

Cheek Plumper with Metal Casted Attachment: An Esthetic Treatment Option for Patient with Sunken Cheeks – A Case Report

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Case Report

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Abstract: Emphasis on facial esthetics has become an integral part of dental treatment. There are many esthetic consequences of edentulism, among which facial disfigurement due to sunken appearance of cheeks and lips has a greater negative psychological impact on the individual. This clinical report describes an innovative, simple, effective and non-invasive procedure for fabrication of complete denture along with intraoral detachable cheek plumpers using Casted key and keyway to ensure a stable and aesthetic complete denture.

Keywords: Hollow cheeks, Sunken cheeks, Detachable cheek-plumper, Metal casted key and keyway attachment, Cheek lifting appliance, Esthetics.

INTRODUCTION

In current scenario esthetics play a very important role in person's professional and social life and Cheeks are an important part of facial esthetics due to their extreme visibility. The support provided by the teeth, the ridges or the dentures determine the form of the cheeks. Factors like extraction of molars, resorption of supporting alveolar ridge associated with loss of fat and muscular tonicity, tissue thinning due to aging, or weight loss may lead to concavities below the malar bone or hollow cheeks or slumped cheeks [1]. This can make a person appear older and hence have a negative psychological impact on the patient [7].

A prosthodontist plays an important role in restoring the losses in the patient which are mentioned above. Sometime Conventional dentures can fulfil these requirements.

But in some cases, where the patient has sunken cheeks an extra support to the dentures must be provided. This can be achieved by using cheek plumper or cheek lifting appliances.

Cheek plumper is basically prosthesis to enhance the support of sunken cheeks providing better esthetics [8]. 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].

A cheek plumper can be of two types: conventional and detachable [8].

Conventional cheek plumper is single unit prosthesis with extensions on either side in the region of

the polished buccal surfaces of the denture and are continuous with the rest of the denture.

Demerits of such design are:

- Excessive weight which could hamper retention of the maxillary complete denture [5]
- Can destabilize the maxillary denture
- Could interfere with masseter muscle and coronoid process of the mandible [5]
- Can result in muscle fatigue.
- Difficult to insert the denture due to excessive weight.
- Can't be used in patients with limited mouth opening [6]

These flaws can be hindered by using a detachable plumper prosthesis; where plumper can be

detached easily and conveniently from the complete denture. The manner of Attachment used previously -

- Press button
- Magnates
- Ortho wires
- Buccal tube

This clinical report illustrates an innovative attachment technique for plumping the cheeks using detachable cheek-plumpers which are attached to the conventional complete denture, using metal casted key and keyway which is newly designed and casted with Ni-Cr alloy.

CASE REPORT

A 64 years old male patient reported to the department of prosthodontics, Dr. Syamala Reddy Dental College Hospital and Research Centre Bangalore India; requesting replacement of his missing teeth. On intraoral examination, the patient had completely edentulous maxillary and mandibular arches. He had

lost his posterior teeth over a period of 7 years because of periodontal problems and was completely edentulous for the past 2 years.

On clinical examination, one of the major finding was poor esthetics, unsupported oral musculature, sunken and slumped cheeks (Fig-1). On intra oral examination, the ridge was high well rounded in maxillary arch and mandibular ridge is low rounded with sufficient inter arch space with average mouth opening (Fig-2). Blackish pigmentations are seen on both side of buccal mucosa. The general health status of the patient was satisfactory without history of any systemic disorders. Patient has a habit of smoking 8-10 times a day since last 24 years. Therefore, new complete denture was planned with cheek plumpers to provide the adequate support on both side of the cheeks to lift the sunken cheeks to enhance facial esthetics and appearance. Patient was informed regarding treatment plan and procedure, patient was agree for further procedure.



Fig-1: Preoperative with shunken cheeks



Fig-2: Maxillary and mandibular ridge

CLINICAL PROCEDURE

Conventional complete denture procedure was followed from Preliminary impressions to try in procedure. In the try-in appointment the upper and lower waxed dentures were tried first for occlusion,

appearance and phonetics. Wax was then added in the premolar and molar region on the buccal side of the upper denture to restore the facial contour and give the patient an esthetic, fuller and symmetrical appearance.

The denture was further evaluated for retention and stability.

Wax pattern for the keyway is fabricated with inlay wax along with wings (Fig-3). These wings are helpful to retain the keyway in final acrylized denture.

Wax pattern of keyway is Casted using nickel chromium alloy and after finishing and polishing placed back into trial denture. After final waxup and carving denture is acrylized in normal way along with keyway (Fig-4).



Fig-3: Wax pattern for keyway on trial denture



Fig-4: Maxillary finished denture along with metal casted keyway

Laboratory remounting and final finishing polishing was done and denture was checked in patient's mouth and adjusted. Now wax pattern for key is fabricated on final denture with inlay wax (Fig-5).

Key was casted using nickel chromium alloy after final trimming and polishing key is tried in keyway for proper fitting and ease of placement and removal (Fig-6).



Fig-5: Wax pattern for key



Fig-6: Trial and adjustment for casted key

Cheek plumper with the key was adjusted according to the desired cheek fullness. Impression of intaglio surface of the wax cheek plumper and outer surface of polished denture was taken with light body impression material to make proper adaptation of cheek plumpers to maxillary denture. The Cheek plumpers along with keys were acrylized with high strength heat cure resin (Fig-7). Final finished polished denture and the cheek plumper (Fig-8) were inserted and any

adjustments required were done by slightly re-contouring the cheek plumper along with refinishing and polishing. The patient was given routine post-insertion instructions and was motivated to make efforts to learn to adapt to the new dentures and the cheek plumper. Within three weeks, the patient expressed satisfaction in mastication and phonetics and his esthetic dilemma was reduced with use of detachable cheek plumper (Fig-11).



Fig-7: Flashing of cheek plumper along with key



Fig-8: Maxillary denture along with cheek plumpers



Fig-9: Tapered vertical slot for easy placement and removal



Fig-10: Design for mechanical underlock of key



Fig-11: Postoperative view, sunken cheek recovered

DISCUSSION

Cheek plumper is used since long time for youth full appearance of patients in case of sunken cheek. The manner of Attachment used previously are-

Press button
Magnates
Ortho wires
Buccal tube

Press button is corrosive in nature and distort or break in short duration of use. Disadvantages of magnet retained cheek plumpers is poor corrosion resistance, alleged harmful effects of magnetic field on the health of the oral tissues, loss of magnetic property over a period of time and hence requiring frequent replacement [7]. Ortho wires and Buccal tubes difficult to use for patients and easily break or distort.

No one gave satisfactory result. To overcome all these problem casted key and keyway is chosen and designed for this case.

DESIGN

Tapered vertical slot for easy placement and removal: - slot is wider towards border of denture and narrower towards teeth; which are helpful for easy placement and removal of plumper (Fig-9).

Mechanical retention for plumper into their place: - key and keyway is wider towards denture surface and narrower towards plumper which provide mechanical interlock between denture and plumper and prevent buccal displacement of plumper (Fig-10).

Advantages of this attachment:-

- No distortion or breakage of attachment
- No need to replace repeatedly
- Easy to fabricate

- Small and comfortable
- Easy to place and remove the plumper
- No corrosion
- Maintenance of the appliance becomes easier.
- Economic

CONCLUSION

The dentist's ability to understand and recognize the problems of edentulous patients, to select the proper course of required treatment and reassure them has proven to be greatest clinical value. This case report describes a new prosthetic aid that not only provides esthetics but also improves the psychological profile of the patient. Casted key and keyway attachment for cheek plumper is advantageous due to its small compact size and long term durability which is main problem with other attachment system. Design is so simple that patient can easily replace and remove the plumper and can maintain the hygiene very easily.

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