures were flaked. Processing was carried out conventionally. They were trimmed and finished and polished. Dentures were first evaluated without the cheek plumpers. The dentures along with the cheek plumpers were evaluated in the patient's mouth for comfort, function and esthetics. (Fig.5) The patient was given instructions regarding the attachment and detachment of the cheek plumpers.



**Figure 5:** Denture Insertion with Cheek plumpers

## DISCUSSION

Conventional cheek plumpers present major limitations in terms of retention and stability in patients with maxillary dentures because of their increased size and weight. Because of its large size it may also cause muscle fatigue with continuous use.<sup>7</sup> Muscle fatigue can be prevented with the option of removable cheek plumpers and also reduce the discomfort. In case of microstomia Detachable plumper prostheses could facilitate easy insertion and removal of dentures. Various retentive aids could be used for fabricating cheek plumpers like, magnets, stud attachments, dowl pins, friction lock attachments orthodontic elastic modules, and wire-retained cheek plumpers or customized ball attachments.<sup>3,5,8,9,10</sup> Magnets have the advantages of being small in size and has strong attractive forces. Also, it has strong magnetic forces facilitating automatic reseating. Additionally, they are easy to remove and clean.<sup>6,11</sup>

The choice of appropriate attachment depends on the thickness and height of the denture flange and the dexterity of the patient. In the present case report, because of the reduced tonicity of the overlying muscles maxillary cheek plumpers alone failed to provide adequate support to the cheeks. Although the Maxillary cheek plumpers reduced the hollowness of the cheeks, an additional support to the cheek was necessary. Therefore, additional mandibular cheek plumpers were also fabricated, thus reducing the overall hollowness.

## **SUMMARY**

Cheek plumpers provide a simple and straightforward approach to enhance the facial esthetics along with rehabilitating the function in edentulous patients. It also positively enhances the psychological wellbeing of the patients. There are various options available to fabricate a cheek plumper but magnets provide simple and cost-effective treatment modality. Because of their compact size, light weight and strong attractive forces they have been popularly used as an aid for retention of cheek plumpers. Detachable cheek plumpers provide advantages of easy removal and insertion and is more comfortable to the patients.

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