ISSN No: 2582-0559

CASE REPORT

SEMIPRECISION ATTACHMENT RETAINED CAST PARTIAL DENTURE FOR REHABILITATION OF GERIATRIC PATIENT- A CASE REPORT

Dr. Asmath Jehan, Dr. Ahila Singaravel Chidambaranathan, Dr. Muthukumar Balasubramanium

Department of Prosthodontics. SRM Dental College,SRM University, Ramapuram, Chennai, Tamilnadu, India.

DOI: 10.37841/jidam_2022_V9_I1_03

Address for Correspondence

Dr. Ahila Singaravel Chidambaranathan, MDS, Professor,

Department of Prosthodontics.

SRM Dental College,

SRM University, Ramapuram, Chennai, Tamilnadu,

India. Email: ahilasc@yahoo.co.in

Received : 11.01.2022 **Accepted : 02.03.2022**
First Published: 05.03.2022 **Published : 30.03.2022**

ABSTRACT

Prosthetic rehabilitation is of utmost importance for a geriatric patient for their proper nutrition and good health, so that the quality of life will improve, both functionally and socially, thereby improving their confidence and self-esteem. In a geriatric patient due to their medically compromised health condition where implant is contraindicated, rehabilitation can still be done. This case report describes a patient's oral status with Kennedy's class II modification 1 edentulous space in mandibular arch was successfully rehabilitated with semi-precision attachment retained RPD and a long span fixed dental prosthesis in the opposing maxillary arch.

KEYWORDS: Prosthodontic rehabilitation, Semi-precision attachment, distal extension edentulous space, Bar and study attachment, removable- fixed partial denture.

INTRODUCTION

Prosthetic rehabilitation plays a crucial role in restoring geriatric patients with multiple missing teeth. Patients with comprising health conditions with relative contraindications to implant surgery can still be rehabilitated effectively with fixed prosthesis with precision attachment with removable partial denture in distal extension thereby improving in drastically diminishing the quality of life of such geriatric patients, both functionally, esthetically and socially providing confidence and also functionally improving the nutrition of the patients.

Rehabilitating implant supported prosthesis, though desirable, are not always feasible for reasons such as compromised health condition, age, and high treatment cost. In such cases, prosthodontic rehabilitation plays a fundamental role in rehabilitation. Conventional fixed denture prosthesis is not possible in the absence of distal abutment. Comparatively favorable prosthodontic outcome is still possible with all the limitations. One such treatment option is FPD with attachment retained RPD.[1] Attachments can be intra-coronal and extra-coronal. Intra-coronal attachments have male and female components attached within the coronal structure of the abutment tooth. Extra-coronal attachments with male and female components attached to the external surface of the abutment tooth.[2,3] This is a case report of a patient with Kennedy's class II modification 1 in mandibular arch rehabilitated by fixed partial denture with semi-precision attachment retained cast partial denture and long span fixed dental prosthesis in the maxillary arch.

CASE REPORT

A 70-year-old female patient came to the Department of Prosthodontics, SRM Dental College, Ramapuram, Chennai, India with a chief complaint of missing teeth 11,17,21,24,25,27,35,36,46,47 and unable to eat food. Patient has history of diabetes, hyperthyroidism and hypertension. The clinical condition was diagnosed as Kennedy´s class II modification 1 in mandible and Kennedy´s class III modification 1 in maxillary arch (Fig 1).

Fig 1: Pre-operative Photo

There was generalized attrition with pain in relation to 16 which was supra-erupted, radiographically showed pulpal exposure hence intentional root canal treatment was performed. Treatment options given were

1)Implant supported prosthesis for upper and lower arch
2)Removable partial denture for lower arch and FPD/ implant for upper arch.
3)Semi precision attached cast partial denture for lower and FPD for upper arch.
Finally, last option was decided.

TREATMENT PROCEDURE

1 Diagnostic impressions with alginate impression material (Zelgan plus, Dentsply) was made and cast was poured and articulation was done. (Fig 2)

Fig 2: Diagnostic cast

2.Tooth preparation for 12, 13, 22, 23, 26, 34, 35, 44 and 45 was done and provisional restoration was given.
3 Definitive impression was made with polyvinylsiloxane impression material (Aquasil, Dentsply) and cast with die

stone was made. Interocclusal records was made and the casts were articulated. (Fig 3)

Fig 3: Final impression

4.Wax patterns were fabricated for metal ceramic fixed partial denture for maxillary and mandibular arch. Male components were attached to the axial surface of the abutment with the help of a dental surveyor. This was followed by investing and casting.

5.The fit of the upper framework was verified in the master cast and in the patient's mouth. Framework was sand blasted and followed by ceramic build up. The cementation of definitive prosthesis for upper arch was done. (Fig 4)

Fig 4: Bite registration

6.Inter-occlusal record was made with inter-occlusal record impression material along with the upper metal ceramic fixed partial denture. (Fig 5)

Fig 5: Fixed partial denture

7.The wax pattern of the metal framework was fabricated using a dental surveyor and lingual bar major connector framework was made. The framework was invested, casted and the female component was inserted in the tissue surface of metal framework. (Fig 6)

Fig 6: Metal copings

8.The fit and retention of the metal framework was verified in the patient's mouth and jaw relation was done. (Fig 7)

Fig 7: Metal try-in

Teeth arrangement and wax try in was done. The processing of the denture was then followed by finishing and polishing the removable partial denture. (Fig 8)

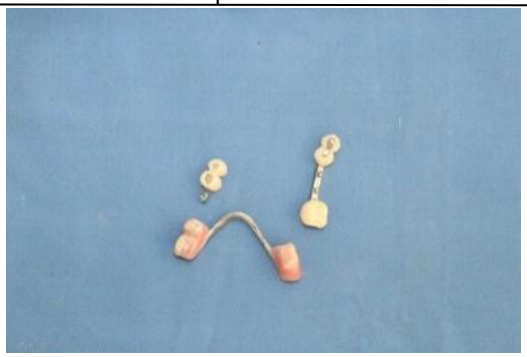

Fig 8: Completed prosthesis

9. The porcelain fused to metal fixed partial denture was cemented with GIC type 1 luting cement (GC, Gold label) and the denture was inserted. (Fig 9) Patient was recalled after 24 hours for postinsertion check-up.

Fig 9: Post operative Photo

DISCUSSION

An attachment is a mechanical device for the fixation; retention and stabilization of dental prosthesis. In 1906, Dr. Herman E. S. Chayes designed the first attachment and positioned the attachment lingually, but eventually a mesiodistal position was finally agreed for its better esthetics.[4] First semi precision attachment was constructed by Gillete in 1923. Attachments are classified into precision and semi-precision attachments based on the method of fabrication and tolerance to fit.[5] While prefabricated attachments are called as precision attachments, the attachments processed in laboratory are called as semiprecision attachments. Precision attachment is made of precious metal and machined to very close tolerances, hence is more precise than laboratory fabricated attachment.[6] Semiprecision attachments are usually custom fabricated in base metal alloys with metal fixed to a fixed or removable partial denture that fits into a matrix in a cast coping, allowing partial movement of the components. Their main application is for distal extension prosthesis to allow partial movement of the prosthesis.[7]

CONCLUSION

Use of semiprecision attachments based on the patient requirements and gives a better alternative approach in rehabilitating geriatric cases with better retention and esthetics compared to the conventional removable partial denture.

FINANCIAL SUPPORT AND SPONSORSHIP:

Nil

CONFLICTS OF INTEREST:

There are no conflicts of interest.

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