CASE REPORT

Precission Attachment: A Boon to Prosthodontics

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ABSTRACT:

In our fast paced and upwardly mobile society, patients will see a dentist for two main reasons: discomfort and/or esthetics. The dental professional must be able to relate to the patient's concerns, both physically and psychologically. Attachments provide a very important psychological union in treating a patient as a whole and not merely as a disease. Just as patients' needs differ, so do attachments. It is important to realize no attachment is perfect for every application. This case report describes how a partially edentulous condition was restored with a cast partial denture along with precision attachment.

Key words: Precision attachment, Cast partial denture with attachments, Retainers in removable partial dentures

INTRODUCTION

Preventive prosthodontics emphasizes the importance of any procedure that can delay or eliminate future prosthodontic problems. Prosthetic rehabilitation of patients with few remaining teeth is challenging. In terms of function and aesthetics, complex partial dentures meet the high demands of the profession, as they represent the combination of fixed and removable restoration. While constructing these complex partial dentures, it is necessary to choose and plan the various elements in a proper manner. In addition to offering convenience and good aesthetics, adequate retention and stabilization also affect the patient's feeling of confidence, providing him/her with adequate function.

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This article describes a method for fabricating a removable fixed prosthesis for maxillary arch using extra coronal precision attachment and removable cast partial over denture for mandibular arch.

**CASE REPORT:**

A 55 years male patient reported to the department of prosthodontics, Kamineni institute of dental sciences, with the chief complaint of missing maxillary teeth in relation to 15, 16, 17, 25, 26, 27 and missing mandibular teeth in relation to 32, 35, 36, 38, and 43. On clinical examination revealed that there was grade 3 mobility and severe pockets in relation to 31, 41, 42, 4, 18, 24, 28, and 36 and poor periodontal prognosis was arrived. Also there was supraeruption of mandibular canine and premolar in third quadrant. An orthopantomogram (Fig-1) was advised which revealed severe generalized bone loss which was suggestive of periodontitis. For the maxillary arch bilateral fixed removable prosthesis was planned with extra coronal precision attachment incorporated bilaterally in the canine region. For the mandibular arch removable partial over denture has been suggested in order to retain mandibular canine and premolar from extraction which are used as over denture to provide increased stability and retention to the denture. For the better logivity of the prosthesis extraction of poor prognosised teeth i.e. 18, 14, 24, 28, 31, 33, 34, 36, 41, 42, 43 were done.

**TECHNIQUE:**

1. Preliminary impressions of both arches are made with irreversible hydrocolloid material using stock trays. Pour the casts with dental stone.

2. Diagnostic casts are obtained and mounted on a three point articulator.

Tooth preparation of anterior six maxillary teeth was done for which hybrid denture was planned. Tooth preparation in relation to 33, 34 was done for which partial overdenture was planned.

3. Mandibular overdenture coping cementation was done.

4. Custom trays were fabricated for the maxillary and mandibular arches and final impression of both arches was made with light body consistency addition silicone impression material after border moulding.

5. Wax pattern is fabricated on the master cast and the OT cap male component is attached to the distal surface of the canine with the help of surveyor so that there is parallel path of withdrawal and placement (fig 2).

6. Sprue, invest and cast of the fixed partial denture is done (fig-3).

7. Master cast is blocked out with anterior metal framework in its position, and similarly mandibular master cast was also duplicated with reversible hydrocolloid and refractory casts were obtained.

8. The next step was fabrication of wax pattern for distal extension cast partial denture along with prefabricated castable Rhein 83 OT female component attached to it in relation to the maxilla and wax pattern for cast partial overdenture in relation to mandible and this was followed by casting.

9. Finishing and polishing of both frameworks were done. In casted female housings black laboratory analog which mimics retentive cap was inserted.

10. Maxillary and mandibular metal trial was done. (figure-4) The presence of laboratory analog helps in giving a faint idea of denture retention.

11. Jaw relations were recorded and bite registration was done.
Figure 1: Orthopantomogram revealed severe generalized bone loss which was suggestive of periodontitis.

Figure 2: Fabrication of Wax pattern on the master cast and attachment of OT cap male component.

Figure 3: Casted fixed partial denture on the cast.

Figure 4: Metal try in of the cast partial framework.

Figure 5&6: Post insertion image of maxillary and mandibular cast partial denture.
12. Try in of both maxillary and mandibular denture were done.
13. Denture processing was done with laboratory analogues in female housings. After acrylization the dentures were retrieved and the analogues were separated from the housings.
14. Finishing and polishing of denture was done.
15. Insertion of maxillary and mandibular cast partial denture was done (fig-5&6).

DISCUSSION:

The cast partial denture has been suggested as an alternative to removable partial denture as it improves patient perception of food and with precision attachment incorporated into the framework there is increased longevity of the restoration. In order to increase the retention and stability of the denture the two teeth in the third quadrant which are supraerupted are root canal treated and copings are being fabricated for them and cemented. The retention of combinations of fixed partial dentures (FPDs) and removable partial dentures (RPDs) is achieved through clasps, adhesive attachments, intra- or extra coronal attachments, telescopes, root caps, and/or prefabricated interradicular retainers. Various types of extra coronal attachments are commonly used in combinations of FPDs and RPDs to achieve retention and stability. Rhein 83 male and female components were used for this precision attachments which helps in providing vertical stability for the maxillary arch and two overdenture copings for the mandible helps in increasing retention. Selection of an internal or external attachment is based on design considerations for the prosthesis and the anatomic morphology, location, and position of the abutment tooth. Internal attachments have the advantages of maintaining forces more in line with the long axis of the tooth and having a more desirable resistance to vertical and lateral forces, while external attachments require less reduction of the abutment tooth.

REFERENCES


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