

# INCORPORATING TWIN CHEEK PLUMPERS IN REHABILITATION OF AN EDENTULOUS PATIENT WITH BELL'S PALSY PATIENT - A CASE REPORT

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## Abstract:

*Esthetics plays an important role in Complete dentures treatment. Bell's palsy is a facial nerve disorder characterised by unilateral paralysis of the face, drooping of the lip and corner of the eye and pulling of the face towards the affected side, which not only makes fabrication of complete dentures difficult for the edentulous patient but also affect the patient psychologically. Despite fabrication of esthetic and functional complete dentures, the lengthened and flattened affected face side can only be improved by adding different plumper designs to the prosthesis.*

*The following report describes making double cheek plumpers for an edentulous Bell's palsy patient with excessive drooping of affected side, thus creating better esthetics and lighter individual maxillary and mandibular dentures.*

**Key words:** Bell's palsy; Double Cheek plumpers; Facial paralysis, complete dentures, Edentulous

## Introduction

Bell's palsy is a lower motor neuron disorder in which the facial or seventh cranial nerve is damaged. It greatly affects the esthetics of the

patient with compromised patient's confidence and social interaction. It presents with characteristics features such as unilateral muscle weakness or paralysis, in ability to close or blink affected eye, drooping of the corner of the mouth and eyelid and absence of wrinkles on the forehead<sup>1</sup>.

Treatment of facial palsy has been reported by nerve regeneration therapies, grafting of the nerve, adenosine triphosphate, vitamins, and acupuncture<sup>2</sup>. With the recent advancements in surgical reconstruction, the prognosis of rehabilitation has improved.<sup>3,4</sup> The edentulous patients with Bell's palsy doubles the challenge of esthetic and functional prosthetic rehabilitation because of reasons outlined above.

Prosthetic treatment for such patients includes cheek plumpers in dentures designed to correct facial symmetry and provide support to the flaccid cheeks<sup>5</sup>. This report describes rehabilitation of a patient with hemiplegia of the face, edentulous residual ridges and excessive drooping of corner of mouth and sunken cheeks with anon-invasive, non-detachable double cheek plumper incorporated in maxillary and mandibular complete dentures.

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## Case Report

A 61-year-old male patient reported to the Department of Prosthodontics for the replacement of missing teeth with a history of hemifacial paralysis of the right side due to unknown origin since 3 years. The patient was undergoing treatment but refused invasive intervention. Extraoral examination showed muscle weakness

and paralysis of the right side of face with drooping corner of mouth and eyelids, inability to close the right eye on affected side, sunken cheek, and face drawn the affected side. Speech was slurred and lip movement was restricted (Figure 1). Patient also complained of drooling of saliva and food from affected side.

Intraoral examination revealed completely upper



Figure 1- Before Prosthetic Rehabilitation



Figure 2- Maxillary edentulous arch



Figure 3- Mandibular Edentulous arch



Figure 4- Try-in of complete dentures minus plumpers



Figure 5- Finished Complete Denture Intraorally



Figure 6 Complete Dentures with double cheek plumpers



Figure 7 After Prosthetic Rehabilitation

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and lower edentulous ridges with adequate interarch distance and well-formed ridges. No abnormalities were detected (Fig. 2&3)

By considering patient's priorities and requirements, after explaining available treatment options with their pros and cons it was decided to fabricate conventional removable complete dentures for the patient with cheek plumpers.

Primary impression was made using irreversible hydrocolloid impression material (Zelgan 2002; Dentsply, Bengaluru, India) and diagnostic casts were poured in Type III dental stone (Dentstone; Pankaj Industries, Mumbai, India). Customised tray was fabricated using self cured acrylic, border moulding was done using low fusing impression compound (DPI, Dental Products of India, Mumbai, and Maharashtra, India) and wash impression was made with Zinc Oxide Eugenol impression paste (DPI Impression Paste, Dental Products of India, Mumbai, Maharashtra, India) following selective pressure philosophy. Jaw relations were recorded using the neutral zone technique to account for the decreased labial and buccal muscle activity on the right side. Accordingly the dental arch on that side was placed more facially and also to better support the flaccid musculature.

Try-in (Fig 4) was initially done for visibility, esthetics and occlusion, then twin cheek plumpers were fabricated and customised in order to improve the symmetry and esthetic of the face with modelling wax. They extended from the 1st molar to the canine region antero posteriorly and from the denture border to the gingival zeniths supero inferiorly. At the same time, function, speech and drooling were also mentioned.

After the esthetics as well as function were found satisfactory, both maxillary and mandibular trial dentures with cheek plumpers were invested, dewaxed then packed and polymerized in heat cure acrylic resin. (DPI®, Dental Products of India, Mumbai, Maharashtra, India).

The finished and polished the dentures were

delivered (Figure 5 & 6) after evaluation and adjustment of the fit, occlusion and esthetics. The patient was recalled after 24 hours. Patient reported marked improvement in speech and mastication. Salivary drooling lessened and patient was satisfied with the esthetics. (Figure 7)

## Discussion

Cheeks play an important role in facial esthetics. They derive its support from teeth, muscles, residual ridges and or dentures flanges. Factors like loss of teeth, thinning of tissues due to ageing, paralysis of the muscle of the face or reduction in vertical dimension can alter the contour of the cheek leading to concavities and drooping of the face. This affects esthetics and has a negative impact on the mental health as well as social life of the patient.<sup>6</sup> The situation worsens when a patient loses his/her teeth or is affected by disease affecting muscle tonocity such as facial paralysis.

There are various treatment options available for treatment of sunken cheeks or drooping lips. Metallic wire with acrylic button/customized attachments incorporated as of cheek plumpers can provide support. Quick short-term results can be achieved by using nonsurgical injectable fillers such as botulinum toxin-A but long-term results are awaited. Surgical correction is also an available treatment modality. Prosthodontic rehabilitation aims not only at replacing missing teeth and function but also in improving support of the face as well as overall esthetics of the patient. In patient where there are sunken cheeks or drooping of the face in addition to conventional dentures requirement as a prosthesis called "cheek plumper" can be attached to the dentures to provide support to the facial musculature and can be improve the esthetics.<sup>5</sup> Turnbull advocated padding of the buccal flanges as a modification for facial support.<sup>7</sup> Fickling advocated spring-loaded acrylic flange extensions of dentures for patients requiring prosthetic rehabilitation with affected cheek support.<sup>8</sup>

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Addition of an extra quantity of denture base resin to plump the cheek may increase weight of the denture leading to discomfort for the patient frequent denture dislodgement, ridge resorption and unfavourable torqing and leverage forces. Therefore in this technique double cheek plumpers were used for both maxillary and mandibular complete dentures, thus reducing individual bulb size and distributing the plumping effect to a larger area of the face. Limitation of this method include added effort and time in developing a second plumper. Future area of improvement include making hollow plumpers for even lighter dentures.

## Conclusion

Twin cheek plumpers not only reduce weight of the single complete dentures but also bring about additional improvements in the esthetics of patients with severe facial drooping.

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