

## Enhancement of Patient Aesthetics Using Detachable Cheek Plumpers in Complete Dentures: Case Series

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**Abstract:** Complete Dentures not only replace missing teeth but also improve facial esthetics. However, disfigurement of face in the form of sunken cheeks is still a common clinical problem in edentulous patients which sometimes can't be improved with the help of dentures only. There are several surgical procedures available to correct this type of disfigurement. This article reports an innovative, simple, effective and non-invasive treatment alternative to improve facial appearance using detachable cheek-plumpers which are attached to the conventional complete denture, using different attachments.

**Keywords:** Detachable cheek-plumper, Hollow cheeks, Sunken cheeks, Cheek lifting appliance, Esthetics

### INTRODUCTION

Esthetics play an important role in a person's professional and social life and cheeks impart greatly to facial aesthetics. Extraction of molars and resorption of supporting alveolar ridge associated with loss of fat and muscular tonicity, tissue thinning due to aging, or weight loss can cause concavities below the malar bone or hollow cheeks or slumped cheeks [1]. Hollow cheeks give a person aged appearance and may be least expected to the patient.

A prosthesis specially designed for the correction of facial disfigurement and for supporting the sunken cheeks intraorally is known as the "Cheek Plumper". They have been used previously in patients affected by Bell's palsy for the purpose of improving esthetics and psychological profile [2, 3]. Use of the plumper prosthesis in maxillofacial prosthodontics is also well documented [4]. The main advantages of cheek plumper are that it is economical, non-invasive and improves aesthetics dramatically.

A conventional cheek plumper prosthesis is a single unit prosthesis with extension near premolar-molar region which support the cheeks. Major flaw of this design is the increased weight of the prosthesis. Also it increases the mesiodistal width of prosthesis which may hinder placement especially in microstomia cases. Detachable plumper prosthesis is thus more beneficial.

### CASE REPORTS

The article gives a report of three cases treated at Govt. Dental College & hospital, Ahmedabad. All three cases had a common esthetic requirement; that is restoration of cheek support in order to correct the sunken-cheek appearance. All three cases are that of completely edentulous patients who have been rehabilitated by means of complete denture prostheses with attached cheek plumpers in order to enhance cheek support. The manner of attachment of the varies in each case. Attachments used are magnets, push-buttons, wires, buccal tube (Fig. 1).



Fig. 1: Different attachments (press-buttons, magnets, buccal tube, wires)

In case of patient 1, complete denture was fabricated in the conventional manner. After the

processed dentures were finished and polished, wax up was done on the buccal flanges to adequately support the cheeks, such that there was no interference with functional movements. These wax cheek plumpers which measured 2 cm× 1 cm× 0.9 cm and 2 cm× 1 cm× 1 cm on the right and left side respectively, were processed in the heat cure acrylic. Magnets were used to attach and retain these plumpers on the buccal flanges of the maxillary complete denture (Fig. 2).



**Fig. 2 : Intraoral view of denture with cheek plumper**

A similar procedure was followed in patient 2, and it was decided to use press button as mode of attachment of cheek plumpers to the maxillary complete denture. One part of the press button was attached on the buccal surface of the denture and the other to the inner surface of the cheek plumper, with self cure resin.

In case of patient 3, the detachable cheek plumpers were attached to maxillary complete denture by means of retained wires. In order to achieve this, a tunnel 0.8 cm in length and 0.3 cm in width was attached on both right and left buccal flanges of the denture.

All the patients were instructed regarding the attachment of the plumpers as well as maintaining the cleanliness and hygiene of the complete denture-plumper complex. Recall appointments were scheduled at 1 day, 1 month and every 6 months.

## DISCUSSION

To correct sunken cheeks to enhance the aesthetics of an individual is one of the many challenges faced by a prosthodontist. Incorporation of a metallic wire with acrylic button attached to the buccal flange of mandible to provide support to the sunken cheeks is considered as one of the better treatment options [2-4]. These days for quick short term results non surgical injectable fillers like botulinam toxin-A BOTOX is been used, but long term suitable results are

still awaited [5]. Surgical correction is also available treatment modality but it leaves behind a post surgical scar [1].

In most of the cases, fabrication of cheek plumper prosthesis is very common but, the procedure described here has definitive assured advantages.

A Conventional cheek plumper is a part of the complete maxillary denture prosthesis (single unit prosthesis) with extensions on either side in the region of the buccal surfaces of the denture and are continuous with the rest of the denture.

### Disadvantages of conventional cheek plumpers [6]

- The conventional cheek plumper could add excessive weight to the upper denture & gravitational forces causes dislodgement of prosthesis.
- The buccal extension could interfere with masseter muscle and the coronoid process of the mandible and hence destabilize the upper denture especially during eating. The extensions could result in muscle fatigue.
- The excessive medio-lateral width of the denture could result in difficulty in inserting the denture and specially in microstomia patients [7].

To overcome the disadvantages of conventional cheek plumper, Detachable cheek plumpers are now in use that have advantages of reduction in weight, easily insertion & removal, prevent muscle fatigue, cleaning and allow patient to wear only denture without cheek plumper . The attachments utilized are: magnets, push-buttons, wires, buccal tube.

### Advantages of magnet retained cheek plumpers [6]

- Small size
- Automatic reseating [8], ease of placement & removal and cleaning.

### Disadvantages of magnet retained cheek plumpers [6]

- Poor corrosion resistance
- Harmful effects of magnetic field on the health of the oral tissues
- Loss of magnetic property over a period of time may requiring frequent replacement[9]

### Advantages of press button retained cheek plumpers

- Small & light weight
- Snug fit
- Inexpensive

### Disadvantages of press button retained cheek plumpers

- Poor corrosion resistance

- Food lodgement

#### Advantages of Wire retained cheek plumpers

- Small & light weight
- Inexpensive
- Easy of insertion & removal

#### Disadvantages of wire retained cheek plumpers

- Marginal gap between denture & prosthesis
- Food lodgement

#### CONCLUSION

This case report describes a method of fabricating cheek plumper attached on a pre-existing denture by different means (magnets & push buttons) for a patient having excessive slumping of the cheeks. This prosthesis provides excellent esthetics and stability during various functional movements & boost the self-esteem of the patient by improving his appearance (Fig. 3).



Fig. 3 : Pre & Post-operative extraoral view

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