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CHEEK PLUMPERS- A REVIEW

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INTRODUCTION

The alteration of appearance is a normal consequence of aging. Tissues atrophy, and the folds and creases of the face become exaggerated. The loss of teeth intensifies the change.[1,2] The muscles are no longer properly supported, which results in abnormal facial expressions.[1]

KEYWORDS: Cheek Plumpers, Fixed Cheek Plumper, Removable Cheek Plumper, Magnet Retained, Press Stud, Die Pin and Sleev Plumpers.

Cheeks are an important part of facial aesthetics due to their extreme visibility.

The cheeks are supported on three sides by the following structures: the zygoma above, the mandible below, and the parotid gland overlying the masseter muscle in the posterior region.[1,2] Additional built-in support is provided by subcutaneous fat and buccal fat pads and this support is responsible for the soft, rounded contours of the cheeks in the lower third of the face.[2,3] The anterior parts of the cheeks are supported by the muscular framework converging into the modioli and are subject to more changes than the other three sides.[3] Further support is provided the cheeks by the posterior teeth and their supporting structures.[3]

With the loss of posterior teeth, the cheeks tend to collapse in varying degrees and move medially to meet the laterally expanding tongue.[3,4] The loss of anterior teeth and the subsequent loss of vertical dimension of occlusion further alter cheek contours.[3]

Losses of subcutaneous fat and elasticity of connective tissue produce the hollow cheeks seen in the aged.[3,4]

Loss of teeth can hasten facial aging and make aging more pronounced. Facial aging is largely a process of soft tissue stretching and dislocation.[4] Loss of teeth eventually results in resorption of the alveolar ridges.[4] Gradual and steady resorption of the alveolar bone causes a decrease in the tonicity of the facial muscles.[4] The fullness of the cheeks is primarily determined by the support provided by internal structures, i.e., teeth and ridges.[4,5] Loss of teeth and associated bone causes the cheeks to shrink inwards resulting in an unesthetic facial appearance.[5]

Age also reduces the concavity and pout of the upper lip and fattens the philtrum.[5] The nasolabial groove deepens which produces a sagging look in the middle third of the face, while atrophy of the subcutaneous and buccal pads of fat hollows out the cheeks.[5]

This can make a person appear more older and hence have a negative psychological impact on the patient.[5] It affects patient self-esteem and having a feeling of social exclusion.[5]

Prosthodontic rehabilitation does not mean to simply replace the missing teeth, but also re-store the facial support.[5,6]

The beginning of prosthodontic treatment should start with an evaluation of the total loss incurred by the patient due to aging.[6] The dentist, he should try to picture the facial contours as they appeared when the natural teeth and supporting structures were present.[6] Diagnostic casts provide records of the inner boundaries for denture construction, but the outer boundaries must be determined by external anatomic guides and landmarks found in the face.[6] In this way, realistic consideration can be given to restorative possibilities.[6]

A removable complete denture is the most common treatment modality to replace an edentulous maxillary or mandibular teeth.[6,7] Mere rehabilitation of missing teeth

is not sufficient as patient expects reestablishment of lost facial contours as well.[6,7] In most of the cases the denture flange fails to provide adequate support to the shrunken cheeks.[7] Hence incorporation of cheek plumper is done on the buccal flange area in order to improve the aesthetics and to reestablish facial contours.[7]

TYPES OF CHEEK PLUMPERS

Cheek plumper is of two types

1. Conventional or fixed cheek plumper
2. Modified or detachable/removable cheek plumper.

I. CONVENTIONAL OR FIXED CHEEK PLUMPER

This is the type of cheek plumper that is fixed or attached to the buccal fla.ge of the denture.[8] It is a single unit prosthesis with extensions on either side.[8] A small roll of wax is adapted onto the buccal flange of the trial denture and seated in the patient's mouth till satisfactory cheek contour is obtained.[8] Later the denture is flasked, dewaxed and processed in a conventional manner.[8]

The disadvantages associated with conventional or fixed cheek plumper are:

1. Bulky denture
2. Poor retention of the maxillary denture.
3. Difficult to place in patients with limited mouth opening.
4. It may interfere with masseter muscle and coronoid process of the mandible causing patient discomfort.
5. Frequent dislodgment of the upper denture.
6. Difficult to maintain oral hygiene.

This dislodgment occurs As The external contour of the cheek plumper is not contoured to function in harmony with muscular activity in the region of its incorporation. This leads to frequent dislodgement of denture during speech.[8] It may interfere with masseter muscle and coronoid process of the mandible.[8]

II. HOLLOW CHEEK PLUMPERS

As discussed earlier, the conventional cheek plumper has certain drawbacks. Hence improvements have been made in order to overcome the disadvantages posed by the conventional one.[8]

In this type, the extensions made on the buccal flange are made hollow during the time of processing of the denture.[8]

PROCEDURE

A roll of softened wax is adapted onto the buccal flange region of the denture during the try-in stage.[8] The adapted wax is then evaluated extra orally and modified accordingly till satisfactory cheek contour is obtained.[8] During the processing of the denture after the dewaxing stage lost salt technique can be used to make the cheek plumper hollow.[8] Literature has reported various other materials that can be used to make the cheek plumper hollow.[8] These materials include usage of salt, putty, SAP (super absorbent polymer), a mixture of pumice and plaster.[8]

When the processed denture is obtained, holes are drilled in the cheek plumper region and the material that is used during packing stage is retrieved from the cheek plumper region and resealed using auto polymerizing acrylic resin.[8]

The denture is then immersed in water to check for its hollow nature and to check if adequate seal is obtained.[8]

The advantages associated with this type of hollow non-detachable cheek plumper compared to conventional cheek plumper is that it becomes light weight and less bulky. Hence retention is improved.[8]

The disadvantage associated with this type of denture is that it cannot be used in patients with restricted mouth opening. In such patients detachable type of cheek plumper is to be used.[8]

III. DETACHABLE/REMOVABLE CHEEK PLUMPER

A modified version of cheek plumper was introduced in order to overcome the disadvantages associated with conventional cheek plumper.[10] A modified cheek plumper consists of a denture where the cheek plumper is detachable, it can be separately attached to the denture. It is not a single apiece unit and are processed separately.[10]

The advantages of detachable cheek plumpers are easy removal by the patient during various oral functions, easy maintenance of oral hygiene, economical, noninvasive, improved esthetics to the desired level, simple method of fabrication.[10]

In this type of cheek plumper various components were incorporated in the fabrication of detachable cheek plumper.[10] They include the following:

1. Use of magnets
2. Press stud attachment
3. Use of die pin and sleeve
4. Ball end and spring attachment

IV: MAGNET RETAINED CHEEK PLUMPER

There are several methods for the retention of cheek plumper.[10] Magnets are superior method of retention, as they do not hinder with cheek or cause irritation to the patient. Maintaining oral hygiene and reorienting the cheek plumper are relatively simple.[10]

Various types of magnets are incorporated during fabrication of cheek plumper. These include, cobalt-chromium-samarium magnets and neodymium-iron-boron magnets.[10]

PROCEDURE

Cheek plumper fabrication in this technique is carried out after the processing of the final denture.[10] Once the final denture is obtained a roll of softened wax is adapted onto the buccal flange area till satisfactory external cheek contour is obtained. the cheek plumpers are then separately processed, trimmed finished and polished.[10]

Magnets of specified dimensions are used. These magnets are secured onto the buccal flange area of the denture and onto the surface of the cheek plumper that comes in contact with the buccal flange area of the denture.[10]

Although magnets are an effective method for the retentiveness of the detachable cheek plumper they do have certain limitations.[10] Which is loss of magnetic strength over a period of time, most of the magnets prone to corrosion intra orally and they may damage the overall health of the oral environment due to its magnetic nature.[10]

V. DIE PIN AND SLEEVE RETAINED CHEEK PLUMPER

Another effective method to retain the detachable cheek plumper is the use of die pin and sleeve. Owing to the many disadvantages of the usage of magnets this is one of the superior methods.[9]

PROCEDURE

During the try-in stage of the denture a block of wax is adapted onto the buccal flange region of the trail denture till satisfactory cheek contours are obtained. this wax is then conventionally and separately processed using heat cured acrylic resin.[9] Two holes are drilled into the surface of the cheek plumper which comes in contact with the denture base and die pins and placed.[9] Similarly, space is created onto the cheek plumper for the placement of sleeve.[9] The die pins and the sleeve are then secured using autopolymerizing acrylic resin.[9] The angulations are properly checked so that no discrepancy is observed during the placement and removal of the cheek plumper.

VI. PRESS STUD ATTACHMENT

Press stud method has proven to be the other alternative for the fabrication of detachable cheek plumper.[11] This technique is employed as an alternative to the use of magnets as they tend to lose their magnetism over a period of time leading to treatment failure.[11]

PROCEDURE

The detachable cheek plumper is separately flasked and processed in a similar way as described earlier in the die pin and sleeve retained cheek plumper technique.[11] After the processed cheek plumper is obtained two holes are drilled on the buccal flange area of the denture and the intaglio surface of the cheek plumper.[11] The female component of the press stud attachment is secured onto the flange area on the denture and the male component is secured onto the intaglio surface of the cheek plumper with the aid of auto polymerizing acrylic resin.[11]

CONCLUSION

Every patient is unique, with unique anatomy and muscle function. The focus of the prostheses that influence esthetics and function should be to record the area of interest precisely.[1,2] Basic anatomy, physiology, and the patient's psychology play important roles in denture acceptance and use.[1] A cheek plumper is an additional prosthetic aid which improves the patient's facial esthetics by restoring the facial contour and improves their overall psychological well‑being.[1] Providing simple interventions, such as cheek plumpers, can be of great help in improving the overall facial appearance and self-confidence of older individuals, allowing them to socialize with confidence posttreatment.[2]

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