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# **Cheek Plumper: A Unique Way to Enhance Facial Aesthetics**

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### **Authors' contributions**

*This work was carried out in collaboration between all authors. Author VMD designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors PJ and ML managed the analyses of the study. Author ML managed the literature searches. All authors read and approved the final manuscript.*

### **Article Information**

DOI: 10.9734/IJRRD/2018/41775

Editor(s):

(1) Roberta Gasparro, Department of Neuroscience, Reproductive Science and Dental Science, University of Naples Federico II, Naples, Italy.

Reviewers:

(1) Lauritano Dorina, University of Milan-Bicocca, Italy.

(2) Kunal Nischal, Rajiv Gandhi University of Health Sciences, India.

Complete Peer review History: <http://www.sciencedomain.org/review-history/25055>

**Case Study**

**Received 21<sup>st</sup> March 2018**

**Accepted 31<sup>st</sup> May 2018**

**Published 8<sup>th</sup> June 2018**

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## **ABSTRACT**

Masseter and buccinators are the major muscles of the cheek & the major function of these muscles is chewing of foods. In younger age, these muscles are supported by teeth. In old age, this support is lost due to loss of teeth & there is a loss of tonicity of the facial musculature leading to the sunken & slumped cheeks & gives the unaesthetic appearance.

Incomplete denture, this unaesthetic appearance is improved by attaching cheek plumper to the distobuccal flange area that gives support to cheek muscles & improves aesthetics.

In literature, they have used magnet & various customized attachments but they have disadvantages. This clinical report describes the press button attachment to attach cheek plumper to denture & it gives support for sunken cheeks.

**Keywords:** *Cheek plumper's; facial aesthetics; sunken cheeks; flaccid muscles; press buttons.*

## 1. CASE HISTORY

38 year old female patient reported to the department of Prosthodontics requesting replacement of missing teeth. After Intraoral examination patient shows completely edentulous upper and lower arches. The patient had lost her teeth over a period of 5 years as they were mobile and was edentulous for past 3 years. Extra-oral examination shows that poor aesthetics, flaccid oral musculature leading to sunken cheeks/ unsupported cheek muscles.



**Fig. 1. Preoperative**

The patient was conscious and more concern about aesthetics. The treatment plan was finalized keeping patients aesthetic demands in mind & it was decided to give patient conventional complete dentures with detachable cheek Plumper's attached to the maxillary denture. Maxillary and mandibular impressions were made using impression compound in stock tray.

Custom trays were made using self-cure acrylic resin. Border moulding was done using soft green tracing sticks (\*DPI PINNACLE Tracing sticks) and wash impressions were made with Zinc oxide eugenol (DPI impression paste). Jaw relations were recorded. Try in was done to check the occlusion & aesthetics of the patient .At the try-in stage, The impression compound is manipulated & placed Extending 2<sup>nd</sup> Premolar to the 2<sup>nd</sup> molar region on both right & left sides. After that muscle treaming was done to adapt the impression compound within the limitations of muscles & checked for puffiness of cheek .The procedure is repeated till the cheeks were supported by impression compound. After that molded impression compound was separated from waxed denture.



**Fig. 2. Moulding of impression compound for cheek plumper**

Flasking & dewaxing procedures are carried out separately for complete denture & for moulded impression compound. After dewaxing space is filled with heat cure acrylic resin (DPI) & curing was carried out. After curing, denture and cheek plumper is retrieved and finishing and polishing was done. Due to poor economic condition magnets were not choice hence press button attachments were used to attach cheek plumper with denture base. Two 2mm deep and 5mm diameter space was created with the help of #8 round burs upon impression surface of processed cheek plumper & on 2<sup>nd</sup> molar region on both sides of denture.

Then male and female parts of press button were attached accordingly with help of self-cure acrylic resin.



**Fig. 3. Processed denture with cheek plumper**

Post insertion instruction instructions were given to the patient. Follow up was done after 24 hrs , 48hrs ,1 week ,1 month , 3months & 6 months for comfort & Aesthetics .Patient was satisfied with the new appearance & well adapted to detachable cheek plumper's.

## 2. DISCUSSION

Poetry and literature for centuries have indicated that the teeth possess beauty of their own and

that they also contribute greatly to facial beauty. The term esthetics was coined in 1970 to designate the science of sensuous knowledge that gave beauty, in contrast to the science of logic that gave truth; the term in later years was related to the fine arts as the theory of beauty. The loss of oral structures primarily affects the appearance of the lower part of the face, but the restoration must be in esthetic accord with the upper part of the face if the harmony of the entire face has to be achieved. The appearance of the entire lower half of the face depends upon the dentures. Also the aesthetics not entirely dependent on selection of teeth size, shape, form contour [1].



**Fig. 4. Post operative**

With the loss of posterior teeth, the cheeks tend to collapse in varying degrees and move medially to meet the laterally expanding tongue. Since cheeks are less mobile and subject to less change, because of the varied nature of their support than the lips, problems of cheek support are generally less critical than those for the lips. In edentulous patients with fat cheeks, loss of teeth may have little effect on the appearance of the cheeks, and the effects of restoration of teeth may not be apparent in these regions that produce sunken Cheeks [2].

Many materials are used as corrosion resistant material like stainless steel, titanium or palladium metal or coating materials like a thin layer of parylene, polytetrafluoroethylene and polymeric materials [3,4,2,5].

An *in vitro* study conducted by Ryf et al. (2008) to assess the effect of neodymium magnets with cardiac pacemakers and implantable cardioverter-defibrillators & he concluded that NdFeB magnets for home and office use might

cause interference with cardiac pacemakers and ICDs at distances up to 24 cm. [6].

Various methods are used to recontour the cheeks that include methods like reconstructive plastic surgery, injecting the botulinum toxin (BOTOX) in the facial muscles and different type of prosthesis [7].

The cheek plumper was placed in the second molar region and hence interference to the normal food flow pattern was very minimal. The patients reported usage of the cheek plumper's even during eating and did not complain of any problem. The detachable cheek plumper had the advantage of being removed and inserted easily, hence, removing and cleaning it after eating was not a problem. Also, cheek plumper's were prepared or moulded with the limitations of muscle movement & finished, polished prevented food accumulation, hence better maintenance.

Various attachments like magnets, push buttons, customized attachments etc. can be used to attach cheek plumper with the denture. Clinical magnets being expensive, push button attachments are cost effective easily attaches cheek plumper to the denture.

### **3. CONCLUSION**

This is a simple & noninvasive method to improve facial aesthetics. This is an alternative method such as Press Buttons attachments were tried to improve the patient's facial appearance. The press button retained cheek plumper prosthesis successfully improves the facial aesthetics and psychological well-being of the patient.

### **CONSENT**

As per international standard or university standard written patient consent has been collected and preserved by the authors.

### **ETHICAL APPROVAL**

As per international standard or university standard written ethical permission has been collected and preserved by the authors.

### **COMPETING INTERESTS**

Authors have declared that no competing interests exist.

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