ORIGINAL RESEARCH PAPER

Volume-8 | Issue-4 | April-2019 | PRINT ISSN No 2277 - 8179

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

ENHANCEMENT OF FACIAL ESTHETICS USING DETACHABLE CHEEK PLUMPERS IN COMPLETE DENTURE : A CASE REPORT

Dental Science

Dr. Amrita Singh 3rd year Postgraduate,Department Of Prosthodontics, Crown And Bridge, AMC dental college and hospital

Dr. Ina Patel* Professor and Head, Department Of Prosthodontics, Crown And Bridge, AMC dental college and hospital *Corresponding Author

Dr. Chandni Patel 3rd year Postgraduate,Department Of Prosthodontics, Crown And Bridge, AMC dental college and hospital

Dr. Hetvi Patel 3rd year Postgraduate,Department Of Prosthodontics, Crown And Bridge, AMC dental college and hospital

ABSTRACT

The edentulous state is associated with loss of teeth, resorbed alveolar ridge, reduced muscle tonicity, and hollow cheeks. Form of cheeks is determined by the support provided by internal structures—teeth, ridges or dentures. However, in individuals with marked resorption of the alveolar process, conventional dentures fail to provide adequate support. Thus, requiring additional support for the cheeks. Emphasis on facial esthetics has become an integral part of dental treatment. Prosthetic rehabilitation of a completely edentulous patient no longer confines to only replacement of missing teeth. Patients are increasingly demanding improvement in esthetics at the end of treatment. This can be done using cheek plumper or cheek lifting appliances. So, the present clinical report exemplifies the use of customised attachments to support a detachable cheek plumper prosthesis in a completely edentulous patient with hollow cheeks.

KEYWORDS

Cheek plumper, Hollow cheeks, Customised attachments, Detachable attachments.

I. INTRODUCTION

Facial esthetics plays an important role in a person's professional and social life.[1]The appearance of the lower half of the face is determined by the contour of the jaw bones, underlying teeth and the soft tissues and muscles surrounding the teeth. The edentulous state is associated with loss of teeth, resorbed alveolar ridge, reduced muscle tonicity and hollow cheeks.[2]Cheeks due to their extreme visibility are an important factor in determining facial esthetics. Form of cheeks is determined by the support provided by internal structures—teeth, ridges or dentures. Extraction of molars, tissue thinning due to aging, or weight loss can cause concavities below the malar bone or hollow cheeks. Slumped or hollow cheeks can add years to a person's age and hence have a detrimental psychological effect on the patient.[1]

Complete denture treatment includes not only the replacement of missing teeth but also the restoration of facial appearance. Conventional complete dentures with appropriate flange extensions and well positioned teeth adequately support the overlying lips and cheeks. However, in individuals with marked resorption of the alveolar process, conventional dentures fail to provide adequate support, necessitating additional support for the cheeks.[2] 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. Use of plumper prosthesis in maxillofacial prosthodontics is also well documented.[3,5]

A conventional cheek plumper prosthesis is 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. The main advantages of cheek plumper are that it is economical, non-invasive & improves aesthetics dramatically.[6,11,12]

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

II. CASE REPORT

A 56 year old male patient reported to AMC dental college and hospital, Ahmedabad (Gujarat) with chief complaint of difficulty in chewing due to missing teeth and non pleasing facial appearance due to slumping cheeks. On examination patient had completely edentulous upper and lower arches. Patient had lost his teeth over a period of 3 years as they were mobile and was edentulous for past 6 months. One of the major findings on extra oral examination was hollow and sunken cheeks (Figure 1). Patient was conscious of them and desired a prosthesis which would make his face look fuller and healthier. Treatment plan was formulated, keeping patient's demand in mind. It was decided to give patient upper and lower complete dentures with detachable cheek plumpers for the maxillary denture.

Fig.1: Front profile showing sunken cheeks

III. STEPS IN FABRICATION OF DENTURE AND DETACHABLE ATTACHMENTS

1) Conventional primary impression procedures were performed using impression compound for maxillary and arch and admix technique (combination of impression compound and green stick) for mandibular arch (Figure2). Final impressions were recorded for same using zinc oxide eugenol paste. (Figure 3). 2) Jaw Relation was recorded (Figure 4). 3) Teeth setting was done (Figure 5). After the trial dentures were inspected intraorally, one part of the press button was attached on the buccal surface of the denture in the premolar, molar region and the other to the inner surface of the cheek plumper (Figure 6,7,8). Light body was applied on polished surface of the cheek plumper for proper adaptation during functional movements (Figure 9,10,11,12). During the insertion of the dentures, adequate clearance of the cheek plumpers from the occlusal table was verified.

3) The dentures and cheek plumpers were fabricated separately using heat-polymerized acrylic resin. 4) Wax pattern of plumper was invested and acrylised (Figure 13,14,15). Packing was done using heat cure acrylic, the cheek plumpers are made hollow using hard wax to make the hollow cavity (Figure 16,17).

7) Final insertion was done (Figure 20,21,22). Patient was given instructions regarding the attachment and detachment of the cheek plumpers (Figure 18,19) and asked to present for regular follow-up evaluations

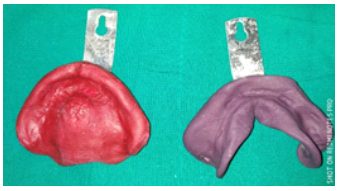

Fig. 2: Preliminary Impressions

Fig. 3: Final Impressions

Fig. 4: Maxillomandibular Jaw Relation

Fig. 5: Final Try In

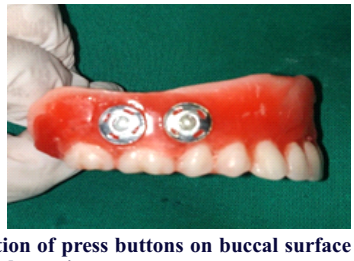

Fig.6: Insertion of press buttons on buccal surface of denture at premolar-molar region

Fig.7: Other component of press buttons on cheek plumper

Fig. 8: Maxillary denture with attached cheek plumper

Fig. 9: Light body applied on polished surface for recording functional movements

Fig. 10: Light body on cheek plumper after recording functional movements

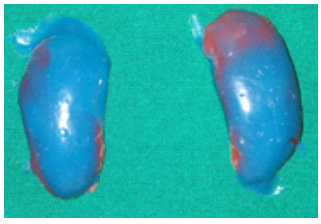

Fig.11: Individual cheek plumpers with light body

Fig. 12: cheek plumpers attached on denture[front view]

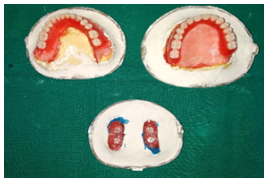

Fig. 13: Flasking of denture and cheek plumpers

Fig.14: Dewaxing of denture

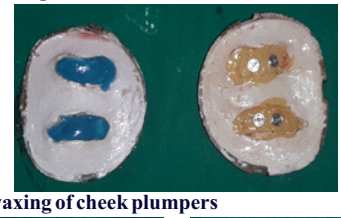

Fig. 15: Dewaxing of cheek plumpers

Fig.16: Packing done with hard wax to make cheek plumpers hollow

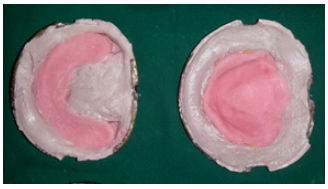

Fig.17: Packing of dentures with heat cure acrylic resin

Fig. 18: Final dentures with detachable cheek plumpers

Fig. 19: Front view of dentures

Fig. 20: Intraoral front view of dentures with cheek plumper

Fig. 21: Without denture [hollow cheeks]

Fig. 22: With denture and cheek plumpers

IV. DISCUSSION

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 add excessive weight to the upper denture & gravitational forces causes dislodgement of prosthesis. They could also cause muscle fatigue with continuous use[7]. 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.[6,12]

To overcome the disadvantages of conventional cheek plumper, detachable cheek plumpers are now in use. Advantages of press button retained cheek plumpers include Small & light weight Snug fit, inexpensive, easy insertion removal and prevent muscle fatigue. Proper cleaning can be done allows patient to wear only denture without cheek plumper.[12]

Previous studies have discussed the use of press stud fasteners[7,11] and magnets.[7-10] Magnets have the benefit of being small, facilitating automatic reseating because of their magnetic forces, and being easy to remove and clean.[13] Few authors have used stud attachments, orthodontic elastic modules, and wire-retained cheek plumpers.[7] Clinicians can choose the appropriate attachment according to the thickness and height of the denture flange and the dexterity of the patient.

However, cheek plumpers have a few drawbacks, including the accumulation of food, patient discomfort resulting from the additional weight and bulk of the dentures, the requirement of manual dexterity of patients to ensure accurate attachment and the susceptibility of magnetic attachments to corrosion and loss of magnetism and of the press stud fasteners to breakage.[7,8,13] Therefore, periodic patient recall is necessary to assess and when required, replace the attachments.

V. SUMMARY

Cheek plumpers are straightforward to fabricate and provide a noninvasive and cost-effective treatment option for the improvement of facial appearance in patients with sunken cheeks. This treatment helps improve esthetics and the psychological well-being of patients. Detachable cheek plumpers provide increased patient comfort, leading to greater patient acceptance of the prosthesis. In situations where the desired cheek muscle draping cannot be achieved in patients with sunken cheeks, mandibular cheek plumpers can be successfully inserted in addition to maxillary cheek plumpers in order to improve the overall facial appearance.

VI. REFERENCES

1. Bains JW, Elia JP. The role of facial skeletal augmentation and dental restoration in facial rejuvenation. Aesthet Plast Surg, 1994; 18: 243-6.
2. Nikita MV, Jayant NP, Jyoti W, Nikhil J. Detachable cheek plumpers with different attachments for improving esthetics in a conventional complete denture: A clinical report. J Prosthet Dent, 2017; 117(5): 592-96.
3. Lazzari JB. Intraoral splint for support of lips in Bellspalsy. J Prosthet Dent, 1995; 5(4): 579–581.
4. Larzen SJ, Cartern JF, Abrahamian HA. Prosthetic support for unilateral facial paralysis. J Prosthet Dent, 1976; 35(2): 192–201.
5. Hitoshi M, Chiaki K, Takashi O, Hisashi T. Lip plumper prosthesis for a patient with a marginal mandibulectomy: A clinical report. J Prosthet Dent, 2004; 92(1): 23–26.
6. Rupal JS, Anandmayee TC, Hardik GP, Farheen GM, Bhavyata JD, Preeti AK. Enhancement of patient aesthetics using detachable cheek plumpers incomplete dentures: Case series .Sch J Med Case Rep., 2014; 2(9): 615-617.
7. Punia V, Mishra R, Khandelwal M, Verma N, Handa M. Magnet retained detachable cheek plumper: innovation personified-A case report. Int J Prosthet Dent, 2013; 4: 16-20.
8. Kamakshi V, Anehosur GV, Nadiger RK. Magnet retained cheek plumper toenhance denture esthetics: case reports. J Indian Prosthodon tSoc, 2013; 13: 378-81.
9. Deogade SC. Magnet retained cheek plumper in complete denture esthetics: A case report. J Dent (Tehran), 2014; 11: 100-5.
10. Riley MA, Walmsley AD, Harris IR. Magnets in prosthetic dentistry. J Prosthet Dent, 2001; 86: 137-42.
11. Keni NN, Aras MA, Chitre V. Customised attachments retained cheek plumper prosthesis: a case report. J Indian Prosthodont Soc., 2012; 12: 198-200.
12. Harpreet Singh Saini, Shashikala Jain, Sandeep Kumar, Rajnish Aggarwal, Sunita Choudhary, Shikha Josh. Rehabilitating smiles using detachable cheek plumper prosthesis: a case report. European Journal of Pharmaceutical and Medical Research, 2017,4(12), 457-461.
13. Nandita N. Keni , Meena A. Aras , Vidya Chitre. Customised Attachments Retained Cheek Plumper Prosthesis: A Case Report. J Indian Prosthodont Soc (July-Sept 2012) 12(3):198–200