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Case Report

Detachable Magnet Retained Cheek Plumpers To Enhance Complete Denture Esthetics - A Case Report

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ABSTRACT

Edentulism leads to collapse of the facial tissues resulting in a sunken appearance of the cheeks causing a negative psychological impact on well-being of a patient. Use of dentures to some extent can restore the loss but in some cases additional support is required. This clinical report discusses a simple non invasive technique to provide support for sunken cheeks using detachable acrylic cheek plumpers, retained using iron–neodymium close-field magnets. Magnets retained cheek plumper is a modification of the conventional technique of supporting the slumped tissues.

Key words: Aging, Botulinum toxins, complete denture, Esthetics, Magnets.

INTRODUCTION

An edentulous patient due to aging suffers loss of alveolar process and teeth, loss of tonicity of musculature, loss of elasticity of the skin and impairment of function. [1] It becomes important for the prosthodontist to restore the lost structures and improve the esthetics there by providing psychological benefit to the patient. Many factors like thinning of the tissues, extraction of molars and weight loss may cause concavities below malar bone or slumped cheeks. [2] This may cause the patient to look much older than their age and has a negative impact on their social and professional lives. A prosthesis known as cheek plumper can be used to support the sunken cheeks and improve appearance of the patient. It has also been used in maxillofacial prosthodontics and Bell's palsy patients for improving esthetics. [3,4] Fabrication of denture to plump the cheek by adding extra denture base resin adds to the weight of the denture. A conventional cheek plumper, a single unit prosthesis with extensions in the buccal region has the same disadvantages causing discomfort to the patient. [5] Also mesiodistal width of the prosthesis is increased which makes insertion in microstomia difficult. This situation can be managed by using detachable cheek plumper; where plumper can be detached easily from the complete denture.

CASE REPORT

A 43 year old female patient reported to Department of Prosthodontics Government Dental College Trivandrum for the replacement of her missing teeth. On intra-oral examination the patient had completely edentulous maxillary and mandibular arch. She lost her teeth due to periodontal problems and was edentulous from past 3 years. She was very conscious of her appearance and complained of sunken cheeks which made her look older than her age. Fabrication of maxillary and

mandibular complete dentures with intraoral closed faced magnet retained cheek plumpers attached to the maxillary denture was planned.

Figure 1: Pre operative frontal view.

Figure 2: Final impression.

Figure 3: Facebow transfer.

Figure 4: Trial denture in patient's mouth.

Figure 5: Buccal surface of cheek plumper.

Figure 6: Fitting surface of cheek plumper with counter magnets.

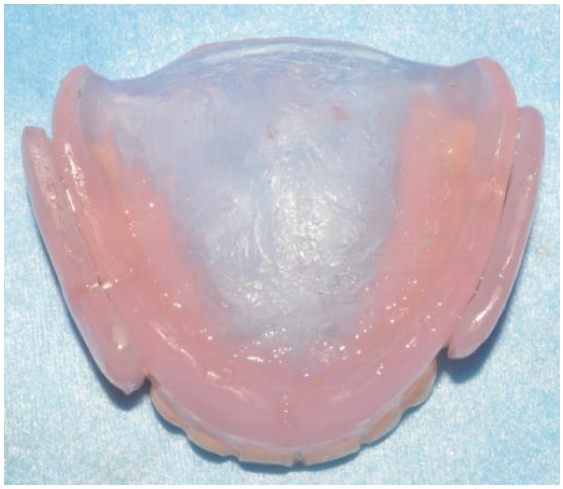

Figure 7: Denture with cheek plumper intanglio surface view.

Figure 8: Denture with cheek plumper frontal view.

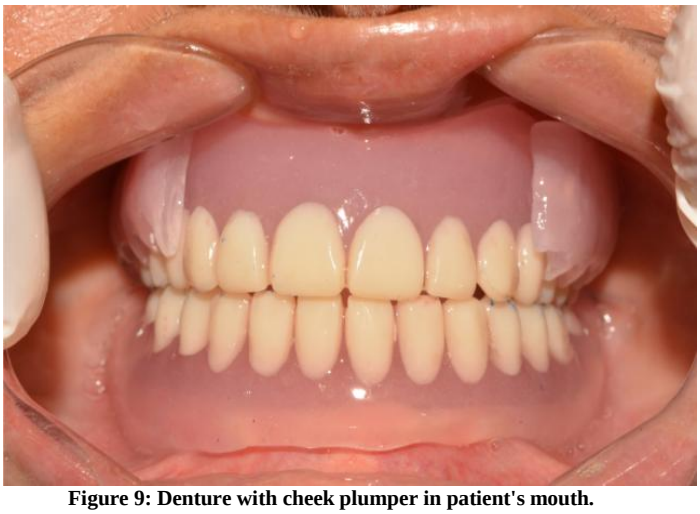

Figure 9: Denture with cheek plumper in patient's mouth.

Figure10: Complete denture insertion without cheek plumpers.

Figure 11: Complete denture insertion with cheek plumpers.

Technique

1) Primary impressions of maxillary and mandibular arches were made using impression compound (DPI pinnacle, Mumbai, India) and custom trays were fabricated using auto polymerizing acrylic resin (Trevalon Dentsply ltd, Gurgaon, India).
2) Border molding was done using low fusing impression compound. (DPI Pinnacle, the Bombay Burmah Trading Corporation Limited, Mumbai, India) and final impression was made using zinc oxide eugenol impression material (DPI, Mumbai, India).
3) Further Jaw relations were recorded; teeth were set using a semi- adjustable articulator and try- in was done to check for occlusion, esthetics and phonetics.
4) Following try-in cheek plumpers were made in wax and attached to waxed up maxillary denture for trial in the same appointment. Significant change was seen in the appearance after attaching

cheek plumper and the patient also accepted it readily.

5) Following try-in, cheek plumpers were removed from the waxed up denture and both plumpers and denture were processed separately using heat cure acrylic resin (DPI, Mumbai, India).
6) After deflasking cured denture and plumpers were retrieved, trimmed, finished, and polished. Two pairs of commercially available neodymium iron boron magnets (Ne-Fe-B) of size 5mm* 2mm (Ambika Corporation, New delhi, India) was used to attach plumpers to the complete denture.
7) Provision for the placement of magnet was made on the buccal surface of the flange of complete denture and the intaglio surface of the plumpers. Magnets were positioned using auto polymerizing acrylic resin and complete polymerization was ensured by placing it in pressure pot. After inserting the complete dentures, plumpers were attached in such a manner that they did not interfere with opening, closing and lateral movements of the mandible.
8) Attachment and removal of cheek plumper were demonstrated and necessary instructions were given to the patient. The patient was recalled for follow up appointment every six months.

DISCUSSION

Ageing leads to the loss of support by the alveolar bone and teeth resulting in collapse of lower third of face. In addition, drooping of corner of mouth, loss of vermilion border, depression of lips exaggerated wrinkling, deepening of nasolabial fold are also noticed. [6] Appearance of sunken cheeks in adults is due to many reasons such as loss of buccal pad of fat, subcutaneous tissue and elasticity of connective tissues. [1] Slumping of cheeks can be corrected by injecting the botulinum toxin (BOTOX) in the facial muscles, reconstructive plastic surgery and different types of prosthesis. [7] The problem with plastic surgery is that being a traumatic procedure it leaves behind the post-surgical scar, sometimes contra-indicated in old patients suffering from systemic diseases. [8] The problem with the conventional cheek plumper is that the size and weight of the denture increases that affects the retention of the denture. It may also lead to muscle fatigue due to regular use. Also it is tough to use it in patient with limited mouth opening.

Use of magnets has become very popular these days in dentistry mainly due to their small size and strong attractive force. Use of magnets has a lot of advantages like easy placement for both patient and the dentist; easy cleaning, automatic reseating, simple clinical and laboratory procedures and also it can provide a constant amount of retentive force even with a number of insertion and removal cycles of prosthesis. [9,10] The disadvantages with magnets are that they have poor corrosive resistance within oral fluids and so require encapsulation with relatively inert alloy such as stainless steel or titanium. [9] The patient was educated about the procedure and the materials used, and informed consent was obtained. The patient was made aware of the need for frequent review calls after insertion of the prosthesis.

CONCLUSION

With advancing age, treatment options become limited and the clinical situation becomes more challenging. In order to achieve excellent denture esthetics along with supporting the lip it's important to provide additional support to the slumped tissues. Use of magnet retained cheek plumper is one such option that can enhance the esthetics thereby restoring the self-confidence and improving the psychological well-being of the patient.

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