

Complete Denture with Magnet Retained Detachable Cheek Plumper To Enhance Facial Esthetics: A Case Report

¹Dr. Khyati Gosai, ²Dr. Ina Patel, ³Dr. Ravindra Chavda,
⁴Dr. Ariba Azmi, ⁵Dr. Rashmi Jaggad, ⁶Dr. Pooja Poonia

¹Postgraduate student, Department of Prosthodontics and Crown & Bridge, AMC dental college and hospital, Ahmedabad.

²Professor and Head of Department, Department of Prosthodontics and Crown & Bridge, AMC dental college and hospital, Ahmedabad

³Reader, Department of Prosthodontics and Crown & Bridge, AMC dental college and hospital, Ahmedabad

⁴Postgraduate student, Department of Prosthodontics and Crown & Bridge, AMC dental college and hospital, Ahmedabad

⁵Postgraduate student, Department of Prosthodontics and Crown & Bridge, AMC dental college and hospital, Ahmedabad

⁶Postgraduate student, Department of Prosthodontics and Crown & Bridge, AMC dental college and hospital, Ahmedabad


Correspondence Email address: khyati05_gosai@yahoo.com

Abstract:

Introduction: Edentulous patients demands improved function and aesthetics at the end of the treatment. Sunken cheek appearance is commonly seen in patients in whom adequate support cannot be obtained by complete denture prosthesis.

Case Report: Cheek plumper is prosthesis used to support cheeks in premolar and molar region. It can be attached to complete denture or detachable. This article describes the fabrication of magnet retained detachable cheek plumper for complete denture patient.

Conclusion: This article describes a simple and cost-effective method for fabrication of complete denture with detachable cheek plumper used in completely edentulous patient

Access this Article Online	Quick Response Code: 
Website: http://heb-nic.in/jopd	
Received on 05/02/2020	
Accepted on 18/03/2020 © HEB All rights reserved	

Introduction:

Loss of teeth generally leads to impairment of masticatory function and facial disfigurement. Facial disfigurement limits the abilities of social interaction and decreases one's self confidence. This leads to psychological impact on the individual [1]. Along with ageing and loss of teeth there is an alteration in facial features like deepening of nasolabial fold, sunken cheeks, drooping of angle of mouth. Rehabilitating edentulous patients with dentures may result in increased confidence and social interactions due to positive esthetic changes [2]. However sometimes the denture flanges do not give adequately support to the facial muscles. In order to deal with the slumped tissue, extra support might be required [3]. This is achieved with the help of a cheek plumper, also known as cheek lifting appliance which is basically a prosthesis to support and plump the cheek providing a youthful and esthetic appearance [1].

Conventional method of fabrication of denture may add excessive weight and volume to final prosthesis, leading to decrease in patient compliance. It can be overcome by fabricating detachable cheek plumper prosthesis.

This clinical report highlights a technique to provide support for sunken cheeks using detachable acrylic cheek plumpers, retained using iron-neodymium close-field magnets. The use of these magnets is a modification from the conventional technique of supporting the slumped tissues.

Case report:

A 58 year old male patient with no history of medical illness, conscious of his appearance reported to the department of prosthodontics and crown and bridge with the chief complaint of missing teeth and sagging cheeks leading to unaesthetic appearance. Patient desired dentures not only for functional purpose but also to enhance his appearance. He has been edentulous since 2 years. On extraoral examination, revealed sunken cheeks due to loss of teeth and muscle tonicity. Temporomandibular joint examination showed no abnormalities except clicking while mouth opening. Intraoral examination showed well-formed maxillary and mandibular alveolar ridge with no abnormalities. All frenum attachments were normal. Patient could not perform all mandibular movements correctly due to poor neuromuscular co-ordination.

Treatment plan: Considering extraoral and intraoral examination, all possible treatment modalities were explained to patient, and he agreed to proceed with conventional removable maxillary and mandibular dentures with detachable cheek plumpers retained with magnets.



Edentulous maxillary ridge
Figure 1



Edentulous mandibular Ridge
Figure 2



Frontalview
figure3



Lateralview
figure 4

Procedure:

Primary impression was made using impression compound(Y- Dents impression compound) (figure 5). Border moulding was done with low fusing compound (DPI Pinnacle tracing sticks) and impressions was made by selective pressure technique using zinc oxide eugenol impression paste (DPI Impression paste) (figure 6 and 7). Jaw relation was recorded (figure 8). Teeth arrangement was done and final tryin was done (figure 9). Organic occlusion scheme was given. Balanced occlusion was not given due to poor neuromuscular co-ordination of patient which limited mandibular movements. During tryin stage fullness was verified first by placing cotton rolls instead of wax bolus and change in appearance of patient was observed (figure 10). Fullness was checked first by placing cotton rolls in maxillary buccal vestibule. It was observed that fullness was not sufficient by giving only cheek plumpers in the maxillary arch vestibule. Thus cotton rolls were then placed in mandibular buccal right and left vestibule. This sufficiently provided fullness. Magnets were then attached in the upper and lower denture in wax (figure 11 and 12). Wax bolus was prepared upto a size that sufficiently provided fullness to cheeks and then magnets were attached to it (figure 13, 14 and 15). External tissue surface of bolus was recorded by using PVS light body material (speedex C silicone light body) (figure 16). Denture was converted in conventional manner after removal of magnets (figure 17, 18). Detachable plumpers were made hollow using lost wax technique to reduce weight for overall prosthesis (figure 19). Magnets were attached to finished and polished maxillary-mandibular dentures and detachable plumpers in the end using cold cure acrylic resin (figure 20,21,22). Denture insertion was done (figure 23, 24, 25). Post insertion frontal and lateral photographs of the patient was taken and it showed esthetic improvement when compared to preprosthetic photographs (figure 26, 27)



Figure 5
(Primary impression)



figure 6
(Maxillary final impression)



figure 7
(Mandibular final impression)



Figure 8
(jaw relation)



figure 9
(final try in)



figure 10
(cotton roll try in)



Figure 11

(magnets attached to maxillary & mandibular final try in denture)



figure 12



figure 13

(magnets attached to cheek plumper)



Figure 14

(maxillary final try in denture)



figure 15

(mandibular final try in denture)



figure 16

(external tissue surface)



Figure 17

(processed denture without magnets)



figure 18

(processing of hollow cheek plumpers)



figure 19



Figure 20

(final prosthesis with magnets)



figure 21

(final prosthesis)



figure 22

(final prosthesis)



Figure 23

(denture insertion)



figure 24

(denture insertion)



figure 25

(denture insertion)



figure 26



figure 27

(after insertion of prosthesis- frontal view and lateral view)

Discussion:

The cheeks are surrounded on three sides by: the zygoma, the mandible and the parotid gland overlying the masseter muscle in the posterior region. These structures are less amenable to undergo changes. Also, support is provided by subcutaneous fat and buccal fat pads. Loss of teeth leads to collapse of cheeks [4]. This leads to unaesthetic sunken cheek appearance. If the loss of tissue is less then flanges of denture will provide adequate support. But in cases of severe deformities conventional denture cannot be used. This is because it may cause muscle fatigue, make the denture unstable, difficulty in insertion and removal⁵. Thus detachable cheek plumpers are good alternative as it improves patient comfort. Different attachment systems are used for detachable cheek plumpers which includes press buttons, magnets and customized attachments^{6,7}. Magnets are available as stereo magnets and NdFeB magnets. Stereo magnets have more tendency for corrosion and are more loss of magnetic properties is also noted⁸. NdFeB magnets are rare earth magnets. They are available in small dimension and yet providing efficient magnetic field. Also they are cost effective when compared to stereo magnets⁹.

The advantages of magnet retained cheek plumper over other known techniques are, it allows ease of placement and automatic reseating due to powerful magnetic force; magnets of smaller dimension can be easily placed in the denture flange. It can also be used in case of restricted mouth opening. During situations when does not want to wear the detachable plumpers, in such conditions magnets are not protruding from the denture surface. Thus it does not cause any discomfort to the buccal mucosa. This magnets are easily available and can be replaced easily whenever required.

Conclusion:

Loss of teeth and surrounding soft tissue structures is seen with ageing. With increasing age, treatment modalities become increasingly challenging. Proper esthetics can only be achieved by providing support to the slumped tissues. Magnet retained detachable cheek plumpers improves patient compliance and are cost effective. Improved esthetics have psychological benefit on such patients.

Referances:

1. Verma N, Chitre V, Aras M. Enhancing appearance in complete dentures using magnetic retained cheek plumpers. *J Indian ProsthodontSoc*(2004) 4(2):35–38
2. Zwetchkenbaum SR, Shay K. Prosthodontic considerations for the older patient. *Dent Clin N Am*(1997)41(4):817–846
3. Fernandes A, Correia M, Pinto N. Prosthesis for cheek support—a case report. *J Indian ProsthodontSoc*(2002) 2(4):19–20
4. Martone AL. Effects of complete dentures on facial esthetics. *J Prosthet Dent* (1964) 14(2):231–255
5. Sunil Kumar MV, Rao H, Sohi KS. Artificial cheek plumpers: a step ahead in denture aesthetics-a case report. *Indian J Stomatol*2011;2:134-137.
6. 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;4:1620.
7. Virdiya NM, Palaskar JN, Wankhede J, Joshi S. Detachable cheek plumpers with different attachments for improving esthetics in a conventional complete denture: A clinical report. *J Pros Dent* 2017;117:592-6
8. Kumar SMV, Rao H, Sohi KS. Artificial cheek plumper's: a step ahead in denture esthetics—a case report. *Indian J Stomatol*(2011) 2(2):134–137
9. Riley MA, Walmsley AD, Harris IR. Magnets in prosthetic dentistry. *J ProsthetDent*(2001) 86:137–142