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CASE REPORT

A CHEEK LIFTING APPLIANCES FOR SLUMPING OF CHEEKS: A CASE REPORT

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ABSTRACT

Aesthetics plays an important role in complete denture treatment. Prosthetic rehabilitation of a completely edentulous patient no longer confines to only the replacement of missing teeth. Nowadays patients are too demanding for improvement in esthetics at the completion of treatment. The loss of support of the facial musculature is of great concern in treating completely edentulous patients. Sunken cheeks are one of the major consequences of flaccid facial musculature. Natural teeth should be preserved but at the same time, clinician must be aware of the edentulous ridge that could be destroyed by forces exerted on the denture during function. Further, it has a greater impact on the aesthetics as well as the psychology of the patient. Conventional Cheek plumper appliances can restore such facial delinquencies. The underlying principle for providing this appliance is that some patients have depressed cheeks and require extra support for improved facial aesthetics. This clinical report describes a simple technique to improve support for sunken cheeks using undetachable acrylic cheek plumper.

INTRODUCTION

Facial esthetics plays an important role in a person's professional and social life. The appearance of the lower half of the face is determined by the contour of the jaw bones, underlying teeth and the soft tissues and muscles surrounding the teeth. The edentulous state is associated with loss of teeth, resorbed alveolar ridge, reduced muscle tonicity and hollow cheeks (Harpreet *et al.*). However slumped cheeks are unaesthetic and add to the person's age. Complete denture treatment includes the replacement of missing teeth. Along with replacement of missing teeth, emphasis should be on improvement of facial esthetics. Conventional complete dentures with appropriate flange extensions and well positioned teeth adequately support the overlying lips and cheeks. However, in individuals with marked resorption of the alveolar process, conventional dentures fail to provide adequate support, necessitating additional support for the cheeks. This can be done using cheek plumper or cheek lifting appliances. Cheek plumper, also known as cheek lifting appliance, is prosthesis for supporting and lifting the cheek to provide required support and esthetic that will increase the self esteem of the patient by providing a youthful appearance (Deogade, 2014). It can be used in patients who have excessive slumping of cheeks due to tooth loss. It is especially useful in young patients who have lost all their teeth and part of the maxillary bone as a result of traumatic injury. The rationale for providing this appliance is that some patients have hollow cheeks and need extra support for better facial aesthetics. Use of plumper prosthesis in maxillofacial prosthodontics is also well documented. This case shows a way to improve facial aesthetics and function in the

individual with marked resorption of the alveolar process. A cheek plumper can be of two types: detachable or undetachable. The undetachable or conventional cheek plumper is 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 denture. Detachable cheek plumper on the other hand is the prosthesis in which plumper part can be detached from the complete denture. This can be achieved by magnets or customized attachments or buttons. There are some limitations like lose of magnetism and lose of tightness of button over a period of time. In present case minimum interarch distance, thinner posterior buccal denture flange was present, space was not available to use attachments such as magnet or press buttons for detachable cheek plumper. Thus we used conventional/ undetachable cheek plumper.

CASE REPORT

A 65 year old male patient reported to the Department Of Prosthodontics, Government Dental College and Hospital, Aurangabad with the chief complaint of missing teeth (Fig.1). On examination, patient had completely edentulous upper and lower arches. He was edentulous for past 2 years. Extra oral examination showed slumped cheeks. The patient was conscious about the slumped cheeks and desired a prosthesis which will make his face look fuller. Keeping patient's demand in mind, the treatment plan was formulated. It was decided to give the patient maxillary and mandibular complete dentures with detachable cheek plumper for the maxillary denture. He was leading a socially isolated life due to the psychological stress of his appearance.



Fig. 1. Pre-operative extraoral view



Fig.2 Waxed-up denture



Fig.3 Intraoral view of waxed up denture



Fig.4 Extraoral view after try-in



Fig.5 Finished and polished denture



Fig.6 Intraoral view of final denture



Fig.7 Extraoral view

Denture fabrication: Primary impressions of maxillary and mandibular arches were made using alginate (Zhermack Tropicalgin Alginate) because of reduced resiliency of submucosa over the residual ridge. Custom trays were made using auto-polymerizing acrylic resin. Border molding was done using low fusing impression compound (DPI Pinnacle, The Bombay Burmah Trading Corporation Limited, Mumbai, India) and wash impressions were made by selective pressure technique. For the try-in appointment waxed denture was first tried for occlusion and esthetics. At the same appointment, cheek plumpers were made in wax and were attached to the upper waxed-up denture (Fig. 2). Then it was evaluated to give the patient a fuller appearance. A dramatic change in the appearance with and without wax-up cheek plumper was observed and it was immediately accepted by the patient (Fig.3&4). After taking patient consent, acrylization of dentures and cheek plumper were done in conventional way. Finished and polished dentures were tried in the mouth (Fig.5&6). Patient was instructed on the use of plumper. They were delivered after evaluating them for fit and esthetics. The patient was educated about the positioning of the plumper to the prosthesis. The patient's demands were fulfilled (Fig.7). He was called for regular check up to evaluate any soreness or looseness of dentures.

DISCUSSION

According to GPT, denture esthetics is defined as the effect produced by a dental prosthesis that affects the beauty and attractiveness of the person. Denture esthetics is not confined to selection of teeth based on factors like form, shape, color,

arrangement and sex, but it has approached a new horizon. Due to the aging process a drastic change including tissue atrophy, exaggeration of folds and creases of face occurs in the facial esthetics. This happens particularly because of loss of support by the alveolar bone and teeth leading to collapse of the lower third of the face (Deogade, 2014). This also results in deepening of the nasolabial fold, drooping of the corner of the mouth, loss of the vermilion border and depression of the lips with exaggerated wrinkling. Loss of posterior teeth results in loss of cheek support, which tends to move medially to meet laterally encroaching tongue. Factors such as loss of subcutaneous fat, buccal pad of fat and elasticity of the connective tissue are also the reason of the sunken cheeks that are seen in the aged (Fig.1). The goal of complete prosthesis should be deal with support of the slumped tissue by either increasing thickness of flange of maxillary and mandibular denture, the vestibular fornix should be filled with appropriate facial contour and some authors have reported arranging second row of teeth only for esthetic reasons. Adjustment of the occlusal rim should be precise for anterior and posterior placement of the teeth and esthetics effect should be studied at rest and function. For plumping of cheeks and to eliminate the tedious work of minor correction of modeling wax, cotton rolls were placed distobuccal aspect of maxillary denture bases. However, cheek plumpers have a few drawbacks, including the accumulation of food, patient discomfort resulting from the additional weight and bulk of the dentures. Such plumpers have limitation in oral sub-mucous fibrosis cases and also buccal extension can interfere with the masseter muscle, buccal frenum and coronoid process leading to destabilization and food entrapment and could result in muscle fatigue. These

limitations can be eliminated by selective trimming of the areas at the massetric notch and the coronoid notch areas. But definitely the greater degree of esthetic improvement which most essentially boosts self esteem of the patient over weighs few limitations it offers (Sunil *et al.*, 2012).

Summary: Cheek plumpers are straight forward to fabricate and provide a noninvasive and cost-effective treatment option for the improvement of facial appearance in patients with sunken cheeks. This treatment helps improve esthetics and the psychological well being of patients. In situations where the desired cheek muscle draping cannot be achieved in patients with sunken cheeks, mandibular cheek plumpers can be successfully inserted in addition to maxillary cheek plumpers in order to improve the overall facial appearance.

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