Case Report

JRAD Journal of Research and Advancement in Dentistry

J Res Adv Dent 2019;9:2s:91-94.

Aesthetic Management of Completely Edentulous Patient with Neutral Zone and Cheek Plumper

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ABSTRACT

Background: Most attractive feature of human being is facial beauty and facial expression which not only effect individual personality but also increase the confidence level. Aesthetics plays an important role in complete denture treatment. Long term absence of teeth leads to loss of tonicity of skin and musculature which often leads to sunken appearance of the face. Form of cheeks is determined by the support provided by internal structures-teeth, ridges or dentures. However, in individuals with marked resorption of the alveolar process, conventional dentures fail to provide adequate support, necessitating additional support for the cheeks. This clinical report describes a simple technique to improve support for sunken cheeks using detachable acrylic cheek plumper.

Keywords: Neutral zone, cheek plumpers, sunken cheeks.

INTRODUCTION

Facial Aesthetics has become an integral part of complete denture prosthetic treatment and no longer confines to just replacement of missing teeth. The natural dentition or dentures provide support to the facial musculature which is responsible for the external form of the lips and cheeks. If the lips and cheeks are unsupported, muscles become weak and do not function properly which leads to wrinkling of skin and sagging of lips and cheeks that can add years to a person's age and hence have a detrimental psychological effect on the patient professional and social life.[1,2]

While replacing missing teeth, it is important that the prosthesis not only replaces the missing teeth but also restore the facial contour. A cheek plumper or cheek lifting appliances can restore these facial contours. The rationale for providing this appliance is that some patients have hollow cheeks and need extra support for better facial aesthetics.[3, 4] Cheek plumpers are basically for supporting and plumping the cheek to provide a youthful appearance. It is especially useful in young patients who have lost all their teeth and part of the maxillary bone as a result of a traumatic injury. However, it can also be used in patients who have an unusually excessive slumping of the cheeks as a result of teeth loss.[5] In this case report a simplified approach for neutral zone impression followed by management of sunken cheek by cheek plumper is described.

CASE REPORT

A 35 year old male patient reported to Department of Prosthodontics, Sudha Rustagi College of Dental Sciences and Research Institute, Faridabad with chief complaint of difficulty in chewing food due to complete missing teeth with both maxillary and mandibular arch. Patient was also not happy with

Received: Nov. 11, 2018: **Accepted**: Jan. 25, 2019
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pISSN 2278-0076
eISSN 2321-9270

the collapse of the cheeks due to missing teeth (Fig.1).

Fig 1: Extra oral frontal view of patient having shunken cheek.

Keeping in mind the needs of the patient, a proper diagnosis and treatment plan was followed. On clinical examination, it was seen that mandibular ridge was severely resorbed and maxillary arch was moderately resorbed. Extra oral examination showed that cheeks appeared to have a sunken appearance on both the sides. All the steps for conventional complete denture were completed till jaw relation stage. The maxillary and mandibular casts were mounted.

For mandibular resorbed ridge neutral zone procedures were carried out. Mandibular denture base was fabricated with wire stocks and acrylic pillars, one in incisor and two in first molar region to provide support for the compound used during neutral zone recording. The softened compound was kneaded and a roll was formed according to the crest and was attached to the base. The attached roll of compound was reheated in the water bath and was carried into the patient's mouth. With the record base firmly seated, the patient was asked to perform a series of actions like swallowing, speaking, sucking, pursing lips, pronouncing vowels, sipping water and slightly protruding the tongue several times which simulated physiological functioning. During function of the lips, cheeks, and the tongue, the forces exerted on the soft compound moulds it into the shape of the neutral zone.

The putty index was made to replicate the space of neutral zone (Fig-2).

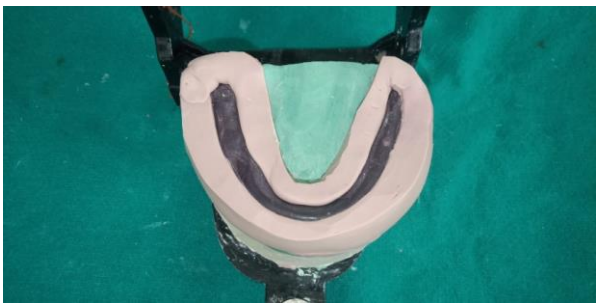

Fig 2: Putty index used to replicate neutral zone.

Teeth arrangement was done exactly following the index. The position of the teeth was checked by placing the index together around the wax try-in (Fig-3).

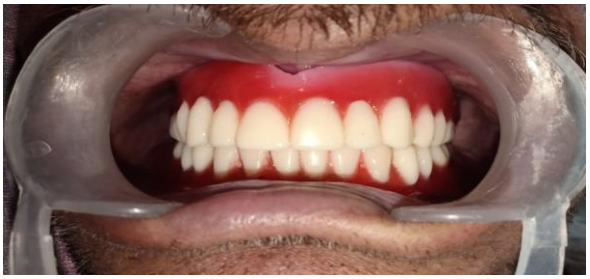

Fig 3: Try-in of denture with impression compound.

At the try-in stage, the template for cheek plumper was fabricated with the help of impression compound. Impression compound was molded and placed over the maxillary and mandibular right and left buccal flange of the denture bases. Border movements were done so that the compound gets well adapted. Movements were repeated till the cheeks gained required fullness (Fig-4).

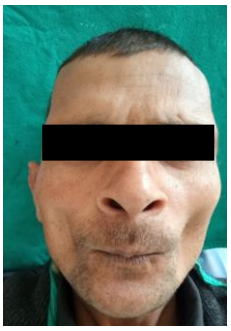

Fig 4: Extra oral view of patient showing cheek movements.

Now, the cheek plumper made of impression compound were separated from waxed up denture bases. Denture flasking and dewaxing procedures were finished separately for the final dentures and cheek plumpers . The resultant mold space was then packed with heat-polymerizing acrylic material and curing procedures were completed. After curing, the cured final prosthesis and plumpers were retrieved. Trimming, finishing, and polishing procedures were performed (Fig-6).

Fig 5: Complete denture with cheek plumper.

Clinical magnets being out of affordability of patient, push button attachments were used to attach cheek plumpers with denture bases. 2mm deep and 5mm diameter holes were made on the posterior flange of the denture bases and the corresponding area of cheek plumpers also. The female part of the push button was attached to the denture base, and male part of push button was attached to the cheek plumper with the help of auto-polymerizing resin. The patient was given common post-insertion instructions and was encouraged to make efforts to learn to adapt to the new dentures and the push button retained cheek plumpers. Within a week, the patient expressed satisfaction in mastication and phonetics and his esthetic dilemma was reduced with the use of detachable push button retained cheek plumpers (Fig-7 A, B).

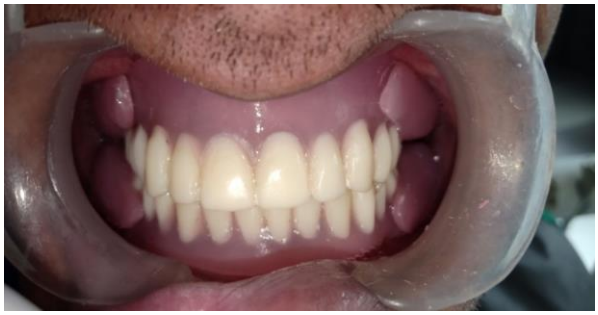

Fig 6: A Intraoral view of complete denture with cheek plumper.

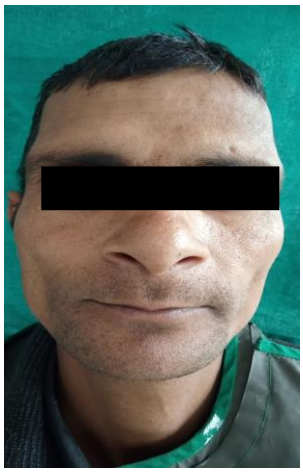

Fig 6: B Post operative view of patient.

DISCUSSION

Kamakshi et al[6] and Deogade et al[7] used magnets as attachments, but it is seen that magnets lose their magnetism over a period and thus push buttons were used in the cheek plumpers to increase the longevity of the check plumpers.[4] Quick short term results can be enhanced by using non –surgical injectable fillers like Botulinum toxin-A, but long term results are awaited.[8] Surgical procedures also carried out for sunken cheek but it leaves postsurgical scar. Due to this reason cheek plumper is better option for esthetics. But these may lead to increase weight of the prosthesis causes muscle fatigue due to constant strain acting on the muscles. For these reasons hollow cheek plumper is preferred in-order to reduce the weight of the prosthesis for long term success. The neutral-zone approach registers the neutral zone to determine the proper placement of teeth after resorption has taken place. Recording of tongue positions and movement receives close attention in the neutral-zone approach. Tongue of aged people showed no atrophic tendencies, which is not true of other tissues. It is advantageous to record the position of the tongue during sucking, swallowing, and movement.

CONCLUSION

The ability of the dentist to understand and recognize the problems of edentulous patients, to select the proper course of treatment required and reassure them is of great clinical importance. This case report describes a simple and economic prosthetic aid that not only offers esthetics but also

improves functional efficacy of the denture and the psychological profile of the patient.

CONFLICT OF INTEREST

No potential academic conflict of interest relevant to the above article was reported.

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