Magnet Retained Cheek Plumper to Enhance Denture Esthetics: A Case Report

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Abstract

Due to the impairment of masticatory function and facial deformity caused by tooth loss, patients may experience a significant handicap that has a negative psychological impact. Excellent denture aesthetics can be attained by giving the drooping tissues additional support in addition to the standard procedures of arranging the teeth to obtain lip support. This clinical report demonstrates a method for supporting sunken cheeks with removable acrylic cheek plumper's that are held in place by cobalt-neodymium close-field magnets. These magnets are a variation to the standard method for maintaining slumping tissues.

Keywords: Hollow cheeks, magnets, esthetics

Introduction

Today, aesthetics are crucial and plays important role globally to one's social and professional life. Due to their high degree of visibility, cheeks play a significant role in determining facial aesthetics. The support supplied by internal elements like teeth, ridges, or dentures determines the shape of the cheeks. Concavities beneath the malar bone or hollow cheeks might result from molar extraction, aging-related tissue weakening, or weight reduction can be seen.[1] Slumped or sunken cheeks can make a person look older than they are, which is bad for the patient's mental health.[2]

Dermal fillers can be used to quickly restore height, shape, and fullness to the cheek area through malar or cheek augmentation. Older individuals do not view this as a therapy option because it is an invasive approach. Also due to the higher cost of the derma fillers patients do not opt for this treatment. A removable complete denture is the most common treatment modality to replace an edentulous maxilla or mandible. However, in most cases, the denture flanges do not give adequate support to the facial muscles. This can be achieved by using cheek plumper or cheek lifting appliances which enhance the support of sunken cheeks to provide better esthetics. [3, 4]

Conventional cheek plumper is single unit prosthesis with an extension near the premolar to molar region. Such prosthesis is an essential component of the shape of denture flanges. However, conventional cheek plumper's added weight and size that make insertion difficult and negatively impact complete dentures retention. Additionally, they cannot be applied to people who have a small mouth opening. The use of detachable cheek plumper's has been recommended as a solution to these issues. They provide more benefits in terms of use, including simple retrieval when the patient wants it. Different types of attachments for its use with cheek plumper's have been reported such as magnet, push-button, buccal tube, and springs. [5]

This clinical report illustrates the use of magnets to retain a detachable cheek plumper prosthesis in a completely edentulous patient with hollow cheeks..

Case Report

A 56 year old male patient reported to Department of Prosthodontics, crown & bridge in Rama dental college and hospital, Kanpur requesting for replacement of missing teeth. While examination, the patient's upper and lower teeth's were completely missing. The patient had been edentulous for the previous two years and had lost his teeth over a threeyear period because they were mobile. Hollow cheeks were one of the main discoveries during the extra oral examination (Figure 1). Patient wanted a prosthesis that would make his face look larger and healthier because he was aware of them as he was living a socially secluded life. He was dealing with psychological strain due to his appearance. The patient's needs were taken into consideration when creating the treatment plan. The patient would receive full dentures for their maxilla and mandible,

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with intraoral closed-faced magnet-retained cheek plumper's for the maxilla.

Maxillary and mandibular impressions were made using impression compound. Custom trays were made using auto polymerizing acrylic resin. Border molding was done using low fusing impression compound (DPI Pinacle tracing sticks) and wash impressions were made with medium body addition silicone impression material (Aquasil, Dentsply/ caulk). Jaw relations were recorded. Waxed dentures were initially tested for occlusion and aesthetics during the try-in visit (Figure 2). The maxillary denture was then attached, and wax cheek plumpers were examined to give the patient a fuller appearance. It was possible to detach the waxed plumper from the waxed-up denture. Following that, the final prosthesis and cheek plumper's underwent independent flasking and dewaxing treatments. Heatpolymerizing acrylic material (DPI, Mumbai, India) was packed into the mould cavity, and curing processes were carried out in accordance with the manufacturer's instructions. The cured final prosthesis and plumper's were retrived after deflasking. Trimming, finishing, and polishing procedures were performed. Then a pair of commercially available magnets (cobalt-neodymium, Ambika Corporation, New Delhi, India), 3 mm in diameter and 2 mm in thickness was employed to retain the cheek plumper with final prosthesis (Figure 3). With the aid of auto polymerizing resin, provisions for the implantation of magnets in the cheek plumper and the final prosthesis' flange were made. A pressure pot was used to achieve complete polymerization before finishing and polishing were performed. Outside of the patient's mouth, the plumper's connection to the prosthesis was initially examined (Figure 4 &5). The prosthesis and plumper were then evaluated for comfort, use, and aesthetics inside the patient's mouth (Figure 6 &7).

The patient received instruction on how to attach the plumper to the prosthesis. The patient's requests were fulfilled. He was called for a routine checkup to assess any pain or denture slackness. Appointments for recall were scheduled after 1 day, 1 month and every 6 months

Discussion

Conventional cheek plumpers are single-unit devices that include extensions on either side of the denture base's posterior flange. Continuous use could cause muscle fatigue and reduced prosthesis retention. If the patient has the choice to take the cheek plumpers out while in pain, muscle fatigue can be avoided. When necessary, the patient could take out the detachable plumpers and use the denture.[7] Due of their strong attraction forces and small, compact size, magnets are utilised. Some of the advantages include easy cleaning, easy placement for both the dentist and the patient, automatic reseating, simplicity of the clinical and laboratory procedures, and constant retentive force with the consecutive number of insertion-removal cycles. [8, 9]

This means 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. Also, magnets provide snug fit between the denture base and cheek plumper. [10, 11]

The cobalt-neodymium magnet used in this case provided an essential retention and was cost effective for the patient.[12] The patient was informed about the procedure and the materials used, and informed consent was procured. The patient also accepted the need for frequent review calls after insertion of the prostheses.

Conclusion

The patient's aesthetics, psychological health, and cheek contour were successfully restored by the magnet-retained cheek plumper prosthesis. Due to its tiny, compact size and powerful attraction forces, magnetic retention for hollow cheek patients is favorable; however, over a period of time the magnets used intraoral require replacement due to lack of long-term durability in oral conditions.

As we have used such intraoral magnets, the patient was informed about the limitations, and he was instructed to report to the clinic once every 6 months to replace the magnets if required.

References

- 1. Bhushan P, Aras MA, Coutinho I, Rajagopal P, Mysore AR, Kumar S. Customized cheek plumper with friction lock attachment for a completely edentulous patient to enhance esthetics: a clinical report. Journal of Prosthodontics. 2019; 28(1):1-5.
- Jamieson CH. Geriatrics and the denture patient. J Prosthet Dent. 1958; 8:8–13.
- Aggarwal P, Gupta MR, Pawah S, Singh A. An Innovative Technique to Improve Complete Denture Aesthetics Using Cheek Plumper Appliance: A Case Report. Int J Oral Health Med Res. 2016; 3(2):51-4.
- Lingegowda AB, Shankaraih M, Bhallaiah P. Magnet retained cheek plumpers in complete denture patient. Int J Dent Clinics. 2012; 4:65-6.
- 5. Sunil Kumar MV, Rao H, Sohi KS. Artificial cheek plumpers: a step ahead in denture aesthetics—a case report. Indian J Stomatol. 2011; 2:134-7.
- Kamakshi V, Anehosur GV, Nadiger RK. Magnet retained cheek plumper to enhance denture esthetics: Case reports. J Indian Prosthodont Soc 2013; 13:378-81.

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- Rewari A, Dabas N, Sanan R, Phogat S, Phukela SS, Vigarniya M. Esthetic rehabilitation using magnet-retained cheek plumper prosthesis. Case Rep Dent 2020; 2769873.
- Dange SP, Manjarekar N. Cheek plumper: Giving hollow cheek the fullness back. Int J Sci Res 2017; 6:274-75.
- Venkatachalapathy SR, Chander GN, Gnanam P. A magnetically retained cheek plumper in a maxillary single complete denture: A clinical report. J Interdiscip Dent 2019; 9:25-30.
- 10. Bharathi B, Poovani S, Sheety G, Shreya S. Complete dentures with detachable cheek plumper A case report. Int J Sci Res 2019; 8:44-46.

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Figure 1







Figure 4

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Figure 5







Figure 7