



Sunken Cheeks Management Using Cheek Plumbers

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Abstract

Prosthodontic rehabilitation not only means to simply replace the missing teeth, but also restore the facial support. This article describes a simplified, low-cost, method for the fabrication of non-detachable cheek plumper for edentulous patients. This prosthesis replaces the missing teeth along with improving facial aesthetics. The sagging cheeks and lips are given support by this. Extreme resorption of the maxillary and mandibular denture bearing areas results in sunken appearance of cheeks, unstable and non-retentive dentures with associated pain and discomfort. Cheek plumper’s can be broadly classified into detachable and non-detachable cheek plumper, each having its own merits as well as demerits. The achievement of well-supported cheeks, sufficient retention, and exceptional stability can be optimized in the complete denture delivered to the

patient through various modifications, leading to a more youthful appearance for the individual.

Keywords: Cheek Plumper’s, Sunken Cheeks

Introduction

Natural dentition plays a vital role in providing support to the facial musculature, which is crucial for structural stability and esthetics of the facial features, including the lips and cheeks. When these elements are disturbed, it becomes difficult to achieve a proper and natural-looking external form of the face¹.

Aging brings a lot of changes in the body, especially the midface area. It is associated with the loss of teeth and supporting alveolar bone². The facial fat and muscle tonicity leads to wrinkling and sagging of cheeks and lips. Cheek plumping prosthesis is considered when a patient is not interested in reconstructive surgery. A cheek plumper supports the cheeks to correct contours

with minimum discomfort to the patient³. This is achieved with the help of cheek plumper, also known as cheek lifting appliance which is basically a prosthesis to support and plump the cheek providing a youthful appearance⁴. This appliance also offers an effective way of intercepting one of the often-overlooked deleterious cheek biting habits⁵. A cheek plumper can be of two types: detachable or undetachable.

Undetachable cheek plumpers are conventional single-unit prostheses with extensions on either side of the polished buccal surfaces of the denture. Detachable cheek plumpers are those which can be detached from the denture. This can be achieved by magnets or customized attachments⁶.

Every type of cheek plumper has its own merits and demerits. Undetachable cheek plumpers are standard prostheses in one piece with adjuncts on both sides of the buccal flanges of the denture, which are polished. Meanwhile, detachable cheek plumper's can be separated from dentures⁷. Detachable cheek plumper over the traditional, non-detachable ones. They are convenient, controllable, and comfortable to attach and remove. They are also simple to clean and avoid the muscle fatigue caused by prolonged use. Magnet retained plumper prosthesis have been used, but they exhibit poor corrosion resistance and loss of magnetic property over a period of time. Magnets cannot be used in patients allergic to metal. The patients need to be appraised regarding the fact that the magnetic field used in MRI tests damages the magnetic assembly⁸. The magnetic assembly should be kept away from high temperatures of more than 150°C⁹. The patients need to remove dentures for MRI tests¹⁰. The use of detachable plumper reduces the weight, allows easy insertion and removal, and is also simple to clean. The patient can also choose to wear the denture without the cheek plumper¹¹.

Case Presentation

A 68-year-old male patient presented to the department of prosthodontics for replacement of missing teeth due to difficulty in eating food. The patient also requested to improve the aesthetics of his sunken cheeks. The patient was presented with all options, including fixed and removable cheek plumper's that were feasible, along with their pros and cons. The patient chooses to proceed with attached cheek plumper's, that would serve the purpose of function and aesthetics.



Figure 1:

For both maxillary and mandibular dentures, preliminary impressions were made using alginate impression material.

After border molding of custom trays using low fusion impression compound, definitive impression is made using zinc oxide eugenol impression paste.

During try-in, additional wax was added in the premolar molar region of the maxillary buccal flange. The amount of wax was adjusted as it provide adequate support to the sunken cheek.



Figure 2:

After investing and dewaxing of dentures, a small amount of silicone putty impression material was placed into the cavity formed by the cheek plumper.



Figure 3:

The denture was processed according to the manufacturer's instruction using heat polymerized acrylic resin.

On retrieval of denture, silicone impression material was removed by creating a small hole with acrylic bur.

The area was then repaired with auto polymerized acrylic resin. The denture was inserted into water and checked for any bubbles to verify for proper repair seal. The denture was delivered to the patient after proper finishing and polishing. The patient was recalled one day, three days, one week, and one month after insertion to check for function, aesthetics, comfort, and phonetics. The patient was very comfortable with the fit and comfort during recall visits and showed no signs of muscle fatigue with time.



Figure 4:

Discussion

Edentulism is a long-term disability that makes it challenging for edentulous individuals to perform daily tasks, including eating, speaking, and interacting with others. The loss of facial muscular support, biting leverage, and decreased masticatory efficiency are all

physical effects of tooth loss¹². Also external appearance influences the confidence and social interactions of individuals. A person with collapsed or depressed cheeks may appear older. It is particularly helpful for patients who have lost their teeth and part of the maxillary bone as a result of a traumatic injury. The prosthesis's flanges can occasionally be sufficient to impart fullness to the lips and cheeks, but this is not always sufficient¹³. The enhancement of facial esthetics by replacing not only missing teeth but also the supporting structures. In an edentulous patient, this can be achieved by correct contours and extensions of denture flange. Sunken cheeks require additional support for lifting the cheek to an adequate level. Corrections of slumping of cheeks can be accomplished by various methods like reconstructive plastic surgery, injecting the botulinum toxin (BOTOX) in the facial muscles and different types of prostheses¹⁴. The plastic surgery option is a traumatic procedure which leaves behind the postsurgical scar, sometimes contraindicated in old patients suffering from systemic diseases. Although these modalities may be effective, they have a variety of disadvantages among them, including cost, time to onset, skin irritation, and allergic skin reactions¹⁵.

Cheek plumper prosthesis can be an amazing solution for such patients. The disadvantages of a conventional CP include greater weight, insertion difficulty, muscular weakness, interference with the masseter and buccinator muscle function, and interference with the coronoid process of the lower arch. It is also not appropriate for those with limited mouth opening¹⁶. Fabrication of hollow cheek

plumper helps in reducing the overall weight of the denture, there are various conventional methods for achieving this.. In the present case report, the need for a buccal pouch was identified during jaw relation. The

wax was added until the necessary esthetics achieved by supporting sunken cheeks. The stability of the record base was checked by the functional movements. Again the retention, stability, and esthetics were verified in the wax try-in procedure. Here we choose to proceed with using rubber-based impression material for fabricating hollow denture.¹⁷

Considering the age, dexterity, and mouth opening of the patient, the complete denture was made as a single piece hollow buccal cheek plumper. To decrease the bulk of the prosthesis, the cheek plumper was made hollow; thereby, retention of the maxillary denture was not compromised. The stability of the complete denture was improved in this technique since the prosthesis was made according to the functional movements of muscles during mastication, speech, and swallowing.

Through recall and review it was confirmed that patient had no discomfort or muscle fatigue on using the complete denture with non-detachable cheek plumper. It also doesn't affect the retention of the denture, as it is light weight and properly countered by moulding the wax while doing try in step to the level it

doesn't affect normal movements or chewing function. The edentulous oral cavity must be restored to as healthy as possible before creating new dentures. Failing to recognize this requirement and incorporating essential procedures in the treatment plan hinders a satisfactory prognosis¹⁸.

Conclusion

The ultimate aim of complete denture treatment should be restoration of the full range of oral functions and esthetics¹⁹. Factors such as loss of subcutaneous fat, buccal pad of fat and elasticity of the connective tissue are the reason of the sunken cheeks that are seen in the aged. To restore physiological muscle length and to eliminate pseudoprognathic appearance, proper and

correct vertical dimension is necessary²⁰. Non-detachable hollow cheek plumper denture was delivered to the edentulous patient correcting the sunken cheeks. The cheek plumper improved facial esthetics and psychological wellbeing of the patient. It helped to improve the patient's quality of life and aesthetic features. Even though there are advantages and disadvantages to both detachable and non-detachable cheek plumpers, at the end of the day it is the patient's choice that is to be considered. Modifications in the treatment procedures should be considered to fulfil the patient's functional and esthetic desires.¹⁷

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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