MODIFIED COMPLETE DENTURE PROSTHESIS TO SUPPORT LIP AND IMPROVE SPEECH IN COMPLETELY EDENTULOUS PATIENTS WITH NEUROLOGICAL PROBLEM—A CASE REPORT

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ABSTRACT

Lip has an important role in esthetics and phonetics of an individual. Damage to marginal mandibular nerve leads to loss of motor function and muscle tone of the affected side of lip. Eventually, it leads to loss of both primary functions of lip. Various surgical approaches of treatment do exist, but the treatment time is long and results are often not satisfactory. Prosthetically, these patients can be managed with the help of lip plumber prosthesis. This case report presents simple and accurate method to restore the harmonious relation of the lip.

Keywords: lip plumber, lip support, nerve damage, paralysis

INTRODUCTION

Lips form an important component of facial esthetics and have significant role in social life of an individual. The second important role which lips have is in formation of speech. Loss of motor innervation to muscles controlling the lower lip leads to paralysis on the affected side of the lip.¹ Such situations can be treated with therapies like nerve regeneration, nerve grafting, adenosine triphosphate drugs, and acupuncture.²⁻⁵ But the time span for these treatments is long and outcome is often unsatisfactory. An alternate to surgical intervention, patients can also be managed prosthetically with the help of lip plumber prosthesis. Various articles have been reported in the literature focusing on prosthetic rehabilitation of paralytic lip.^{6,7} In the present case report, management of completely edentulous patient with right marginal mandibular nerve damage is described with the help of lip plumber prosthesis.

CASE REPORT

A 58-year-old male patient was referred to the Department of Prosthodontics G.D.C. Amritsar for oral rehabilitation. On examination, patient had completely edentulous maxillary and mandibular ridges. Extraoral examination revealed loss of motor function and muscle tone in right lower lip with the deviation of lip toward left (**Figure 1**). Patient had a history of trauma and mandibular setback surgery. There was also a loss of retromolar area in right mandibular region with damage to right marginal mandibular nerve. As a result, the right lower lip was paralyzed giving unesthetic appearance to the patient. Treatment plan was made keeping in view the functional and esthetic requirement of patient. It was planned to give upper and lower complete denture with fixed lip support prosthesis to prevent lip biting and meet phonetic requirement of the patient.

Maxillary and mandibular initial impressions were made with impression

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Figure 1: Preoperative view of the patient.

Figure 2: Patient experiencing lip biting with original denture.

compound. Autopolymerizing resin custom trays with spacer were used to make final impression with ZOE. Jaw relations were recorded and try-in was done for patient. No significant improvement was seen in speech and added to that there was right lip biting (**Figure 2**). Conventional complete denture was made and adjusted in patient's mouth. After insertion of denture, modeling wax pattern was made on lower denture to support lip and prevent lip biting. Modeling wax was molded and shaped within functional and esthetic limits. Try-in of prosthesis was done. Addition of silicon putty index was made on molded wax. Wax was then removed and roughening of denture was done in area of wax pattern. Separating media was applied on areas adjoining the index to prevent adhesion of self-cure resin. Clear self-cure acrylic resin was filled inside the index. After curing of cold cure resin, finishing and polishing was done (**Figure 3**). Patient was instructed on the use of lip support/lip plumber prosthesis. It significantly improved the esthetics by recreating the lost contour of lip and also prevented lip biting between the denture teeth (**Figure 4**). Recall appointment was scheduled after 1 day, 7 days, 1 month, and 6 months.

Figure 3: Lip plumber prosthesis.

Figure 4: Postoperative view of the patient.

DISCUSSION

Many case reports have advocated the use of lip and cheek plumber prosthesis with great degree of success.^{8,9} Simple yet accurate method for the fabrication of lip plumber prosthesis is presented in present case report. Action of tongue, cheek, and lip on complete denture should be accurately examined for the success of prosthesis. Use of lip plumber is advocated within functional limit of acting muscles. Properly fabricated lip support prosthesis will highly improve esthetics and prevent lip biting in patients with neurological defects.

Patient's acceptance of treatment by lip plumber was positive and had shown significant improvement in speech and mastication during follow-up appointments.

CONCLUSION

This case report describes an effective, simple, and noninvasive procedure to maintain function and esthetic in edentulous patients with marginal mandibular nerve damage resulting in loss of lip support. Customized wax pattern on final denture gives accurate guide about location and extend of required lip support. Lip support

prosthesis provides significant improvement in contour and function in edentulous patients with lip paralysis.

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