Case Report

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PLANNING AESTHETICS IN IMMEDIATE DENTURE – FACT OR FICTION!

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ABSTRACT

Immediate Complete Denture preserves a person from social stigma of being without teeth. But, a major disadvantage is the inability to review teeth arrangement and esthetics before processing and following denture insertion. This innovative technique facilitated enhanced facial improvement by increasing the maxillary lip fullness in an Immediate Complete Denture patient with pre-existing maxillary anterior fixed partial denture. Intra-oral examination in a 65 year old patient, unveiled maxillary anterior fixed partial denture and completely edentulous mandibular arch. Placement of the mandibular rim showed marked prognathism of the mandibular lip in comparison to the maxillary lip. This discrepancy was rectified by a simplified wax layering approach. Sheets of modelling wax were layered over the surface of the maxillary fixed partial denture and remaining natural teeth to obtain a satisfactory extra-oral appearance. A stainless steel labial bow was fabricated on the cast and the contoured modelling wax was transferred and incorporated in the anterior portion of the bow. This assembly was tried intra-orally and esthetics was re-confirmed. Modification done in the fabrication of Immediate Complete Denture prosthesis made a remarkable enhancement in the facial appearance of a patient whose exact contour of the maxillary anterior teeth could not be simulated. This clinical technique can be done in Immediate Complete Denture patients with reduced lip support to achieve esthetic patient profile and to redress mild-to-moderate maxilla-mandibular discrepancies associated with ageing.

KEYWORDS: Immediate complete denture; esthetics; lip fullness; extra – oral profile; dental prosthesis

INTRODUCTION

Achieving aesthetics is a foremost objective in complete denture fabrication. The over-all appearance of the denture is important, but only to the extent that it contributes to an aesthetic appearance and function of the face and lips. It is essential to identify the patients' expectations and to explain to him/her the limitations and possibilities of fabrication of aesthetic and functional satisfactory restorations.[1] Immediate complete dentures (ICD) are among such taxing restorations for the dentists. It is an accepted method of restoration for the patient whose last remaining teeth are to be removed.[2-4] Extraction of the last remaining teeth and replacement with complete dentures has many consequences since the patient has to adapt to a new situation with respect to speech, chewing and swallowing.[5] ICD has many rewarding features as opposed to conventional complete dentures. From the patient's point of view, chief among these advantages is the preservation of the person's appearance and social mobility. Loss of such mobility often results from the absence of anterior teeth.[6] Yet, a major downside in the fabrication of ICD is the absence of the try-in appointment and hence, aesthetic outcomes of final prosthesis cannot be foreseeable. The position of the natural anterior teeth is not always compatible with aesthetics, and it may not be desirable aesthetically to duplicate these position for every

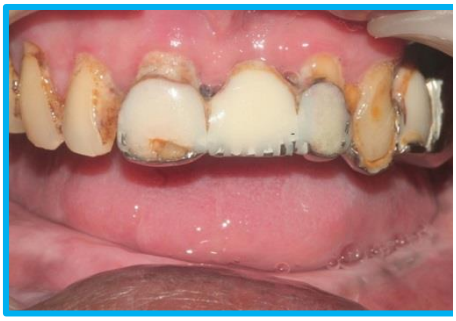

Fig. 1: Pre-treatment intra-oral frontal view

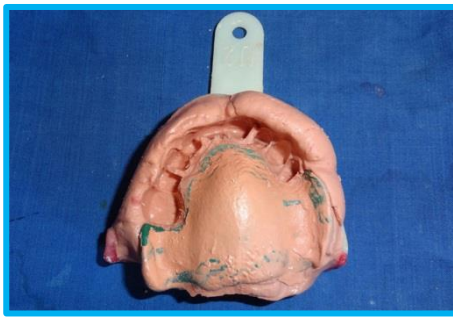

Fig. 2: Maxillary pick-up impression

Fig. 3: Extra-oral profile before mandibular rim placement

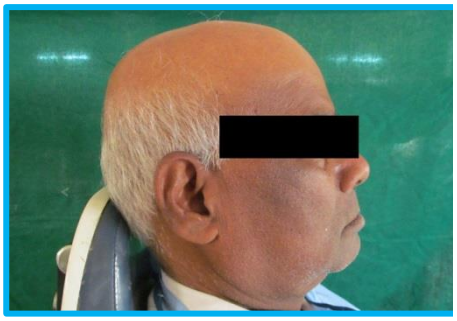

Fig. 4: Extra-oral profile after mandibular rim placement

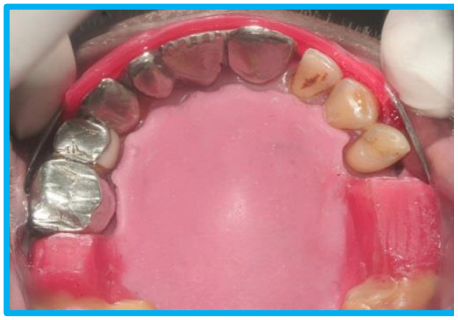

Fig. 5: Intra-oral placement of assembly-occlusal view

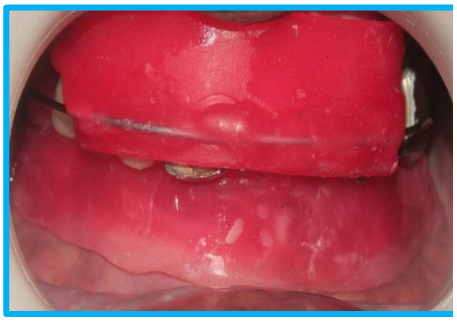

Fig. 6: Intra-oral placement of assembly-frontal view

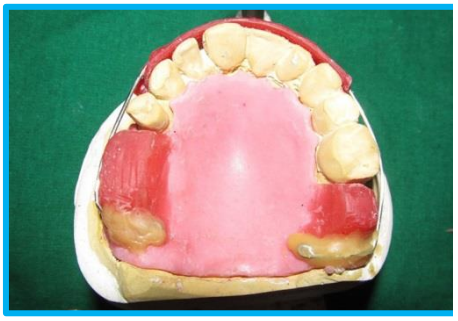

Fig. 7: Labial bow assembly on the cast

Fig. 8: Placement of mouth temperature wax at the borders

patient. This technique facilitated enhanced facial improvement by increasing the maxillary lip fullness in a patient receiving ICD with pre-existing maxillary anterior fixed partial denture.

CASE REPORT

A 65 year-old male patient reported with a completely edentulous mandibular arch and partially edentulous maxillary arch. Intra-oral examination unveiled presence of right lateral incisor, canine and first pre-molar, and an existing maxillary fixed partial denture supported by the right central incisor, left lateral incisor, left canine and left first molar. The remaining natural teeth and abutments had poor prognosis due to mobility and positive percussion test (Fig. 1). Treatment plan framed was maxillary immediate and mandibular conventional complete dentures respectively. Preliminary impressions were made followed by maxillary pick-up impression (Fig. 2) and mandibular definitive impression. Casts wer

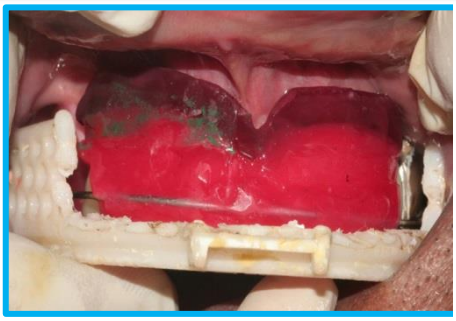

Fig. 9: Modified stock tray

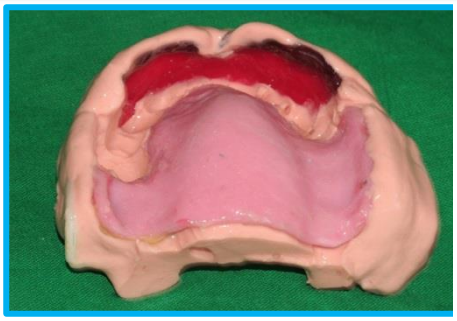

Fig. 10: Set impression included the assembly and border moulded material

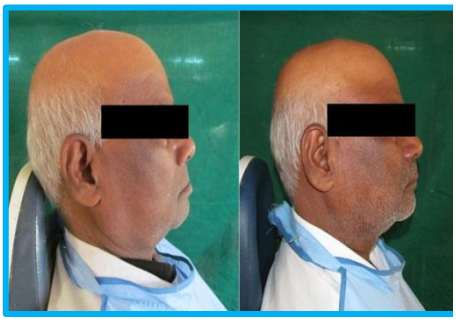

Fig. 11: Pre- and post- treatment extra-oral profile comparison

fabricated using Type III Gypsum product (VIP). Maxillary and mandibular rims were constructed. During jaw relation procedure, placement of the mandibular rim displayed remarkable prognathism of the mandibular lip in comparison to the maxillary lip (Fig. 3 & Fig. 4). This soft tissue discrepancy was corrected by a simplified, yet an innovative technique by the use of modelling wax in the anterior segment. Modelling wax (MAARC) was softened and layered over the vaseline applied surface of the maxillary fixed partial denture and remaining natural teeth. Mandibular occlusal rim was placed and patients' profile was evaluated. This wax-layering approach was repeated until satisfactory extra-oral appearance was finalized. After establishing acceptable extra-oral profile, a 19 gauge stainless steel labial bow was fabricated on the cast and the labial wax was transferred and incorporated in the anterior portion of the bow. The bow was in contact with the buccal surface of the posterior occlusal rim and attached distally with sticky wax (MAARC) to the denture base. This assembly (labial bow, labial wax, denture base and posterior occlusal rim) was placed intra-orally (Fig. 5, Fig. 6 & Fig. 7) and patients' profile and extra-oral appearance were re-examined. The patients' satisfaction was confirmed. The labial wax was then made 2 mm short of the vestibular depth to provide room for the border moulding material. Mouth temperature wax (MP Sai) was softened and placed over the borders (Fig. 8). Patient was instructed to perform functional movements of the lip and cheeks. A stock plastic perforated tray was selected and modified (Fig. 9). Irreversible hydrocolloid was loaded on-to the tray as well as syringed over the assembly. The set impression included the assembly and border moulded material (Fig. 10). Impression was poured with Gypsum product Type-III and definitive cast was fabricated. The maxillary anterior fixed partial denture and the teeth to be extracted were marked and knocked out on the definitive cast. The wax rim in the anterior region was extended till the bow labially. Teeth arrangement, fabrication of stent, denture processing were done in conventional manner. Extraction of remaining teeth and the fixed bridge was done surgically followed by denture insertion procedure and recall appointments. Fig. 11 illustrates the patients' satisfying extra-oral appearance.

DISCUSSION

From the patients' view, the preservation of the appearance is of utmost importance. The loss of the remaining natural teeth is a major and irreversible procedure for the patient. ICD is a prosthesis that is fabricated for placement immediately following the removal of remaining natural teeth.[7] The level of anxiety with which people face the prospect of losing all their teeth and having to rely on complete denture, is unlimited as recorded by Todd and Lader.[8] An immediate denture requires an indeterminate amount of adjustments. More often, ICD works out as a transitional denture due to aesthetic failure and needs a succeeding denture after 3-6 months. These adjustment appointments can become prolonged and stressful for both dentist and patient. In immediate denture construction,

another hindrance is the lack of opportunity to observe the anterior teeth at the try-in appointment; therefore, the aesthetic results cannot be predicted until denture insertion procedure.[9] Many a times, the anterior teeth are arranged to simulate the patients' natural teeth arrangement. Thereby, minimizing the post-treatment difference in the facial appearance of the patient. In the present case, the exact contour of the anterior teeth was absent due to pre-existing fixed partial denture. Adding on to this was a state of long-standing mandibular edentulism and residual ridge resorption pattern which led to mandibular prognathism and prominent chin. Conversely to the conventional ICD procedure, this modified method of establishing labial esthetics by using wax strengthened with labial bow made a pronounced enhancement in the patient's facial appearance. This technique is suggested in ICD patients with diminished lip support and to redress mild-to-moderate maxillo-mandibular jaw relation discrepancies associated with ageing. Hence, the facial appearance following mandibular rim placement, resulted in marked facial difference. Increasing the maxillary lip fullness and providing labial proclination of maxillary artificial teeth fruited in satisfactory patient acceptance.

CONCLUSION

Conversely to the conventional ICD procedure, this modified method of establishing labial esthetics by using wax strengthened with labial bow made a pronounced enhancement in the patient's facial appearance. This technique is suggested in ICD patients with diminished lip support and to redress mild-to-moderate maxillo-mandibular jaw relation discrepancies associated with ageing..

CONFLICT OF INTEREST & SOURCE OF FUNDING

The author declares that there is no source of funding and there is no conflict of interest among all authors.

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