

Clinical Report

Prosthodontic management of a completely edentulous patient with unilateral facial paralysis

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Facial paralysis is a condition that affects the muscles of face by involving the VIIth cranial nerve. A 58-year-old completely edentulous female presented with the facial paralysis of left side of face. The duration of her illness was more than 50 years. The dentures were modified with regard to the abnormal oral environment to improve the esthetics and function and limit the degree of neuromuscular disability because the disorder reduces the prognosis of prosthodontic treatment to partial success. The final treatment result provided the patient with improved dental esthetics and function that enhanced her self esteem.

Key words: Bell's palsy, buccal sulcus support, unilateral facial paralysis

INTRODUCTION

Paralysis is defined as a temporary suspension or a permanent loss of function.^[1] Facial paralysis has a multitude of etiologies such as immune or viral diseases (herpes zoster oticus), trauma (iatrogenic, accidental), ischemia of nerve (neoplasms) or idiopathic (Bell's palsy).^[2]

It is of two types according to the site of neuron that is affected, i.e., upper motor neuron (UMN) and lower motor neuron (LMN). LMN paralysis affects the complete half of the face unlike UMN palsy in which the lower half of the face is spared due to bilateral innervation in the cerebral cortex.^[3]

The common clinical features of facial paralysis (LMN) are facial asymmetry, drooping of the corner of mouth, inability to close/wink the eye, loss of wrinkles of forehead, mask-like appearance, difficulty in speech and eating.^[2] In the prosthodontic management of facial paralysis, the general principles of complete denture design are essentially the same; the disorder does affect the design of particular surfaces or parts of denture.

CLINICAL REPORT

A 58-years-old completely edentulous female patient presented with facial paralysis of left half of the face with the duration of illness for more than 50 years to the Department of Prosthodontics, GDC, Amritsar. Her chief complaints were the inability to chew and unesthetic appearance of face. She had no past denture experience. She had an asymmetric face with loss of muscle bulk (droop) on the paralyzed side. The face

was drawn to right side during phonation that was explosive in nature and she spoke with great difficulty. She had jerky movements of the lower jaw at closure and while speaking.

Her condition was classified according to the classification system for reporting results of recovery from facial paralysis by House and Brackman (1985) as grade IV, i.e., moderately severe dysfunction with obvious disfiguring weakness, inability to lift brow, incomplete eye closure and asymmetry of mouth with maximal effort.^[4]

The denture bearing areas were captured in the impressions with borders intentionally made thicker within the physiological limits, on the affected side to support the flaccid musculature [Figure 1]. The occlusal plane was oriented parallel to a line joining the angles of the functionally deviated mouth, i.e., canting of occlusal plane was performed. Further, the midline for trial dentures was marked in the center of deviated mouth.^[5] This was performed in an attempt to diminish the crooked appearance of face while smiling/speech. Habitual centric relation record was used for teeth setting and wax occlusal rims were contoured for adequate buccal sulcus support.^[6,7]

The anterior teeth were set according to the shifted midline (almost 6 mm to the right), the posteriors were arranged accordingly and the numbers of posterior teeth were not equal on both sides [Figure 2]. Zero-degree posterior teeth were selected as they have the advantages of simplest recordings and a wide range of tooth positions possible; further there were no lateral stresses on the underlying structures and are easier to control for patients with uncoordinated closures.^[8] In this patient, the mandibular movements



Figure 1: Upper/Lower initial and final edentulous impressions



Figure 2: Upper/lower teeth set up with shifted midline and zero degree teeth



Figure 4: Pre-postoperative photographs of patient



Figure 3: Finished prosthesis with adequate buccal sulcus support

were jerky and accurate recording of centric relation was difficult.

DISCUSSION

Facial palsy is indicative of neurological involvement. Patients with this disease can be treated but it is essential that they understand their problems. Denture retention, maxillomandibular relation records and supporting the musculature are some of the added denture problems.^[9] The finished prosthesis had a shifted midline and canting of occlusal plane to enhance esthetics. Flaccid facial

muscles needed support and this was done by adding wax and then acrylizing it [Figure 3]. The additional material could be easily added since muscular force exerted against it by the paralyzed muscle and tissues were no longer a deterrent factor.

It was important that the remaining oral structures be maintained in a state of good health so that the prosthesis lasts longer. Use of nonanatomic posterior teeth minimizes the damage to the denture supporting tissues. Since the food accumulates on the paralyzed side, the patient was instructed to maintain the hygiene of the prosthesis and oral cavity. Regular gum massage was advised to maintain the supporting tissues in a state of good health.

CONCLUSION

The denture prosthesis should fulfill its basic objectives of restoration of function, restoration of facial appearance and maintenance of health of remaining oral tissues. Various steps of denture fabrication were methodically executed and modified with respect to the abnormal conditions in an attempt to enhance esthetics, function and self image of the patient and

to improve the prognosis of treatment [Figure 4].

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