Case Report
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Rehabilitation of Anterior Partial Edentulous Condition – A Case Report

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Abstract

Edentulism is a state in which loss of teeth, adversely affect the function, esthetics and psychology of the patient. Rehabilitation technique has evolved considerably over years, in an attempt to achieve better ways of restoration. Certain limitation on the part of patient or dentist makes these traditional methods of removable partial dentures still the first treatment option. This case report describes a simple way of rehabilitating anterior partially edentulous condition with a cast partial denture by preserving and utilizing the remaining natural teeth.

Keywords: Cast Partial Denture, Partially Edentulous, Prosthetic Rehabilitation

1. Introduction

Edentulism either complete or partial encompasses a series of harmful consequences for oral and general health. Oral consequences often encountered are bone loss, impaired functions, psycho-social unacceptance and anesthetics appearance. Such people are at higher risk for systemic diseases[1].

Though the prevalence of toothless has declined over the last decade after the advent of conservative dentistry, still partial or total edentulism remains a major sickness worldwide[2].

Complete denture prosthesis is considered as one of the most unrewarding treatment options in dentistry and more over retaining the natural teeth is beneficial and hence partially edentulous conditions should be avoided to be converted in total edentulism.

Treatment options for partially edentulous arches can be removable partial denture, over dentures, telescopic dentures, implant supported over dentures, Marburg dentures etc.

The idea of joining removable partial dentures with the remaining natural teeth has been used since long time to influence the clinical longevity of the prosthesis. Tissue and tooth born partial dentures shares the functional load equally between the abutment and the edentulous ridge that helps in preservation of the supporting tissues[3].

The factors that contribute in selecting tooth tissue born prosthesis are the position of the abutment teeth in the arch and its periodontal condition. However, one cannot under underestimate the esthetic need and financial limitations of the patient[4].

This case report describes a simple way of utilizing the existing teeth to rehabilitate the edentulous condition.

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2. Case Report

A 56 years old female reported to the department of Prosthodontics for replacing the missing teeth. On intra oral examination, the patient was partially edentulous and the teeth present were 17,18,27, 28,37,38,47,48 making it Kennedys class IV condition in both the arches. The teeth present were attirted. The teeth showed no mobility, good periodontal and osseous support. The remaining edentulous ridge was well rounded and was free of flabby tissues, spicules and bony prominences. On extra oral examination, TMJ showed clicking on opening and closing of the jaw.

After complete evaluation of the clinical situation and patients desire for non-invasive treatment it was decided to prosthetically rehabilitate the lost teeth and vertical dimension with a cast partial denture.

The existing teeth were preserved and involved in cast partial dentures as an abutment. Patient was not willing for endodontic treatment.

Diagnostic impression was made in irreversible hydrocolloid impression material (Dentsply) and was poured in dental stone (Figures 1 and 2). After surveying of the cast, the metal frame work was planned. Major connector of choice in this case for maxilla was complete palatal coverage and lingual plate for mandible. Ring clasp and mesial and distal occlusal rest seats were designed for all the remaining natural teeth.



Figure 1. Diagnostic maxillary cast.



Figure 2. Diagnostic mandibular cast.

Diagnostic jaw relation was recorded to re-establish the lost vertical dimension with the help of facial esthetics and phonetics method before tooth preparation. All the remaining tooth were prepared to receive the metal crowns. Mesial and distal occlusal rest seats were mapped in the metal crown at the time of wax-up. The crowns were casted and cemented with rest seats incorporate in it (Figure 3 and 4).

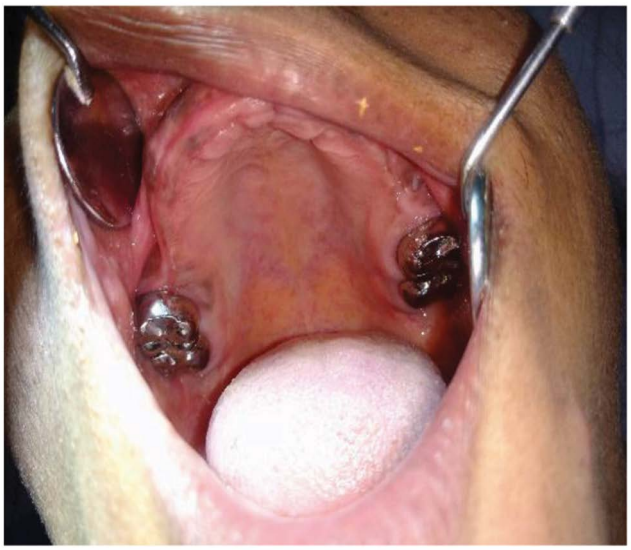


Figure 3. Metal crown on 17,18,27,28 with mesial and distal rest seats.



Figure 4. Metal crowns on 37,38,47,48 with mesial and distal rest seats.

An impression was made after crown cementation for fabrication of a special tray. Border molding of the edentulous region was done in a conventional manner and the impression of the dentulous region was made in putty elastomeric impression material (Aquasil). Final impression of the edentulous and dentulous region was made in light body impression material (Aquasil) for both the arches (Figure 5 and 6).

Metal frame work was precisely casted in Co-Cr-Mo. Fit was verified in patient's mouth. Record bases were made over the metal frame work and the vertical at occlusion was recorded by asking the patient to occlude on the posterior teeth.

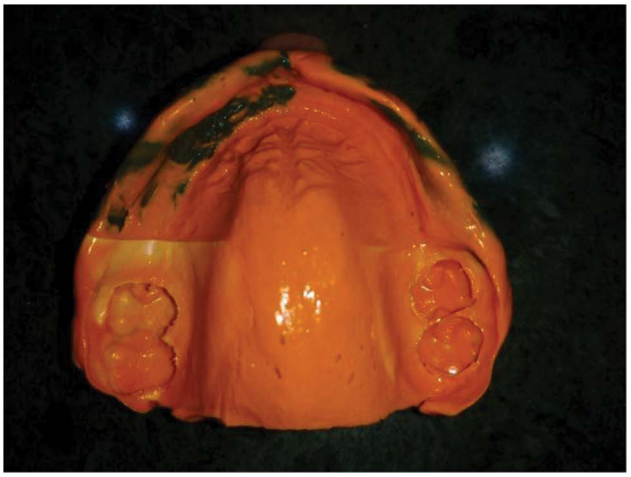


Figure 5. Maxillary final impression.



Figure 6. Mandibular final impression.

At the time of try-in the occlusion, esthetics and phonetics was evaluated. Denture processing was done in a conventional manner (Figure 7). Denture was inserted (Figure 8) and post denture instructions were given. Patient was kept on periodic recall and the proper hygiene maintenance was emphasized.



Figure 7. Final processed denture.

3. Discussion

Currently scientific research is more targeted towards the fixed prosthetics such as fixed partial dentures and implant dentistry. Implant over dentures for partially edentulous conditions has become popular treatment option among patients and dentist. However certain limitations such as medical contraindications, high cost, invasive procedure



Figure 8. Intra-oral view with prosthesis.

at the time of surgery and longer treatment time has restrain their universal aptness[5]. Thus, making removable partial dentures still to be the treatment of choice in clinical practices.

Even though the removable partial denture being preferred in day to day practice there are very less systemic literature reviews and clinical publications on it[6].

The choice of treatment for the older patients should be simple and adaptive. And same was implied in this case. Opting for other removable denture treatment options such as telescopic dentures or over denture would require endodontic treatment[7] but patient was not willing for any invasive procedures and hence cast partial dentures was planned in this case with metal crowns on remaining natural teeth.

The teeth present were periodontal strong so rather that extracting them they were utilized as abutment teeth to enhance the retention and support. More over the presences of teeth maintained the proprioception and boosted the psychology of the patient of being not toothless[8].

The existing teeth were attrited and hence there was need to establish a new vertical dimension of occlusion before metal crowns were casted. The desired vertical dimension was established with the help of diagnostic jaw relation that acted as a guide for tooth preparation of the remaining natural teeth to receive the metal crowns. For preciseness the occlusal rest seats were incorporated in the metal crowns itself.

To enhance the retention and support, ring clasp and mesial and distal occlusal rest seats were designed on all the remaining natural teeth in the metal framework. It has been documented in literature that good base adaptation also adds in retention of the prosthesis[9]. And hence, the metal base that was used in this case further amplified the retention by increasing the wettability with the underlining tissues.

4. Conclusion

The ultimate objective in rehabilitating a partially edentulous patient is to provide a functional prosthesis that maintains the health of the remaining oral structures. In this era of conservative dentistry, focus should be on preservation of what is left rather than meticulously replacing what is missing. Cast partial denture is one of the treatment options for partially edentulous cases that provide better results in terms of retention, stability, masticatory efficiency, comfort and periodontal health of abutment.

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