EXTENDED Buccal Flange Technique To Manage Bells Palsy Patient With Complete Denture

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ABSTRACT

This paper reports the prosthodontic rehabilitation of an edentulous jaw in a 70 year old female patient with bells palsy by maxillary complete denture with extended buccal flange. This extension was used to elevate the cheek musculature, vestibule and lips thereby improving the fullness and support to the face on the affected.

Key words: Bell’s palsy; Esthetics; Prosthodontic rehabilitation; Extended buccal flange; complete denture.

Introduction

Bells palsy is the most common acute lower motor neurone (LMN) paralysis of face. Facial paralysis of permanent nature affects the prosthetic outcome. Permanent facial paralysis can be devastating for a patient. Modern society’s emphasis on appearance and physical beauty contributes to this problem and often leads to isolation of patients embarrassed by their appearance. Lagophthalmos with ocular exposure, loss of oral competence with resultant drooling, alar collapse with nasal airway obstruction, and difficulties with mastication and speech production are all potential consequences of facial paralysis. Affected patients are confronted with both a cosmetic defect and the functional deficits associated with loss of facial nerve function. This paper reports the prosthodontic rehabilitation of an edentulous jaw in a 70 year old female patient with Bell’s palsy by maxillary complete denture with extended buccal flange.

Case Report

A 70 year old female patient reported to the Department of Prosthodontics with the chief complaints of inability to chew and asymmetrical facial appearance. The patient was a denture wearer for the past 38 years. History revealed excision of benign tumour in the left post auricular region two years back. Following the surgical excision of the tumour she developed the following symptoms such as inability to close the left eye lid, inability to raise the left eyebrow, angle of the mouth was drawn to the right side on smiling; drooling of saliva at the corner of the mouth on the left side, obliteration of the nasolabial fold, loss of skin tone on the affected side and philtrum of the lip was deviated to the right side. On intraoral examination completely edentulous maxillary and mandibular arches with moderately formed maxillary residual ridge alveolar ridge and an extremely resorbed mandibular ridge in level with the floor of the mouth was noticed. Examination of the old dentures revealed decreased retention and stability of the maxillary and mandibular dentures. The diagnosis of unilateral Bell’s palsy with complete edentulism was confirmed and was considered for rehabilitation of the patient with complete denture with modified buccal flanges with the following objectives. The treatment plan includes construction of a new set of complete dentures to restore the fullness of the cheek by providing extra support through the modification in the buccal flange, reposition the corner of the mouth at a higher level thereby prevent the drooling of saliva, prevent the food entry into the buccal corridor on the affected side by extension of the buccal flange downwards till the mandibular denture to act as a curtain thereby preventing the food escape, and reposition the cheek support thereby providing the space for modulation of speech.

Procedure: Preliminary impressions were made for both maxillary and mandibular arches, border molding was done and final impressions were made. Tentative jaw relations were recorded, Face bow transfer was done. After the wax-try the maxillary master cast was scraped from the buccal vestibule towards the land area to accommodate the modified buccal flange extension. The buccal flange was extended upwards to elevate the cheek musculature, vestibule and lips thereby improving the fullness and support to the face on the affected side (Figure 1,2,3). The buccal flange was also extended inferiorly lateral to the buccal surfaces of the maxillary posteriors below the occlusal plane to cover buccal surfaces of the mandibular teeth almost touching the buccal flange of the mandibular denture. The buccal flange of maxillary trial denture was modified by adding modeling wax incrementally from the distal surface of first premolar to the maxillary tuberosity region till the cheek was raised enough to lift and hold at a favorable position. This extension served as a curtain to prevent the food escaping into the buccal corridor. It also enhanced stability and retention for the mandibular denture. There were no loss of retention or inconvenience and impingement was experienced by patient during the procedure. Acrylization was carried out, dentures were finished and polished. Denture insertion was done. Recall checkups were done after 24 hrs, 3 days, 1 week interval. The patient was happy and satisfied with improved esthetics, masticatory efficiency and phonetics. The extended flange did not cause any pressure on the vestibule and the patient did not complain of lack of retention.

Discussion

Neuromuscular disorders affect the nerves that control the voluntary muscles resulting in muscles weakness and wasting. Bell’s palsy is one of the commonest neuromuscular disorders affecting 1 out of 5000 people. Bell’s palsy is a form of facial paralysis resulting from damage to the facial nerve. If upper motor neuron (UMN) type, it affects contralateral lower half
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of face and if lower motor neuron (LMN) type then it affects ipsilateral half of the face. Bell’s palsy is defined as acute idiopathic facial muscle paralysis. It is a diagnosis of exclusion and its annual incidence is about 20/100,000.1,2 Facial paralysis has been described since ancient times. In 1821, Sir Charles Bell drew attention to the anatomical course and function of the facial nerve. Bell’s palsy affects the unilateral facial muscles with typical features like inability to blink, absence of wrinkles on the forehead and asymmetry of face.1,2 The problems encountered during prosthodontic rehabilitation include uncontrolled flow of saliva, a mask-like expressionless appearance and cheek biting. All features may interfere with steps in impression making, jaw relation and denture retention and stability. A combined approach of surgery and mechanical support has been reported. Palliative treatment for permanent facial paralysis includes, modifications of denture to provide support to cheek like padding for buccal flanges, spring loaded acrylic flanges and magnet retained cheek plumpers. Lazzari fabricated a removable partial denture framework with an attached open loop of wire that was used as a hook to engage the corner of the mouth and raise the lip. Larson designed a modified maxillary removable partial denture with buccal retentive mesh, on which modeling plastic was added to elevate the vestibule and cheek. After evaluation of esthetics and phonetics, acrylic resin was substituted for modeling plastic. Tautin used a 19 gauge stainless steel wire extending from a mandibular complete denture extraorally with extraoral loops to support the lower lip. Suresh sajjan fabricated prosthesis with extraoral loops to support the lower lip.

Several attempts have been made to rehabilitate the affected patient’s in the past. In complete denture patient with Bell’s palsy the stability of the denture is primarily affected along with inability to transfer and maintain the food on the occlusal table. The perioral musculature including the buccinator paralysis would permit the overextension of the maxillary buccal flange without any loss of retention and stability. On the contrary the extended flange provides fullness below the zygoma and also physically lifts the sagging cheek into position. This helps to relatively improve the facial esthetics and position the corner of the mouth closer to the occlusal plane. Repositioning of the corner of the mouth helps to prevent the drooling of saliva which is accumulated in the buccal vestibule of the affected side. Extension of the buccal flange beyond the occlusal plane towards the mandible was adjusted to come in contact with the mandibular denture while the teeth are in firm occlusion. This further prevented the food being escaped into the buccal vestibule and also provided stability to the mandibular denture during mastication. Recall checkups were done to monitor the changes in the occlusal contacts and need for correction in the downward extension of the maxillary buccal flange.

Conclusion
In conclusion a conservative management of a completely edentulous patient with facial palsy with modification of dentures improves patient’s sense of well-being.

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