Immediate Complete Upper Denture in a Patient with Preserved Occlusal Vertical Dimension: A Case Report

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ABSTRACT
In this period of time where high value is placed on aesthetic, immediate replacement of the teeth is a desirable option for patients that require extraction of all the remaining teeth in the upper or lower jaw. This article presents a process of using immediate upper complete denture to manage a busy and socially active elderly patient who cannot tolerate a state of edentulism without replacement, but had a failed (twelve-unit PFM) upper fixed denture. The fabrication of the denture was done in two appointments and the patient was satisfied with the outcome of the treatment.

Keywords: Complete upper denture, Immediate denture, occlusal vertical dimension

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INTRODUCTION

In this period of time where high value is placed on aesthetic, every individual wants to look good and confident.[1] The teeth play important roles in the maintenance of a positive self-appearance,[2] and loss of teeth may significantly affect psychological and social well-being of an individual. So, when there is need for extraction of one or more teeth especially anterior teeth due to advanced periodontal disease, trauma, and failed endodontic treatment, immediate replacement of the teeth is a viable option to instantly restore aesthetic and build confidence in a patient.[3] Conventionally, after extraction of teeth, patient has to wait for few weeks depending on the number of teeth extracted for adequate healing of the socket before placement of denture to replace the missing teeth.[3,4] Some patients because of the nature of their job or position in the society, however, cannot wait for such a long period without natural or artificial teeth. In such cases immediate denture is indicated.[5] An immediate denture may be a removable partial or complete denture fabricated for placement immediately after removal of natural teeth.[6] It eliminates the period of edentulousness and support patient who cannot

do without teeth in their mouth to go back to their business.[3,5] Though, patient with altered occlusal vertical dimension (OVD) or deranged occlusion may present a major challenge in fabrication of immediate complete denture, with presence of a maintained occlusal vertical dimension, the choice of immediate complete denture provides a less demanding, immediate aesthetics, and emotional support to the patient.

This study presents a case of an anxious executive officer who presented with a failed twelve-unit maxillary bridge that was managed with an immediate upper complete denture. The immediate upper complete denture was fabricated and fitted for the patient in two appointments and the patient was able to return to his business and social activity 48 hours after extraction of the teeth. The patient was satisfied with the outcome of the treatment.

Case Report

An 82-year-old, anxious, male business man presented with upper fixed partial denture (FPD) replacing teeth 16,15,14,13,12,11, 21,22,23,24,25,26 and lower fixed (implant and teeth retained) restorations of 31,32, 33,34,35,36, 41,42, 43, 44, 45. Clinical assessment revealed mobility of the entire upper fixed prosthesis but more on the right side. Also there was generalized inflammation of the maxillary alveolar mucosa with marked swelling in the region of 15,16,23,25 and 26. The patient was a known hypertensive patient but with no previous history of diabetes. Radiographic evaluation with OPG (Figure 1) revealed upper twelve-unit fixed denture with the abutment teeth 16,15,14,13,23, 24 25 at varying degree of resorption. And there was gross bone loss of implant retained crown of 45,46, mild bone loss of implant supported fixed denture replacing 34,35; post retained crown of 33, 43 and 44. The four-unit bridge for the replacement of lower central incisors are retained by crowns on 32 and 42

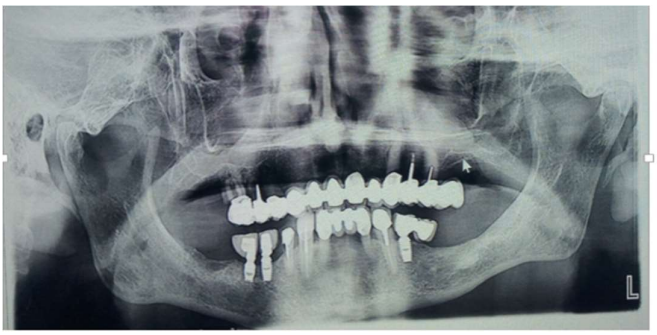

Figure 1: OPG of the patient before removal of failed maxillary bridge

The extraction of all maxillary teeth (roots) was indicated. The patient declines the option of implant supported fixed maxillary complete upper denture because of his age and stress of surgery. Due to the patient's business and social status (Director of a company), an immediate removable complete denture was planned. During clinical evaluation of the patient, it was observed that the vertical jaw relationship was appropriate, so it was used in the fabrication of the denture.

Impression of upper and lower arch were made using irreversible hydrocolloid (Alginoplast, Heraeus Kulzer GmbH, Wehrheim, Germany) and wax check bite was used to record inter-occlusal record. Stone casts were obtained (using type IV dental stone) from the upper and lower alginate impressions. The casts were mounted on a mean value articulator using the wax inter-occlusal record (Figure 2).

The teeth on the upper cast were removed at the level of the gingival margin and 2mm of the cast from the attached gingiva was removed to compensate for the compression of the socket after extraction and soft tissue shrinkage after inflammatory reaction has resolved. Record block was fabricated on the upper cast with modelling wax and artificial teeth were set up on the upper cast in centric occlusion with the lower teeth (Figure 3). The upper complete denture was finished and polished in a conventional manner (Figure 4).

After fabrication of the prosthesis, the patient was recalled and the failed maxillary full mouth FPD spanning upper right first molar to upper left first molar was removed with upper anterior extraction forceps (Fig. 5a and b). The retained roots were then extracted as atraumatic as possible. Then an OPG was taken to confirm complete removal of retained roots (Figure 6). The immediate complete denture was fitted for the patient immediately (Figure 7), and post insertion instructions were given to the patient.

Figure 2: Upper and lower casts mounted on articulator with inter-occlusal bite record

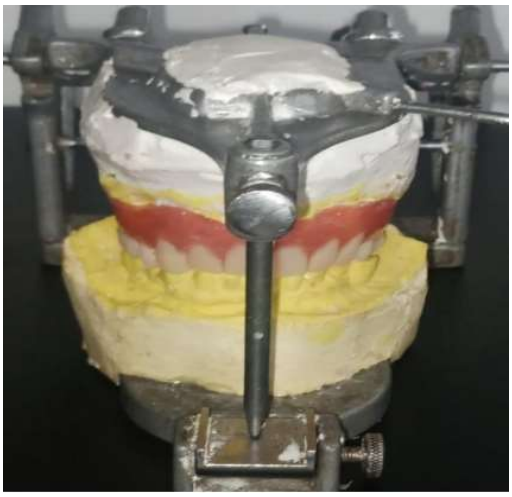

Figure 3: Teeth set up on mean value articulator

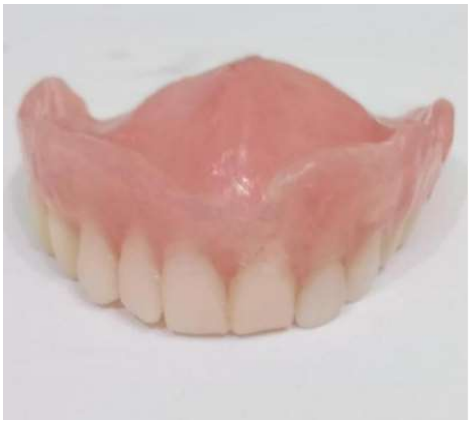

Figure 4: Finished upper immediate complete denture

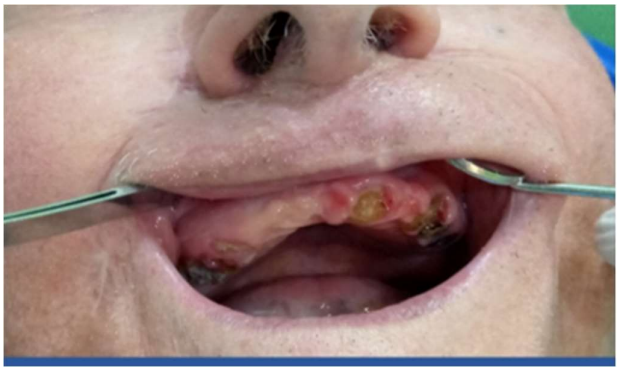

Figure 5a: Intra-oral examination after removal of failed twelve unit maxillary bridge

Figure 5b: Removed twelve-unit Bridge

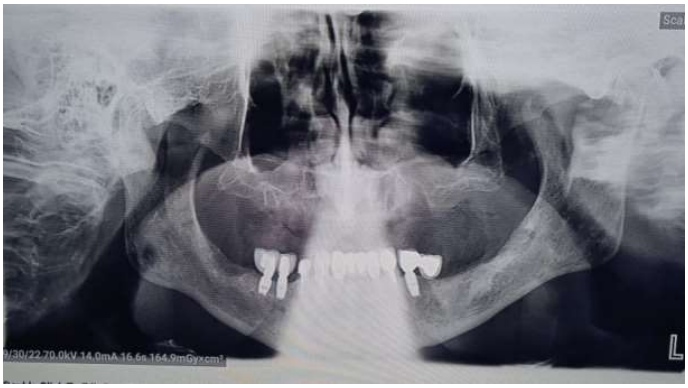

Figure 6: OPG after extraction of upper teeth

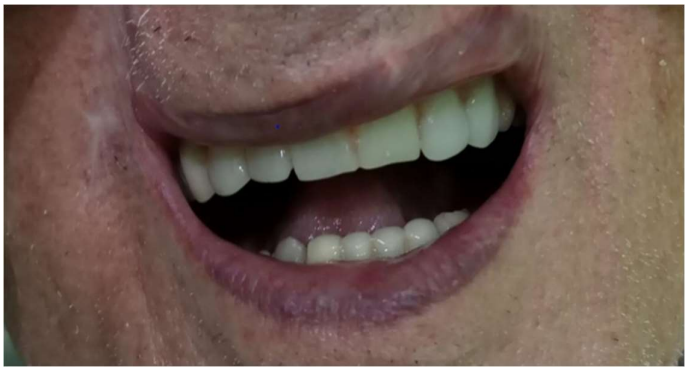

Figure 7: Picture of immediate upper complete denture in patient mouth

Patient was reviewed twenty-four hours after the fitting of the immediate upper complete denture and pressure spots were relieved. He was also reviewed one week and one month after placement of the denture and the patient was satisfied with the aesthetic and function of the denture.

DISCUSSION

Immediate complete dentures provide a reliable treatment option in patient that requires extraction of remaining standing teeth and could not withstand the state of edentulous mouth for certain reason.[5] In this patient, there was gross bone resorption of all the abutment teeth which necessitated their extraction and the patient could not wait for a conventional denture because of his job. Nayak et al.[5] stated that "when a patient cannot do with a state of edentulousness because of social or psychological effect, immediate denture is ideal" The patient's busy schedule was the cause of his failure to comply with routine follow-up appointments and consequently, the failure of the bridge. The patient's tight schedule and unavailability for multiple dental visitations foreclosed the consideration for implant retain fixed prosthesis. Two clinic appointments were adequate for the fabrication of the denture; one appointment for the impression of the denture bearing area together with the failed FPD and the second appointment was for the extraction of hopeless teeth and the fitting of the immediate complete upper denture.

There was no need for the determination of the occlusal vertical dimension (OVD) for the patients because the failed fixed complete denture maintained the occlusal vertical dimension. This is in line with the report of Caputi et al.[7] but contrary, to a previous report by Ogunrinde[8] in an earlier edition of this journal in which a new vertical dimension and centric jaw relation was recorded. The procedure in this present study employed patient's vertical dimension, and centric jaw relation of the existing FPD. The technique was easy and economical. In addition, it decreased the clinical time to two appointments which is beneficial to a busy elderly business man.

CONCLUSION

Patient with altered OVD or deranged occlusion may present a major challenge in fabrication of immediate complete denture. This case report utilize the advantage of stable occlusion and OVD to fabricate an easy, economical but effective immediate complete upper denture for the patient.

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