

Adaptation Of A Removable Partial Denture With Hawley's Appliance And Cheek Plumper – A Case Report

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INTRODUCTION

Esthetics play a very important role in a person's professional and social life. Any self-conscious patient will like to have a pleasant, esthetic smile. Diastema in the anterior region, and hollowing of cheeks due to loss of posterior teeth are some of the common esthetic complaints of the patient. Diastema can be defined as any space greater than 0.5 mm between the proximal surfaces of any two or more anterior teeth. Etiologic factors include the location of the insertion of the labial frenum, supernumerary teeth, missing adjacent teeth, peg laterals, anterior tongue posture, excessive arch width, relapse after orthodontics, mouth breathing, and tongue thrusting. These can be either corrected orthodontically or can be prosthetically restored. Long-span missing of the posterior teeth often leads to loss of support of the cheek tissues and eventually hollowing of the cheeks.

A different approach has been attempted in this case, where a removable partial denture along with a Hawley's appliance and cheek plumpers, has been fabricated and delivered to the patient to replace the missing posterior teeth, close the diastema and finally cheek plumpers were placed to bring about buccal fullness.

TECHNIQUE REPORT:

A 46-year-old female patient came to the Department of Prosthodontics at Thai Moogambigai Dental College and Hospital with a chief complaint of difficulty in chewing because of missing teeth in the upper and lower back teeth region, spacing of the front teeth, and hollowing of the cheeks. On intra-oral examination, she had spacing in the upper and lower anterior region with missing molars on her maxillary and mandibular arch. One of the major findings on extraoral examination was hollowing of the cheeks. The patient was also conscious of them and desired a prosthesis that would make her face look fuller and healthier. Considering the age and economic constraints of the patient and time conception of the orthodontic treatment, it was omitted. An adapted partial denture with Hawley's appliance and cheek Plumpers on the upper and lower arch was planned.

The technique followed:

A primary impression was made for the maxillary and mandibular arch using an irreversible hydrocolloid material.

Since this is a distal extension case in the lower arch, a secondary impression was made.

Occlusal rims were fabricated and the jaw relation record registration was done.

Articulation was done and semi-anatomic teeth were used for replacing the missing teeth.

A wax try-in was done for the patient to check the occlusion and phonetics.

Hawley's appliance for the upper and lower arch which consisted of a short labial bow with a clasp on the premolars was fabricated.

In the upper arch, after space closure, the Hawley's Appliance was removed and the partial denture was retained.

In the lower arch, the Hawley's Appliance was removed and a lower incisor was added onto the existing partial denture and delivered.

Cheek plumpers were planned, acrylized, and retained to the buccal flanges of the upper and lower prosthesis using magnets.

The removable partial dentures along with the cheek plumpers were then inserted and delivered to the patient.

DISCUSSION:

Facial esthetics is one of the most important factors when considering the treatment of malocclusion in a patient. In certain situations, age, economic factors, and the patient's unwillingness constrict the treatment modalities available. Also, due to the prolonged period of time for orthodontic treatment for the generalized spacing in the anterior region of the dental arches and considering all the other factors, a novel approach of using a removable prosthesis with Hawley's Appliance was planned.

A very important factor in determining facial esthetics is the cheeks due to their extreme visibility. The Form of the cheeks is determined by the support provided by the teeth, ridges, or dentures. Extraction of molars, and thinning of the tissue due to aging, can cause hollow cheeks. Slumped or hollow cheeks can add years to a person's age and hence have a detrimental effect on the psychology of the patient. While replacing missing teeth, it is important that the prosthesis not only replace the missing teeth but also restore the facial contours. A conventional cheek plumper prosthesis is a single-unit prosthesis with an extension near premolar–molar region which supports

the cheek. A major flaw of this design is the increased weight of the prosthesis. A detachable plumper prosthesis is thus more beneficial. In this case, the acrylized cheek bumpers were fabricated and magnets (obtained from Milestone Health Care of size 3 x 1.5mm with a composition of iron, boron, and iridium.) were attached.

In the present report, the placement of a Hawley's appliance along with cheek plumpers in a removable partial denture to close the diastema has been done. Initially, after insertion for a period of 3 months, the activation was done once every 15 days. After this, a review was done once every 3 months for one year. At every review appointment, the activation of the appliance was done to generate the orthodontic tipping force for the closure of the diastema. Following this, the Hawley's appliance was retained in the patient's mouth as a retainer. After a certain amount of space closure was achieved, the Hawley's appliance was removed and the cheek plumpers were attached.

Figure 2: Hawley's appliance

Figure 1: Pre-treatment