LIVING DENTURE – PRESENT AND FUTURE TREATMENT FOR EDENTULISM

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The success in addressing comfort and function, restoring an edentulous patient's appearance has received more attention in the modern prosthodontic literature.The development and use of an adequate functional procedure in prosthetic dentistry is the first step toward creating psychologic as well as physiologic comfort for our patients. When this has been accomplished, it reflects the final refinement of our prosthodontic service.

Key words: characterization, dentogenic, dynesthetic.

INTRODUCTION

The goal of new era dentistry is to maintain or improve the quality of life of the dental patients. This goal can be established by restoring the edentulous patients with complete denture. This implies that the demand for restoration of edentulous patients will remain high for the foreseeable future. Treatment challenges for such patients have traditionally been described as a combination of function, comfort, and aesthetics.[1,2]

The causes of edentulism are varied. Although age is a primary predictor of tooth loss, edentulism is not necessarily a part of the normal process of aging. Tooth loss varies widely between countries and is influenced by a variety of economic and social factors. Although edentulism is declining at a rate of about 1% per year in most industrialized countries, these statistics are countered by an increase in average life expectancy so that the overall number of edentulous patients is remaining stable or slightly increasing.[3]

Edentulism is a chronic disability, and many edentulous patients have difficulty performing essential tasks such as eating, speaking, and socializing. Some patients may experience increased social and psychological problems in coping with these impairments.[4] Conventional complete denture prosthesis can restore esthetics and function to some extent but does not provide them complete satisfaction as with their natural teeth.

In contrast to the recent success in addressing comfort and function, restoring an edentulous patient's appearance has received little attention in the modern prosthodontic literature.[5]

The objective of this case report is to demonstrate the technique that how we can fabricate a normal complete denture into a naturally appearing living denture and also to use some anatomical undercut into a favourable undercuts for retention. In this case report characterization of complete denture were done, The purpose of characterization is to enhance the appearance of anterior teeth in complete dentures so that the person will have attractive face and natural pleasing smile. Numerous methods have been devised for the evaluation of reliable natural appearance of complete denture as well as compensation for severe undercuts.[6]

The future success of edentulous patient care is dependent on the development of shared goals for both the edentulous patient and the clinical team.This requires careful elucidation of a goal and strategies to make complete dentures appear a natural dentition which boosts self-confidence and contributes positively to their overall appearance.[7]It has been reported that excellent dental appearance is perceived to relate positively to personality and char-

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acter.[8] This is accomplished by refinement of our prosthodontic service with the help of dentogenic theory of esthetics. This concept is based on the interpretation of three vital factors; sex, personality, and age of the patient properly into the denture.[9]

The dentogenic restoration is designed to enhance the naturalness of appearance in the individual for whom it is made by its complementary contribution to the beauty, charm, character, or dignity observed in a fully expressive smile or in earnest conversation.[10]

CLINICAL REPORTS

Case I:

A 65 year old male patient reported to the Department of Prosthodontics, ITS-Centre For Dental Studies & Research, Muradnagar, Ghaziabad, with chief complaint of missing upper and lower teeth for the last 7 months. He was a chronic smoker for the last 40 years.

Extraoral examination revealed ovoid facial form, convex profile, bulging appearance of the upper lip, dark complexion, and dark brown colour of the hair. On intraoral examination, it was found that the maxillary and mandibular ridges were completely edentulous (Atwood's Order III classification). The maxillary ridge was protruding creating a moderate undercut in the anterior region. There was evidence of stomatitis nicotina palatini and dark irregular pigmentation of mucosa over the anterior portion of both the ridges. (Fig-1).

Treatment Planning

On assessing the case clinically, radiographically and surveying the diagnostic casts, patient was advised to go for alveoloplasty in the maxillary anterior region. But as the patient was not willing to undergo any surgical intervention, it was decided to rehabilitate the case prosthodontically, through a modified gum-fit complete denture, thereby providing the patient with an esthetically and functionally pleasing prosthesis.

Case II:

A 60 year old female patient reported to the Department of Prosthodontics, ITS-CDSR, Muradnagar, Ghaziabad, with chief complaint of inability to chew food properly due to missing upper and lower teeth for the last 5 months. She also had a habit of chewing pan for the last 20 years, due to which she had lost all her natural teeth. Now she is willing for an artificial set of teeth which gives her the same appearance that she had with her natural teeth.

Treatment Planning

On assessing the case clinically and radiographically, it was decided to go for a conventional complete denture with characterisation of the prosthesis, as mentioned in the procedure given below.

Procedure

1. Maxillary and mandibular intraoral photographs were taken.
2. Primary impression of maxillary and mandibular arches with impression compound were made.
3. Diagnostic casts was prepared and surveying done.
4. Undercuts in the maxillary anterior region was decided to be used for retention purpose.
5. Border moulding with green stick and final impression with zinc oxide eugenol were made to prepare master cast.
6. Maxillary denture base for occlusal rim by keeping window in the maxillary anterior region was fabricated, so that after placing maxillary rim face should not look as bulging appearance.
7. Jaw relations were recorded.
8. Try-in done after teeth arrangement.
9. Flasking and curing was done in normal conventional manner, with clear heat cure acrylic resin.



Fig. 1a

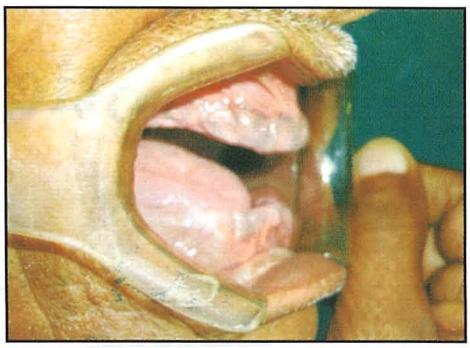


Fig. 1b

Fig.1a & b. Pre-operative extraoral and intraoral view of the undercuts and pigmented gingiva.

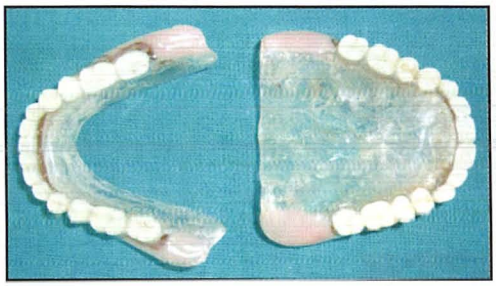


Fig.2 Polished and finished dentures after characterization.

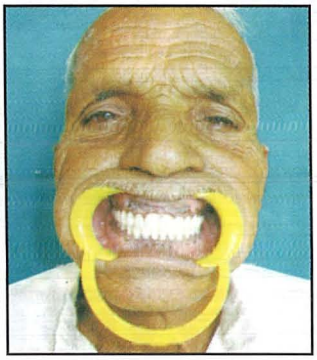


Fig.3 Post-operative view showing widow and characterised denture.



Fig. 4 Pre-operative view.

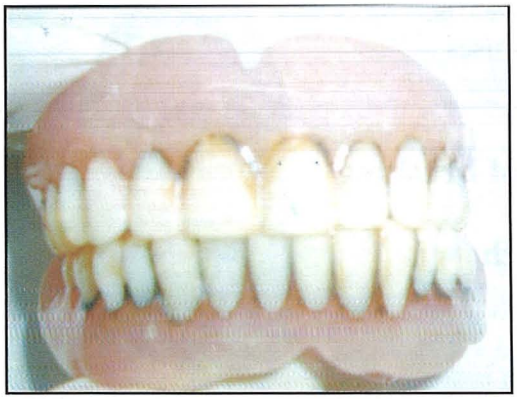


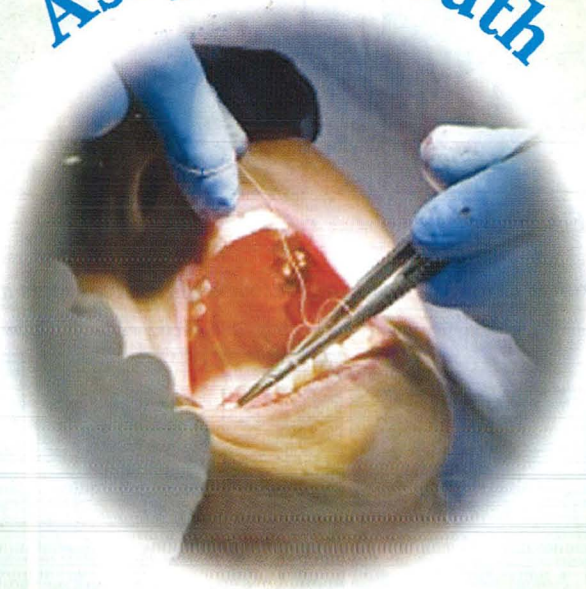
Fig.5 Characterised denture after finishing and polishing.



Fig.6 Post operative frontal view of the patient.

10. Trimming and polishing of complete denture prosthesis was undertaken along with window generated in maxillary anterior region and 26 gauge orthodontic wire was adapted with clear self sure acrylic resin to give further strength and prevent breakage of flange portion.

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11. Characterisation technique: To achieve harmony between gums and teeth in complete denture prosthesis.

    a. Patient intraoral photograph were taken to match the color with the patient's mucosa.

    b. Fabric acrylic colors (Fevicryl) were mixed with autopolymerising acrylic resin polymer powder and then matched with the photograph taken. After confirming the shade, it was mixed with monomer and applied over the grooves generated near the cervical and interdental papilla region of acrylic denture.

    c. Pink shade was applied over the rest of the labial surface and the final prosthesis was finished and polished (Fig 2).

12. Finally complete denture were inserted in patient's mouth, and necessary adjustments were made (Fig. 3).

13. The patient was given post insertion instructions for maintainance of hygine of both denture and health of oral cavity.

14. The post insertion follow-up and patient care were carried out at the prescribed intervals of time, which revealed that the patient was thoroughly satisfied and extremely comfortable with the functioning and esthetics of the prosthesis. The patients didn't complain of complication such as looseness of denture, inflammation and bulging of upper lip due to the denture.

15. Similar technique were followed in second case for giving natural appearance to the denture. Pre and post operative photographs are shown in (Fig 1, 5, 6).

DISCUSSION

In this era of cosmetic dentistry, dentures restoring a natural appearance leads to increased patient confidence and ease in social interactions. Messages of oral health, power and attractiveness are often linked to our facial appearance and our teeth play a tremendous role in facial appearnce.

The method of characterisation and the modification in this gum-fit denture, types of colouring agents used in this technique play a major role to give natural look for this complete denture prosthesis. The principle objective of a characterised prosthesis is to restore esthetics along with restoration of function and speech. This is knowledge of nature's subtleties in color, form, and movement which can be recreated with conscientious vision.

This is the esthetic or dentogenic phase. The dentogenic theory of esthetics is a basic esthetic concept for all phases of dentistry where appearance is a factor. However, its success is dependent on good function. In fact, function and esthetics are inseparable and interdependent factors of prosthodontics procedure and success.[9]Many studies were conducted in the form of questionnaire and close-up photographs to determine preference for tooth size, shape, proportion, an arrangement symmetry. It was concluded that most patients preferred natural appearance.[5]

To apply the dynesthetic techniques in prosthodontics requires a knowledge of the dentogenic concept. The selection of artificial teeth, their subsequent sculpturing, the individual and detailed positions of these teeth, and the colour and contours of the denture base are all part of the dynesthetic techniques and cannot be done in a comprehensive manner without reference to the patients sex, personality and age as primary factors.[9] In the word dynesthetic, we use the meaning of dynamic as applied to the fine arts and producing the effect of movements or progression. This dynamic value has been described as marking the difference between an artefact and a work of art These considerations are found to be useful in prosthodontics.

The dynesthetic techniques are concerned with the three important divisions of denture fabrication: (1) the tooth, (2) its position, and (3) its matrix (visible denture base). Dynesthetic techniques are not to be confused with dentogenic procedure. Dentogenic procedures are the application by the dentist of these rules in the sequence of esthetic planning and are applied according to the sex, personality, and age considerations. Therefore, it is important at this time to make the delineation between the dynesthetic accomplishments of the dental technician in his laboratory procedure and the final dentogenic restoration as can only he created by a dentist.[10]

In the present case, this method was chosen on the basis of clinical, radiographic and desires of the patient. The surgical intervention to remove the irregularities and the undercut were not undertaken as patient was not willing for any surgical intervention. Thus, the modality through implant placement was also ruled out for the same reason. Therefore, it was decided to give a window gum-fit denture in the anterior region, thereby reducing the labial fullness also.

A portion of the denture base was cut out of the fabricated prosthesis, leaving the border and 2 mm of acrylic resin flange behind (replacing the marginal gingiva). This window was an alternative for the surgical intervention for irregularity and undercuts in the anterior region.

The prevention of edentulism is a primary aspect of any broad-based contemporary strategy in the global management of edentulism.[7]

The concept of oral rehabilitation for geriatric patient with reduced dexterity should present simple and adaptable solutions. Procedure those demand great deal of manual dexterity, long and continuous appointments should be avoided. Colour characterisation through the above described method provides a comprehensive treatment concept for such patients. Insertion, removal and hygiene care and maintenances of such dentures can be carried out easily.

CONCLUSION

In addition to the conventional use of complete denture prosthesis, it is interesting to discover various techniques so that it potentiate life to complete denture. This simple technique is designed to enhance the naturalness of appearance in the individual. This is the challenge present in prosthetic dentistry, affording the opportunity for every prosthodontist to grow in the knowledge of nature's subtelities in colour, form, and movement that he may fearlessly recreate with conscientious vision. Thereby he can establish himself as an artist indispensable to the psychologic as well as to the physiologic welfare of mankind.

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