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COMPLETE DENTURES WITH DETACHABLE CHEEK PLUMPER- A CASE REPORT

Prosthodontics

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ABSTRACT

Aging is associated with loss of teeth, residual ridge resorption and reduced tonicity of the facial muscles, leading to sunken cheeks causing a negative psychological impact on patient's well-being. Slumped cheeks are unaesthetic and add to the person's age. Disfigurement of Patients in patients in need of complete dentures can be improved with the help of cheek plumper to support the cheeks. Literature has well evidenced the extensive usage of magnets as attachments, but it has been shown that magnets lose their magnetic property over a period leading to failure of treatment thus push buttons/press stud fasteners were used in this case, to increase the longevity and durability of the check plumper appliances. This article describes a simple, non invasive technique of fabricating a complete denture with detachable cheek plumper using push buttons, thereby restoring the slumped facial musculature for the purpose of improving aesthetics, function and psychological profile in such patients.

KEYWORDS

Cheek Plumper, Push Buttons, Complete Denture Esthetics

INTRODUCTION:

In today's world esthetics play a very important role in a person's professional and social life. It is important for a prosthodontist to consider the whole face in totality trying to work on dental aesthetics. Cheeks and facial musculature, due to their extreme visibility are important factor in determining facial esthetics. Form of cheeks is determined by the support provided by internal structures—teeth, ridges or dentures. Aging is associated with loss of teeth, resorbed alveolar ridge, reduced muscle tonicity, slumping of the cheeks, which results in their hollowed-out sunken appearance (via concavities below the malar bone of cheeks) and exaggeration of wrinkles because of tissue laxity cheeks are unaesthetic and add to the person's age

While replacing missing teeth, it is important that the prosthesis not only replace the missing teeth but also restore the facial contours. Proper extensions and contours of denture flange can help to achieve this. However in some cases like patients with hollow cheeks, extra support has to be provided. This can be done using cheek plumper or cheek lifting appliances. Cheek plumpers or cheek lifting appliances have been used previously for the purpose of improving aesthetics and psychological profile in patients.[1]

A prosthesis specially designed for the correction of facial disfigurement and for supporting the sunken cheeks intraorally is known as the "Cheek Plumper". The main advantages of cheek plumper are that it is economical, non-invasive and improves aesthetics dramatically.[2]

The present clinical report exemplifies the use of push button attachments to support a detachable cheek plumper prosthesis in a completely edentulous patient with hollow cheeks.

CASE REPORT:

A 65 year old male patient reported to the Department of Prosthodontics, Rajarajeshwari Dental College and Hospital, Bangalore with the chief complaints of missing teeth, difficulty in chewing food and poor aesthetics and with the expectation of improving his facial appearance. History revealed that patient was edentulous since last 2 years and had not worn denture since then. Extra-oral examination revealed that patient had poor aesthetics, unsupported oral musculature; findings of wrinkling of skin and flaccidity of facial muscles were noted, leading to sunken cheeks. One of the major findings on extra oral examination was hollow cheeks **(Figure 1)**. Intra-oral examination revealed that completely edentulous maxillary and mandibular arches, ridges were low well rounded in both maxillary and mandibular arch. Patient was conscious of his sunken cheeks and desired a prosthesis which would make his face look fuller and healthier. Keeping in mind the needs of the patient a proper diagnosis and treatment plan was formulated involving the fabrication of conventional complete dentures for mandibular arch and with intraoral push buttons retained detachable cheek plumpers for maxillary dentures.

Clinical procedure:

Preliminary impressions were made with modeling plastic impression compound (Pinnacle Impression Compound; Dental Products of India) and poured in dental plaster, after which custom impression trays were fabricated with auto polymerized acrylic resin (Trevalon, Dentsplyltd, Gurgaon India). Border molding was done with green stick modeling plastic impression compound (Pinnacle Tracing Sticks; Dental Products of India). Definitive/Final impressions were made with zinc oxide eugenol impression paste (Impression Paste; Dental Products of India) and master casts were poured in Type III dental stone (Kalabhai, Mumbai, India) and the jaw relation was recorded, thereafter tooth arrangement was evaluated.

Wax -Try- in Appointment

Waxed denture were first tried for occlusion and esthetics. Wax patterns for the cheek plumpers were fabricated during the clinical evaluation stage. Cheek plumper made of softened modeling wax were adapted over the buccal flanges of the maxillary denture on either side in the premolar-molar region and were evaluated to give patient a more fuller appearance. Modeling wax was added on the cheek plumpers in incremental manner till the facial esthetics was found to be satisfactory. Border movements were done so that the wax is well adapted and repeated till the cheeks gained required fullness. Cheek plumper while on the waxed denture, were pressed medially for getting the contour of the buccal flange area and indentations of the cervical and middle 3rd of the tooth onto the waxed cheek plumpers for easy identification and adaptation of each side during push button placement stage. The adapted wax was inspected in the medio-lateral and antero-posterior directions and also extra-orally for adequacy of cheek support and contour and modified to ensure that they did not cause occlusal interference, instability of dentures, or unnecessary tensing of facial muscles. The amount of desired cheek support, function and aesthetics was checked during the try in stage(figure 2).

Laboratory procedure

Now, the cheek plumper made of modeling wax were separated from

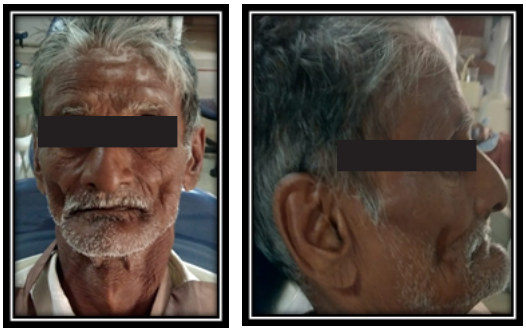
waxed up denture bases. Denture flasking and dewaxing procedures were finished separately for the final denture and cheek plumpers (figure 3).

The resultant mold space was then packed with heat polymerizing acrylic resin and curing procedures were completed . After curing, the cured final prosthesis and plumpers were retrieved. Trimming, finishing, and polishing procedures were performed

Attaching Push buttons to the plumper

A simple stainless steel push button (5 mm in diameter and 2 mm in thickness) was used to attach the plumper to the buccal surface on both sides of a maxillary denture. Provision for the placement of button was made on the buccal surface of the flange of complete denture and the intaglio surface of the plumpers. Two 2mm deep and 5mm diameter holes were made, at two locations, one anteriorly and one posteriorly on either side, on the posterior flange of the denture base and the corresponding area of cheek plumper also. The female part of the push button was attached to the buccal surface of denture base, and male part of push button was attached to the detachable cheek plumper and sealed with the help auto polymerizing resin (Fig. 4,5). This would allow the patient to keep or detach the cheek plumper at his convenience. The prosthesis along with the plumper was then checked in the patient's mouth for comfort, function and esthetics.(Fig.6). During the insertion of the dentures, adequate clearance of the cheek plumpers from the occlusal table was also verified. The patient was given common denture care instructions, including cleaning of the cheek plumper with mild detergent and soft brush along with instructions regarding the attachment and detachment of the cheek plumper.

Recall check-ups were done after 24 hour, 1week, 3 months and 6 months. Within a week, the patient expressed satisfaction in mastication and phonetics and his esthetic dilemma was reduced with the use of detachable push button retained cheek plumper.(figure 7) The plumper did not impose any pressure on the vestibule, there was no muscle fatigue, no corrosion reported and the patient was contented with the retention. The cheek plumper significantly improved the profile and enhanced esthetics, masticatory efficiency and of the patient to his satisfaction.



Frontal view **Lateral view**

Figure 1:pretreatment photograph

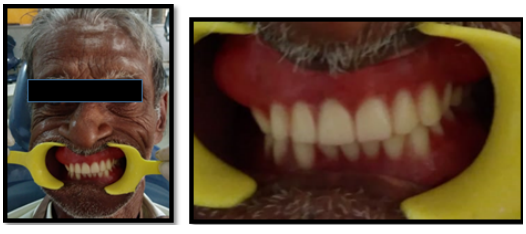


Figure:2 Trial dentures with wax pattern for cheek plumper

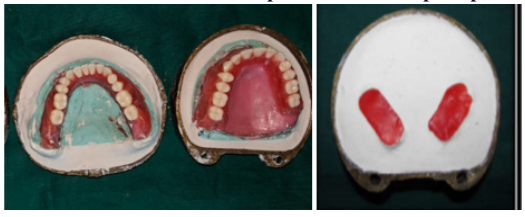


Figure:3: Investment of cheek plumper wax pattern

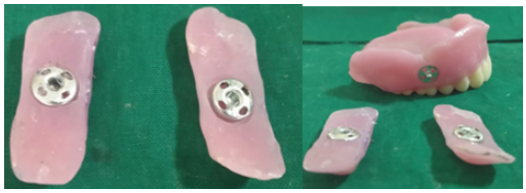


Figure 4: Attachment of push button to maxillary denture

Figure 5: Complete Dentures with detachable cheek plumpers

Figure 6:Intraoral view of dentures with attached cheek plumpers.

Figure 7:Pre-treatment without dentures

Post treatment with cheek plumper Prosthesis

DISCUSSION:

The cheeks are less mobile than the lips and are embraced on three sides by foundations that are subject to little change: the zygoma, the mandible and the parotid gland overlying the masseter muscle in the posterior region. In addition, support is also provided by subcutaneous fat and buccal fat pads which are responsible for the soft, rounded contours of the cheeks in the lower third of the face. Cheek contours are further altered by the loss of anterior teeth and subsequent loss of vertical dimension of occlusion. With the loss of posterior teeth, the cheeks tend to collapse and move medially to meet the laterally expanding tongue . Complete denture prosthesis should help in supporting the slumped tissue. Conventional methods either by increasing thickness of flange of maxillary and mandibular denture such that vestibular fornix is filled with appropriate facial contours or by arranging second row of teeth for esthetic reasons has been reported in the literature[3]

Conventional cheek plumpers present major limitations in terms of retention and stability in patients with maxillary dentures due to their increased size and weight. They could also cause muscle fatigue with continuous use. In the present case detachable plumper prosthesis were planned to reduce weight of the final prosthesis and to allow ease in placement of the prosthesis. Muscle fatigue can be prevented if the patient has the option of removing the cheek plumpers when experiencing discomfort. Detachable plumpers enabled the patient to remove the plumpers and use the denture if required.[4]

Kamakshi et al. used intraoral NdFeB magnets as the mode of attachment. These rare earth magnets with small enough dimensions can be used in dental applications and still provide the necessary force. Deogade also used cobalt –samarium magnets to retain the cheek plumpers with the final prosthesis. Magnets can provide a constant

amount of retentive force even with a number of insertion and removal cycles of prosthesis. However, the long-term durability of the magnets remains a problem[5]

Advantages of using Push Buttons includes, Increase the longevity and durability of the check plumpers , Easy to insert, remove, and clean, so the patient can remove them during oral functions, Small & Light weight,Corrosion not reported in this case even after 6-8 month follow up,Snug fit,Improved esthetics to the desired level, Economical, Non-invasive, simplicity of the clinical and laboratory procedure.[6]

Push buttons were used in this particular case as they are economical, easily available, due to their smaller dimension easy to incorporate them in the denture flange to retain the cheek plumpers,and laboratory procedures not cumbersome

CONCLUSION;

This article has described a simple, effective, corrosion resistant and noninvasive treatment alternative to improve facial appearance in a patient with hollow cheeks. An effort was made to improve patient's appearance by providing better support to the cheeks..

This prosthesis is not only simple in design, easy to fabricate, comfortable for the patient to insert and remove but also renders excellent esthetics (most sought after parameter) and stability during various functional movements.

By giving the patient's cheek plum pers, we can an attempt to restore cheek fullness to the extent that comfort and function would permit and boost the self-esteem of the patient by improving his appearance.

REFERENCES:

1) N. N. Keni, M. A. Aras, V. Chitre: Customised Attachments Retained Cheek Plumper Prosthesis: A Case Report: J Indian Prosthodont Soc ;2012;12(3):198–200.
2) Rupal J. Shah et al.; Enhancement of Patient Aesthetics Using Detachable Cheek Plumpers in Complete Dentures: Case Series; Sch J Med Case Rep 2014; 2(9):615-617.
3) V. Kamakshi,G. V. Anehosur,R. K. Nadiger; Magnet Retained Cheek Plumper to Enhance Denture Esthetics: Case Reports; J Indian Prosthodont Soc; 2013;13(3):378–381.
4) Harpreet et al; Rehabilitating Smiles Using Detachable Cheek Plumper Prosthesis: A Case Report ;Eur J Pharm Med Research; 2017,4(12), 457-461.
5) Soumya et al; A single complete denture with cheek plumpers to improve facial aesthetics; J Dent Resear Scien Develop;2015;2;1
6) Raghavendraswamy, Puri A, Kumar A, et al An Innovative Technique To Enhance Facial Aesthetics Using Detachable Cheek Plumper Appliance: A Case Report,Int J Current Research year- 2018, 10 (04), 68271-68276.