

Bridge The Gap Between Dentulism And Edentulism - A Case Report

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Abstract: Many years ago the dental profession recognized and accepted patients' wish and need to avoid an edentulous period, which resulted in fabrication of dentures that can be placed in the patient's mouth immediately following the removal of the last natural teeth, mainly anterior teeth. Today dentists are expected to construct immediate dentures, and patients ask for them increasingly, mainly for aesthetic and psychological reasons. This article presents a case report of a female patient with periodontally compromised teeth, who was successfully rehabilitated with an immediate maxillary and mandibular complete denture.

Keywords: aesthetics, immediate denture, interim prosthesis, vertical dimension

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I. Introduction

For many people, the loss of natural teeth is a sign of aging and cannot be psychologically accepted. However, even in young patients, oral environment sometimes deteriorates to a point where remaining teeth must be removed. Physiologic and mental adjustments to an edentulous condition often can be eased by immediate replacement of lost natural teeth.¹ To prevent the edentulous period, an immediate denture is a versatile treatment option. "An immediate denture is any fixed or removable dental prosthesis fabricated for placement immediately following the removal of a natural tooth/teeth." - GPT 9. It acts as a splint over the surgical site and protects the extraction site from trauma, prevents bleeding and reduces alveolar ridge resorption. As a result, smooth and well-formed ridges can be obtained. It also facilitates phonetics and nutrition during the healing period.² However, immediate dentures are considered as an interim prosthesis. They may require relining or a new set of dentures may need to be fabricated within a short period of time.³

II. Case Report

A 65 year old female patient reported to the Department of Prosthodontics, D.Y. Patil Deemed To Be University, School Of Dentistry, Nerul, Navi Mumbai with a chief complaint of mobile teeth and few missing teeth since 3-4 years and requested for replacement of the same. The teeth were lost due to periodontal disease. The patient had no relevant medical history. She had a habit of chewing betel nut 5-6 times a day since 10 years. On intraoral examination, teeth missing were 21, 22, 23, 24, 26, 27, 31, 36, 37, 41, 42, 46 and 47. The remaining teeth present were malaligned, mesially tilted, attrited and periodontally compromised. Abrasion was seen on the premolars and molars. The maxillary anterior teeth were proclined resulting in incompetent lips. There was generalized Class III gingival recession too with severely stained calculus present around the teeth (Fig. 1). Grade II mobility was seen in 16, 17 and 18. On radiographic examination, severe bone loss was seen around all the teeth (Fig. 2). Hence, the remaining teeth had poor prognosis and were not salvageable and thus extraction was planned of the same. However, the patient was adamant that she could not be edentulous for any length of time, however brief, as she was a vegetable vendor and her employment required meeting the public everyday. Therefore, to prevent the patient from being edentulous, immediate complete dentures for the maxillary and mandibular arches was decided as the treatment of choice.



Fig. 1: Pre-operative intraoral view in occlusion

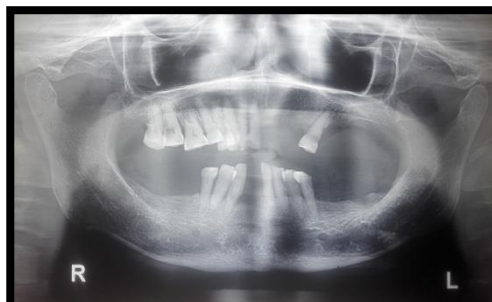


Fig. 2: Pre-operative orthopantomogram

Diagnostic impressions of the maxillary and mandibular arches were made in irreversible hydrocolloid (Alginate) and the casts were poured in Type IV dental stone to prevent the teeth on the cast from breaking (Fig. 3). The patient was first asked to extract the maxillary molars that were Grade II mobile. Undercuts were blocked out and modeling wax was used as the spacer material. Custom trays were fabricated on the casts with adequate relief on the anterior teeth and the premolars for the irreversible hydrocolloid. Oral tissues were allowed to heal before the impressions were made. Border molding was done with low fusing impression compound, perforations were made in the trays and well-extended final impressions were made in irreversible hydrocolloid impression material (Alginate) (Fig. 4). The casts were poured in Type IV dental stone (Fig. 5). Temporary record bases were fabricated in self cure acrylic resin and occlusal wax rims were made. Jaw relation was recorded (Fig. 6). The vertical dimension was determined with the help of Niswonger's method, esthetics and phonetics. Centric relation record was made with the help of static check bite method. A facebow record was taken to orient the maxillary cast on the articulator. The casts were then mounted on the articulator. Semi-anatomic, A2 shade, cross linked acrylic teeth, narrower than the existing teeth, were selected to avoid pressure on the posterior ridges. The missing anterior and posterior teeth were arranged and the try-in was done to verify the occlusal plane and vertical and centric relation records (Fig. 7). The existing anterior teeth were unaesthetic and disproportionate with the patient's face. The anterior teeth were selected to suit the patient's sex, personality and age. The teeth were scrapped off from the cast and the anterior arrangement was completed. Flasking, packing and curing was done in the conventional manner. After proper finishing and polishing, the dentures were stored in a germicidal solution of 0.2% chlorhexidine until insertion.



Fig. 3: Diagnostic casts



Fig. 4: Final impressions



Fig. 5: Master casts



Fig. 6: Jaw relation



Fig. 7: Try-in

Pre-surgical medications were prescribed to the patient one day prior to surgery. The maxillary and mandibular anterior teeth and premolars were extracted with minimum trauma and sutures were given (Fig. 8). After the surgical procedure was completed, the patient was asked to wait for 45 minutes to an hour for the bleeding to arrest. The dentures were then inserted one at a time and evaluated for retention and stability. After placing both the dentures, occlusion was checked and interferences were removed by selective grinding (Figs. 9, 10). Post-operative instructions were given to the patient. The patient was advised to apply cold packs for the next one hour. She was told to wear the denture for the next 24 hours without removing it and to avoid expectoration. She was also advised to follow a liquid diet till the next appointment and to continue the medications. The patient was recalled after 24 hours; dentures were removed, cleaned, and kept in 0.2% chlorhexidine. The tissues were evaluated for any irritation and pain; required modifications in the dentures were carried out. Tissue surfaces of the oral cavity were irrigated with 0.2% chlorhexidine mouthwash. The patient was instructed to clean the denture after each meal. After 1 week, the patient was recalled and the sutures were removed. The patient was kept under regular follow-up. The denture was relined with soft liner at regular intervals. After 5 months, the patient was recalled for evaluation. Dentures had poor retention and stability as healing progressed; therefore, it was decided to fabricate a new set of complete dentures. Astringent gum massage was prescribed to the patient for tightening of the tissues. When all soft and hard tissues were in healthy condition, the procedure for conventional complete denture was started and a new set of maxillary and mandibular dentures was fabricated. The dentures were inserted in the patient's mouth and checked for retention, stability, comfort, and occlusion. The patient was happy and satisfied with the outcome of the denture.

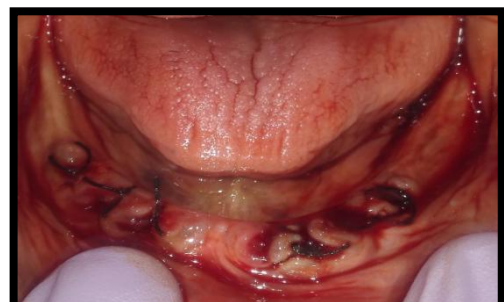


Fig. 8: Sutures given post-extraction



Fig. 9: Post-operative intraoral view in occlusion



Fig. 10: Pre- and post-operative extraoral view

III. Discussion

In line with present-day trends, “instant dentures” are a necessity to prevent distress, anxiety and embarrassment to many people. Most people do not object strenuously to removal of teeth if they receive a prosthesis at the time of extraction.⁴ One of the most important esthetic advantage of immediate dentures is that the patients are spared the inconvenience and distress of being seen in public without teeth.⁵ This treatment is warranted for many patients because they do not have to meet the family in an edentulous state, and they are in a position to carry on social and business activities without embarrassment. In many instances, it is a financial necessity for the patient to continue his or her business with a minimum of interruption. The immediate denture also acts as a bandage or splint to help control bleeding, to protect against trauma from the tongue, food, or teeth if present in the opposing arch, and to keep mouth fluids and particles of food from entering the tooth sockets. The splinting and bandage action of the denture promotes rapid healing as it protects the blood clot. The functional stimulation to the tissues from an immediate denture creates a smoothly-rounded bony ridge formation and a thick, resilient mucosal covering which would not occur without the stimulation. Patients seem to function in speech, deglutition and mastication much sooner than if the lips, tongue and cheeks have gone unsupported even for a short period of time. There is less difficulty in making the polished surface of the dentures compatible with the surrounding structures. The tongue, lips and cheeks have not altered their positions because of the lack of tooth support.⁶ The surgical phase is not prolonged. With the removal of all the remaining teeth at one appointment, the patient is not subjected to the mental trauma and apprehension of several surgical procedures. The vertical dimension of occlusion exhibited by the natural teeth can be maintained. The patient’s facial appearance is only slightly altered as it prevents collapse of facial musculature. It provides better transition from the dentulous to the edentulous state and the patients adapt to the dentures faster and more easily. However, immediate dentures require an indeterminate amount of adjustments. These adjustment appointments can become prolonged and stressful for both dentist and patient. It acts as a transitional denture and needs a succeeding denture after 3-6 months.⁷

IV. Conclusion

In clinical situations where indicated, an immediate denture is often preferable to the conventional complete denture procedure. It not only eliminates some of the undesirable psychologic reactions to the loss of natural teeth, but it provides a more acceptable biologic transition from the dentulous to the edentulous state. It is a treatment option for the patient who seeks for complete replacement of teeth but not willing to go for complete edentulousness. Immediate denture service is the result of the cooperation of the patient, the dentist,

the oral surgeon and the dental laboratory technician. Regular follow-up and care is essential for the success of an immediate denture.

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