Single Complete Denture A Corrective Prosthodontics : A Clinical Report

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Abstract

Successful complete denture used by patients depends on many variables, but three factors stand out in terms of functional success : retention, stability and support. Of the three, it is generally agreed that stability is the most important factor which depends mainly on occlusion. Occlusion that is not balanced in centric and excursive movements will create instability of the prosthesis, which leads to the loss of retention and psychology of the patient. In addition, when a dentate arch opposes an edentulous arch, the edentulous arch is usually adversely affected because of the forces generated.

Occlusal problems and denture base fractures seen in the single complete denture are the result of one or all of the following: (1) occlusal stress on the maxillary denture and the underlying edentulous tissue from teeth and musculature accustomed to opposing natural teeth, (2) the position of the mandibular teeth, which may not be properly aligned for the bilateral balance needed for stability, and (3) flexure of the denture base.

The fabrication of a single complete denture, however, is often overlooked in educational courses and requires a complete understanding of the factors involved in obtaining bilateral balance.

This paper present case report regarding the removal of interferences in Single Maxillary Complete Denture by Han-Kuang Tan technique.

Key Words : *single complete denture, interferences, bilateral balance, denture fracture.*

Introduction

The Single Complete denture opposing all or some of the mandibular natural dentition is not an uncommon occurrence. Many difficulties confront the dentist rehabilitating patients with clinical pattern. Malposed, tipped, or supraerupted teeth in the lower arch make it difficult to achive a harmonious balanced occlusion. As a result ,unfavorable occlusal relationships exist that tend to displace the maxillary denture causing soreness, mucosal changes, and ultimately ridge resorption. The fixed positions of the mandibular anterior teeth make the esthetic and phonetic placement of the maxillary teeth difficult without introducing anterior interferences in eccentric functional movements. Another problem with dentures opposing natural teeth is that of abrasion of the artifical teeth if acrylic resin is used or the abrasion of natural teeth if porcelain is used.

Although these circumstances make treatment difficult and many times compromised, perhaps the greatest error is to make no attempt to modify the occlusal arrangement of the natural teeth. Failure to diagnose and properly modify the mandibular teeth to achieve occlusal harmony with the denture will result in forces that may exceed the physiologic tolerance of the maxillary residual ridge tissues[4].

Case Report

A 68 years old male patient was reported to department of Prosthetic dentistry, R.D.C., P.M.T., Loni (fig 1.). His main chief complaint was to replace his missing upper teeth. (The main reason for missing teeth was generalised periodontitis).

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Fig. 1 : Pre-operative Extraoral

INTRAORAL AND RADIOLOGICAL EXAMINATION

The intraoral findings revealed completely edentulous upper arch. Two teeth missing in front lower arch. Radiographic findings showed good prognosis with lower teeth .

FABRICATION OF PROSTHESIS

After proper intraoral examination (fig .2a ,2b) treatment was planned to fabricate upper complete denture.

Fig.2a-2b : Preoperative intraoral photograph-maxillary and mandibular arch

Impression of upper arch was made(fig .3a,3b). Lower diagnostic impression of lower arch was made with irreversible hydrocolloid impression material(DPI). Upper

Fig. 3a-3b : Primary impression & primary cast

special tray was fabricated, border moulding was done and final impression of upper arch was made with Zinc oxide Impression material. Final cast was retrived from final impression. Record base & wax rim was fabricated on the Maxillary final cast. Vacuum formed clear template was made over the Lower cast with Sta-Vac sheet 0.02 inch thick 9(fig.4). Jaw relation was recorded & casts were mounted on the articulator and

Fig. 4 : Lower cast with vaccum formed sheet

the maxillary teeth are arranged(fig.5) and Denture was prepared. Judicious grinding of the denture teeth and the natural stone teeth on the cast should be carried out. The

Fig 5 : Try - In of waxed and carved dentures.

modified cusps are marked and the template is re-seated (fig.6). Voids are seen at the prepared areas. The template is cut over the prepared areas which will create openings in the prepared areas when it is seated in the patients mout[9] (fig.8). The natural teeth are reduced using this as a guide. After all this procedure the denture was

Fig 6 : Interferences Marked on Cast

Fig 7 : Interferences Removed with the help of Biostar Sheet

Fig 8 : Vaccum formed sheet placed on Natural to Remove Interferences Intraorally.

Fig. 9 : Prosthesis intraorally.

Fig 10 : Postoperative.

fabricated for upper arch. Characterization for denture was done.

Discussion

A single complete denture can oppose any one of the following:

Natural teeth that are sufficient in number not to necessitate a fixed or removable partial denture. A partially edentulous arch in which the missing teeth have been or will be replaced by a fixed partial denture. A partially edentulous arch in which the missing teeth have been or will be replaced by a removable partial denture. An existing complete denture[1].

Several techniques to modify the existing occlusal pattern prior to denture construction have been suggested:

1. Swenson's technique[1].
2. Yurkstas method
3. Bruce method
4. Boucher method
5. L. Klirk Gardner's technique[10].
6. Han Kuang Tan's technique[9].
7. The use of Broadrick's Flag

Conclusion

Due to biomechanical differences in the supporting tissues for opposing arches the patient requiring single denture opposing a natural or restored dentition faces a challenging job for the dentist thus the treatment planning and the prosthesis to be given should be evaluated and corrected to provide a stable prosthesis having stable functional relationships thus controlling the resorption and discomfort to the patient.

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