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Case Report

A Hybrid Overlay Denture Approach Combining Copings with Sleeping Teeth - A Case Report

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Abstract

The overdenture therapy is a conservative alternative for patients who only have a few important teeth left. Retained abutments significantly improve the denture's overall retention and stability. In addition to these advantages, the retained teeth benefit from the intact periodontium, which gives positive reinforcement to the underlying bone. The therapy for overdentures can be done with or without attachments. Although attachments can provide adequate retention, they result in further weaking of the tooth structure due to preparation of the intra-radicular canal. On the other hand, coping supported overdenture provides us with an option of preserving the tooth structure while maintaining the retentive aspect of overdenture. Also retaining roots at the gingival level have proven to preserve the alveolar ridge and shield it from residual ridge resorption. Thus, this article presents a case report aimed at highlighting the usage of different techniques for tooth supported overdenture.

Keywords: Overlay Denture; Tooth Supported Overdenture; Coping Supported Overdenture; Cast Metal Coping

Introduction

According to GPT-9, "Any removable dental prosthesis that covers and rests on one or more remaining natural teeth, the roots of natural teeth, and/or dental implants.", is defined as an overdenture. Renner., *et al*. showed that 50 percent of roots used as overdentures were made immobile in a four-year long research [1]. The conserved periodontium acts as a shock absorber, allowing tooth mobility within the physiological range while also helping to protect bone.

In a totally edentulous patient, a variety of consequences might occur, including loss of proprioception, a change in the pressures conveyed from teeth to mucosa, gradual and chronic bone loss [2] and an influence on the patient's morale [1]. Treatment with overdentures provides a number of advantages, including enhanced psychological acceptance, preservation of the edentulous ridge, [3] vertical dimension maintenance [4,5], and improved retention and stability [6].

Case Report

A 65-year-old female patient, with chief complaint of difficulty in chewing, reported to the Department of Prosthodontics. The patient presented with partially edentulous maxillary and

mandibular arches. On intraoral and radiographic examination teeth number 14,11,21,23, 37,34,33 and 43 were present (Figure 1).

Figure 1: Pre-rehabilitation intraoral view.

Upon evaluation these teeth were found to have mobility within physiologic limit, hence a decision to retain these teeth following endodontic treatment was made.

Following endodontic treatment metal copings were fabricated for teeth number 11,21,23,23,33 and 34. A decision to section of teeth number 14 and 37, till the gingival level was made due to insufficient tooth structure in tooth number 14. A metal coping on tooth number 37 would have complicated the fabrication of distal part of the mandibular denture due to the additional bulk being incorporated. Hence, a thin layer of composite was bonded over the occlusal surface teeth number 14 and 37 (Figure 2).

Figure 2: Post coping cementation.

Following the cementation of the metal copings, primary (Zelgan 2002; Dentsply, Delhi) and final impressions were made (Aquasil light body, Dentsply Caulk, USA). Jaw relations were recorded and try in was done. It was decided to line the part of denture contacting the copings with a permanent solf liner (Molloplast-B, Detax, Gmbh and Co, Germany). For this step first the denture was flasked and dewaxed.

Following complete elimination of wax, permanent soft liner material was carefully tacked into place on the portion of the cast representing teeth covered with copings. Following which the heat polymerising resin (was packed into the flask (Figure 3).

Figure 3: permanent soft liner tacked into place over the coping region on cast.

This was followed by curing of the dentures as per manufacturer's instructions (Figure 4).

Figure 4: Final Denture intraorally.

After this the patient was instructed regarding maintenance of the denture and scrupulous oral hygiene.

Discussion

The loss of bone following tooth extraction, commonly known as RRR, has been recorded by Tallgren, Carlsson and Persson,

Crum and Rooney, and many others. Aside from the numerous advantages of overdentures, they also have the possibility of converting to a traditional denture if the abutments fail at a later point [2]. Despite all of the benefits that the overdenture provides, the most important component that determines its effectiveness is a thorough and comprehensive diagnosis and patient selection. Before beginning treatment, examine the following factors: location, age, tooth health, endodontic therapy, and cost [2]. Failure is unavoidable if these considerations are not taken into account.

Healthy teeth with a somewhat deteriorated periodontal state can be kept, but only with minor modifications to gain biomechanical and psychological benefits. Renner., *et al*. also found that changing the tooth's periodontal condition and lowering the crown root ratio had a good effect on the abutment by reducing its mobility [1].

Conclusion

Hence, whenever possible if the conditions allow overdenture option must be explored to provide patients with a viable prosthesis.

Acknowledgements

None.

Conflict of Interest

None.

Bibliography

1. Renner RP., *et al*. "Four-year longitudinal study of the periodontal health status of overdenture patients". *The Journal of Prosthetic Dentistry* 51.5 (1984): 593-598.

2. Winkler and Sheldon. "Essentials of Complete Denture Prosthodontics". Delhi: A.I.T.B.S. Publishers (2009).

3. Rissin L., *et al*. "Clinical comparison of masticatory performance and electromyographic activity of patients with complete dentures, overdentures, and natural teeth". *The Journal of Prosthetic Dentistry* 39.5 (1978): 508-511.

4. Morrow, R M et al. "Tooth-supported complete dentures: an approach to preventive prosthodontics". *The Journal of Prosthetic Dentistry* 21.5 (1969): 513-522.

5. Thayer HH. "Overdentures and the periodontium". *Dental clinics of North America* 24.2 (1980): 369-377.

6. Preiskel, Harold W. "Overdentures Made Easy: A Guide to Implant and Root Supported Prostheses". London: Quintessence Publications (1996).