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CLINICAL REPORT

Loop Connectors to Restore Maxillary Anterior Teeth with Diastema - A Case Report

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ABSTRACT

Restoring single missing anterior teeth is a challenging situation for the prosthodontist. In patients with increased interdental spacing or midline diastema, replaced with conventional fixed dental prosthesis affects the esthetics of the patients due to increase in size of the clinical crown. For such kind of clinical cases; loop connector will be a solution to enhance esthetics, maintain interdental spacing and proper emergence profile. This case report describes the successful management of diastema with fixed dental prosthesis with loop connector.

INTRODUCTION

A space between adjacent teeth is called a "diastema".Midline diastemata (or diastemas) occur in approximately 98% of 6-year olds, 49% of 11 year olds and 7% of 12- 18 year olds.[1]In some individuals however, the diastema does not close spontaneously.

The continuing presence of a diastema between the maxillary central incisors in adults often is considered an esthetic or malocclusion problem[2].The extent and the etiology of the diastema must be rigorously evaluated.In some cases, interceptive therapy can produce positive results early in the mixed dentition.Proper case selection, appropriate treatment selection,adequate patient cooperation, and good oral hygiene all are important.[3-5]

The conventional fixed partial dentures used to replace missing tooth may result in too wider anterior teeth with an over-contoured emergence profile.

This leads to poor esthetics and decreased patient satisfaction.So,loop connectors can be provided to maintain the midline diastema or interdental spacing.[6] Connectors are defined as the portions of a fixed partial denture that unites the retainers and pontics.[7]Connectors can be of rigid and non-rigid.Rigid connectors can be made by casting, milling, laser sintering, soldering, or welding.Rigid connectors are of cast connectors, soldered connectors and loop connectors.[8]This case report describes a method of providing rigid connection using loop connectors in the maxillary anterior teeth region with diastema.

CASE REPORT

A 24-year-old male patient reported to the Department of Prosthodontics, at SRM Dental College and Hospital, Ramapuram, Chennai, India with a chief complaint of missing maxillary anteriortooth due to road traffic accident.On clinical examination,it was found that 11was missing and 22 palatally placed. The lamina dura of

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the primary abutments presented without any periapical pathology. (Figure.1& 2)

Treatment options available for replacement of single missing anterior tooth in the esthetic region includes orthodontic treatment,removable partial denture,conventional fixed partial denture and implant supported prosthesis.

To maintain the interdental spacing in patients with midline diastema,orthodontic treatment and removable partial denture treatment options are ruled out for aesthetic reasons.

If implant supported prosthesis is not selected as a treatment option for any reason, conventional fixed partial denture with loop connectors would be a treatment option to achieve desirable esthetics. Hence fixed partial denture with loop connectors was suggested as a treatment option for this patient.

Treatment procedure

1. Diagnostic impression was made with irreversible hydrocolloid impression material (Zelgan Plus Alginate Impression Material, Dentsply) and casts made with dental stone.(Golden Stone, Golden Stone Ramaraju Traders,Chennai) (Figure.3)
2. Abutments 12 and 21 were prepared(Figure.4) and a definitive impression was made with polyvinyl siloxane impression material(Aquasil, Dentsply Intl, New York, PA) The definitive casts were articulated.
3. Wax pattern was fabricated, and loop connectors were placed palatally in relation to 12, 11 and 21 region.
4. After casting procedures, the fit was verified intraorally. (Figure.5)
5. Ceramic build-up and glazing was done. (Figure.6) The prosthesis was tried for esthetics and the fixed partial denture with the loop connector was cemented with the GIC type-1 luting cement.(GC Corporation, Tokyo, Japan) (Figure.7) Patient educatedfor maintenance and follow-up protocols.
6. Patient was recalled after 24 hours for post cementation review.

Figure.1: Pre-operative (intra-oral view)

Figuer.2: Intra-Oral Periapical Radigraph

Figure.3:Diagnostic cast

Figure.4:Tooth Preparation

Figure.5:Metal Try-in

Figure.6:Loop connector

Figure.7: Post-operative (intra-oral view)

DISCUSSION

Connectors are the components of fixed dental prosthesis or splint that join the individual retainers and pontics together.Rigid connectors are shaped and incorporated in the wax pattern to proper contour before reflowing of the margins for investing[8]. Saini S concluded that to maintain space in the fixed prosthesis, loop connector is an excellent treatment option to improve esthetics. The limitationsof the design are the acceptance of palatally projecting connectors by the patient[9]and maintenance of oral hygiene due to good entrapment.

CONCLUSION

Fixed partial denture with a well-adapted palatally placed loop connecter offers better esthetics in anterior mid-line diastema situations and provides near natural appearance with increased patient satisfaction.

Conflict of Interest: Nil

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