Case Report

A Technique to Correct Single Denture with Uneven Occlusal Plane in Interim Complete Dentures Therapy

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Abstract

Using existing single denture to fabricate interim maxillary and mandible complete dentures may be difficult. Due to wearing of artificial teeth and uneven occlusal plane in existing single denture, occlusal equilibrium may be difficult to achieve. Even though fabrication of maxillary and mandibular complete dentures concurrently may reach an ideal occlusal plane but it is less cost effective. The present report is related to how to correct occlusal plane to achieve equilibrium when we fabricated the interim complete dentures. After duplication mandibular cast with corrected occlusal plane, use poly methyl methacrylate to correct occlusion plane in chair side.

Keywords: single denture, occlusal plane, wear

Introduction

The single denture opposing all or some of natural dentition is not an uncommon occurrence. Many difficulties confront the dentist rehabilitating patients with this clinical situation. Malposed, tipped, or supererupted teeth in the antagonist arch make it difficult to achieve harmonious balanced occlusion. Another problem with denture opposing natural teeth is the abrasion of the artificial teeth if acrylic resin is used[1-2].

When all the remain teeth need to be extracted, patient who wear single denture is going to accept complete dentures. In this transition stage, interim dentures are necessary. Even though fabrication of maxillary and mandibular interim dentures concurrently may reach an ideal occlusal plane but it is less cost effective; If only fabricate maxillary denture without correct existing mandibular denture, there would be occlusal disharmonies, occlusal interference, dentures displacement, sore spots, and even esthetic problem1. Reuse of existing denture after compensatory chair side correction could have some advantages, such as proper border extension, and easy to adapt.

Sadowsky et al[3] recommended a technique to correct incisal plane error when interim denture was fabricated. The technique can only be applied in midline shift or incisal plane canting but not in wearing of artificial teeth or uneven occlusal plane. This article describes a predictable technique to rectify the undesirable mandibular occlusal plane when fabricate maxillary interim denture.

Fig. 1 Existing single denture with wearing of artificial teeth and uneven occlusal plane

Fig. 2 Arrange maxillary artificial teeth following ideal occlusal plane

Fig. 3 Wax up mandibular posterior teeth in the cast

Fig. 4 Duplicate mandibular cast with corrected occlusal plane

Fig. 5 Check no interference between thermoplastic sheet and denture

Technique

1. When wearing of artificial teeth and uneven occlusal plane in existing single denture after evaluation (Fig. 1), taking centric relation by maxillary occlusal rim and existing mandibular denture. Facebow transfer and then mount the casts in the articulator.
2. According ala-tragus line for the ideal occlusal plane[4-5] (Fig. 2), arrange maxillary prosthetic teeth and wax up mandibular posterior teeth in the cast (Fig. 3).
3. Duplicate mandibular cast with corrected occlusal plane (Fig. 4), and then use pressure molding technique to fabricate mandible occlusal index by pressure forming unit (MINISTA, SCHEU) and thermoplastic appliances (COPYPLAST®,SCHEU). Waxing and processing maxillary interim denture.
4. In the try-in appointment, insert the thermoplastic sheet on the existing single denture to check no interference . (Fig. 5)

Fig. 6 Put PMMA into thermoplastic sheet and insert it back to existing single denture

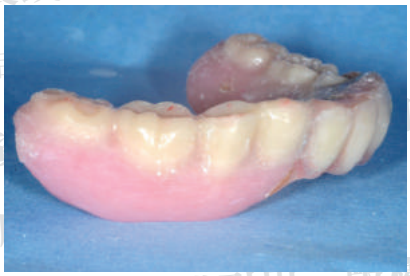

Fig. 7 Rectified existing mandible denture before and after. (lateral view)

Fig. 8 Prosthesis in place after correction. (frontal view and occlusal view)

5. Pour poly methyl methacrylate (Alike™, GC) into the thermoplastic sheet and insert it back to existing single denture (Fig. 6). Rectify existing mandible denture in chair side. (Fig. 7)
6. Insert the prosthesis, adjust occlusion, and polish the prosthesis. (Fig. 8)

Conclusion

The report offers a convenient technique to correct an occlusal plane discrepancy. After simple laboratory and chairside procedure, delivery maxillary interim denture and simultaneously rectify existing single denture occlusal plane in one appointment.

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