



ESTHETIC MANAGEMENT BY ANTERIOR FIXED PROSTHESIS IN SPACED DENTITION - A CASE REPORT

Prosthodontics

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ABSTRACT

Esthetic concerns of the patient rises while planning replacement of teeth in the anterior region of the jaw. It has been a greater challenge with missing teeth along with diastema. Conventional fixed partial denture will not justify excess space available for pontic in such cases. Loop connectors in fixed partial denture is the treatment of choice in such cases. Hence, we report a clinical case wherein loop connectors are given to the patient trying to maintain natural appearance, spacing and profile emergence of the patient.

KEYWORDS

Esthetic, Diastema, Loop connectors

INTRODUCTION

Technological improvements have taken place in response to the growing demand of the patients for esthetics. Function, form and esthetics should be adequately restored when considering anterior prosthesis. Treatment planning consists of determining a sequence of treatment logically designed to restore the patient's dentition.

In prosthodontic circles, there has been increasing awareness of the importance of positioning the anterior teeth to provide physiologically adequate labial support and a pleasing profile. The treatment alternatives to restore a single, maxillary anterior missing tooth include a traditional FPD; a cantilever FPD (for a missing lateral incisor); a removable partial denture (RPD); an acid-etched, resin-bonded prosthesis; or a single implant-supported restoration^{1,2}. The type of treatment provided to the patient depends on various factors and further a decision is made as to which is the best option available for that condition.

Excess edentulous space for a pontic is a consequence of loss of anterior tooth with existing diastema. Hence conventional treatment options will not be sufficient to meet the esthetic demands in such patients³. The shape of a pontic should be designed to meet functional demands, promote access, and ensure esthetics, goal of maintaining the health of the adjacent soft and hard tissue⁴.

This case report presents a simple and effective technique in anterior fixed prosthodontics to provide optimal esthetics and function, discussing the necessary clinical strategies to obtain imperceptible final restorations. For all parameters evaluated, these FPDs proved to be a viable treatment procedure for anterior partial edentulism with good clinical and esthetic outcomes.

Case report

A 45-year-old female patient reported to the Department of Prosthodontics, with the chief complaint of missing teeth in upper front region of jaw (Fig.1,2,3). Patient had missing teeth due to chronic periodontitis since 3-4 months. Patient also gave a history of midline diastema.



Fig. 1: Pre-Operative Extra-Oral View



Fig. 2: Pre-Operative Labial View



Fig.3: Pre-Operative Maxillary View

A conventional FPD was not possible due to wide spaces between the anterior teeth. Patient was not ready for implant placement due to increased cost and time of the treatment. Hence fixed partial denture for maxillary anterior and removable prosthesis for lower arch was planned. Posterior tooth prosthesis was not required hence spring cantilever was not given for this case. Considering all the factors, the treatment option of three unit of porcelain fused to metal FPD from right maxillary lateral incisor to left maxillary central incisor with intermediate loops was done. Removable prosthesis was given to replace the missing teeth for lower arch.

Procedure:

1. The treatment plan was explained to the patient and clinical procedure was done starting with shade selection and tooth preparation with right maxillary lateral incisor and left maxillary central incisor.
2. The tooth preparation was done with subgingival margin and shoulder finish line considering prosthesis in esthetic zone. (Fig. 4)



Fig. 4: Tooth Preparation with Gingival Retraction

3. Gingival retraction was done and final impressions were made using two step impression technique with the help of putty elastomeric impression and light body for the maxillary arch. Final impression for the mandibular arch was also made.
4. Interocclusal record registration was done using bite registration wax (MAARC, Aluminium filled, USA)
5. Provisional restoration was made using tooth coloured acrylic followed by temporary cementation. (Fig. 5)



Fig. 5: Provisional Restoration

6. Wax pattern was fabricated using inlay wax for loop connector.
7. Metal trial (Fig. 6,7) was done for marginal adaptation and the size and the shape of the loop connector was confirmed for phonetics followed by bisque trial for final prosthesis. (Fig. 8,9)



Fig. 6: Labial View- Metal Coping

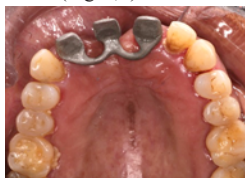


Fig. 7: Maxillary View- Metal Trial



Fig. 8: Labial View- Bisque Trial



Fig. 9: Maxillary View- Bisque Trial

8. Permanent cementation of final prosthesis was done using luting glass ionomer cement. (Shofu Hybond, Glass-ionomer Cx) (Fig. 10,11)



Fig. 10: Post Operative Labial View

9. Delivery of removable prosthesis for lower arch done.



Fig. 11: Post Operative Extra-Oral View

10. Post-operative oral hygiene instructions were given and patient was recalled after one week for follow up.

DISCUSSION

Connectors are the components of a partial fixed dental prosthesis (FDP) or splint that join the individual retainers and pontics together. The selection of right type of connector during treatment planning is an essential step for success and failure of the prosthesis⁵. The size, shape, and position of connectors all influence the success of the prosthesis. Connectors must be sufficiently large to prevent distortion or fracture during function but not too large; otherwise, they interfere with effective plaque control and contribute to periodontal breakdown over

time. For esthetic FDPs, a large connector or inappropriate shaping of the individual retainers may result in display of the metal connector, which may compromise the appearance of the restoration and lead to patient dissatisfaction.

In the above case, the loop connector FPD addressed the major problem of excessive mesio-distal width pontic space that would hamper esthetics. It is also easy to clean and maintain. The connectors should not be overtly thick and should have an intimate contact with the underlying mucosa; otherwise, there are chances that the patient may develop the habit of pushing the tip of the tongue into the space between the loop and the oral mucosa. In rare instance healthy and sound, posterior teeth have been used as abutments to replace a maxillary anterior tooth with diastema, using a resin bonded spring cantilever fixed partial denture⁶.

CONCLUSION

Treatment plan finally selected should reflect the best for the patient being our ultimate aim. It should completely satisfy the requirements of the patients. Case report described here gave the best possible fixed prosthesis to meet the esthetic and functional needs.

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