

**Magnet Retained Maxillary Complete Denture with Cheek Plumber to Improve Facial Esthetics: A Case Report.**Dr. Harjyot Singh Ramgadhia¹, Dr. Vilas Patel², Dr. Ramesh T.R.³, Dr. Shweta V. Ambalia⁴, Dr. Mayur Dhawaj Mahida⁵, Dr.Nikunj Patel⁶^{1,5,6} Postgraduate student in Department of Prosthodontics, ² Professor in the department of Prosthodontics, ³ Professor and H.O.D in the department of prosthodontics, ⁴ Postgraduate student in the department of conservative and endodontics.,

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Complete Denture is an artificial appliance which restores natural functions and esthetics caused by loss of natural teeth. The success of prosthetic treatment not only is predicted by dentist ability but also on the ability to relate to patients and to understand their needs¹. 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 individual¹. Use of dentures to some extent can restore the loss but sometimes additional support is required. This case shows a way to improve facial esthetics by adding magnetic retained cheek plumber in maxillary complete denture.

Key words: Cheek Plumber, Magnet Retained, Sunken Cheeks, Facial Esthetics.**Introduction**

Denture esthetics starts with the very first step of impression making, a prosthodontics plays very important role in restoring following losses in patient due to aging including loss of teeth, alveolar process, tonicity of musculature, elasticity of skin as well as impairment of function.^{2,3}

The first objective of complete denture prosthesis is mastication. Second objective is restoration of the esthetics, concerned with the artistic phase of the prosthesis. It relates to the ability of the prosthesis to construct or create the natural looking substitutes for the lost natural alveolar processes and teeth and to reproduce by artistic sense and skillful technique to restore the lost facial contour as well.⁴

Cheek plumber, also known as the cheek lifting appliance is basically prosthesis for supporting and lifting the cheek to provide required support and esthetic that will increase the self-esteem of the patient⁵. A conventional cheek plumber is a 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 denture⁶.

This paper reports an innovative technique of plumping the cheeks using cheek plumber which attached to the conventional complete denture using magnets.

Case report

A 56-year-old male patient came to the Department of Prosthodontics, Narsinhbhai Patel Dental College and Hospital with a chief complaint of missing maxillary and

mandibular teeth. Patient was also not happy with the collapse of the cheeks due to missing teeth. Keeping in mind the needs of the patient a proper diagnosis and treatment plan was followed. Fabrication of maxillary and mandibular complete dentures with intraoral closed faced magnet retained cheek plumpers attached to the maxillary denture was planned.

- 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 (TrevalonDentsply 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 using green stick . (DPI Pinnacle, the Bombay Burmah Trading Corporation Limited, Mumbai, India) and attached to waxed up maxillary denture for trial in the same appointment. Significant change was seen in the appearance after attachingcheek 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 (Sonal

magnets, Ahmadabad, 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.



Figure 1: Pre-operative view of patient demonstrating collapse cheek.



Figure 2: Try in was done with cheek plumper attached to the waxed up denture .and significant change in facial esthetic was seen in try in appointment.



Figure 3: plumber deflasking was done and mould was fabricated .and fabricated plumber with attached magnet.



Figure 4:(a) cured maxillary and mandibular denture with plumber. (b) plumber attached to maxillary denture with magnet to the buccal surface of both sides of denture.

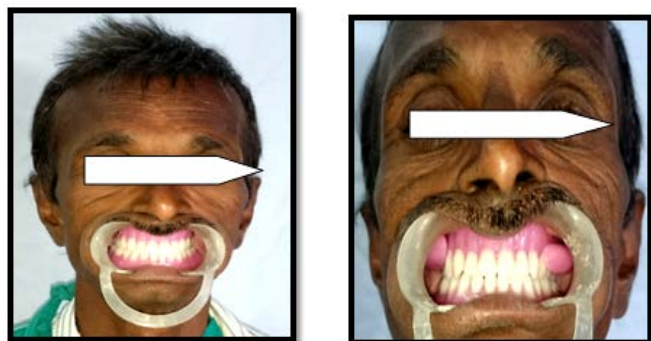


Figure 5: Denture insersion with magnet attached to the maxillary denture .and plumber attached to the maxillary denture.



Figure 6:Pre-operative view. Post operative view.

Discussion

Sequelae of advanced aging is tissue atrophy, folds and creases of face become exaggerated which is due to loss of support by the alveolar bone and teeth in particular leading to collapse of lower third of face. There is deepening of nasio labial fold, drooping of corner of mouth, loss of

vermilion border, depression of lips exaggerated wrinkling⁶⁻⁷. Teeth loss in posterior region results in loss of support to cheeks, which tend to move medially to meet laterally expanding tongue⁸. Cheek contour change as a result of loss of vertical dimension of occlusion due to anterior teeth loss. Loss of subcutaneous fat, buccal pad of fat and elasticity of connective tissue produce the slumped cheeks, seen in aged.⁸

The conventional cheek plumper has the major problem of retention and stability of maxillary denture due to increased size and weight of the denture. It can also lead to muscle fatigue due to continuous use.¹ Magnet has generated great interest within dentistry and their application are numerous. The reasons for their popularity are related to their small size and strong attractive forces. Despite their advantage, magnets have poor corrosive resistance within oral fluids and therefore require encapsulation with relatively inert alloy such as stainless steel or titanium^{6,9}. In this case, stainless steel was used instead of clinical magnets due to affordability of the patient. To combat the major demerits of the conventional cheek plumper this innovative intraoral detachable magnet retained cheek plumper provides multiple advantages including smaller size, easy to insert in two separate portions, easily detachable providing patient the allowance of its use which in turn reduces the chances of muscle fatigue and most importantly maintenance of the appliance becomes easier⁶.

Stansbury described the first functional chew in technique by using a compound maxillary rim trimmed buccally and lingually and hence that the occlusion is free in lateral excursions. Carding wax was added to the rim and patient was asked to perform eccentric movements^{10,11}. A functionally generated path was thus formed. Vig used similar technique but used a resin fin instead of impression compound^{10,12}. Sharry mentions a simple

technique of using maxillary rim of softened wax and recording lateral and protrusive movements so that wax is abraded generating the functional paths of the lowercusps.^{10,13}

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 of 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.

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