



Loop Connector in esthetic restoration of missing anterior teeth – A case report

Dental Science

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KEYWORDS:

Introduction

The basic aim of a dental prosthesis is the restoration of function and esthetics by replacing missing teeth with minimal risk to adjacent supportive tissues¹. Many at times the edentulous span may be too long or presence of diastema. In such situations the use of a conventional fixed partial denture (FPD) to replace the missing tooth may result in anterior teeth being too wide, an over-contoured emergence profile, and altered length-to-width relationship of the teeth^{2, 3}. Maximum esthetic results may be obtained if the natural anatomic forms of teeth are protected and the diastema are maintained with minimal over-contouring of the adjacent teeth².

In routine dental practice there can be situations like generalized spacing, pre-existing diastema, or excessively long edentulous span where diastema may be desired. When clinical conditions or economic constraints preclude the use of implants, a fixed dental prosthesis with loop connector can be a good treatment option. A loop connector can be used to replace one or more missing teeth maintaining the diastema³.

Case report

A 47 year old male patient reported to the Department of Prosthodontics with a chief complaint of missing right lateral incisor. The edentulous span was wider mesiodistally and presence of generalized spacing was noticed (fig 1). Radiographic evaluation revealed enough bone support for the abutment teeth.

The treatment plan was discussed with the patient and the abutment teeth were planned for porcelain fused to metal crowns. The diagnostic impressions of the maxillary and mandibular arches were made using alginate impression material. Shade selection was done. The abutment teeth i.e. upper right central incisor and canine were prepared to receive porcelain fused to metal crown with subgingival shoulder finish line (fig 2). The final impressions were made using putty wash technique (aquasil, densply).

The final casts were poured using type IV dental stone (gyprock). Wax patterns for the fixed dental prosthesis with loop connectors were fabricated and cast using base metal alloy. After the metal coping was retrieved, metal try-in was done followed by ceramic layering according to the selected shade. Bisque trial was done to check for any esthetic and occlusal corrections. After final finishing the restoration was cemented using glass ionomer cement type I luting GIC (fig 3). The patient was instructed to maintain proper oral hygiene.

Discussion

A connector is an integral part of a fixed dental prosthesis. As per GPT-

8 a connector is defined as that portion of a fixed dental prosthesis which unites the retainer and pontic⁴. Connector in fixed dental prosthesis can be rigid or nonrigid. Loop connector is a type of rigid connector. Loop connector becomes an ideal choice when diastema is desired between adjacent teeth. This enhances esthetics by retaining the naturally present diastema, providing a good emergence profile and preventing oversized retainers.

Disadvantages include difficulty in maintaining oral hygiene, interference in tongue movement and initial speech discomfort. The maintenance of oral hygiene and speech discomfort gets better with use. The loops should be rounded and smaller in diameter for better patient comfort⁵.

Conclusion

Proper case selection and treatment planning are crucial to the success of a fixed dental prosthesis with loop connector.

Whenever diastema between the teeth needs to be retained, a fixed dental prosthesis with loop connector can be an option.



Fig1. Pre operative view



Fig. 2 Tooth preparation done

Fig. 3 final prosthesis**Labial view****Palatal view****References**

- 1... Marinello CP, Meyenberg Kh, Zitmann NU, Et al. Single tooth replacement: some clinical aspects. *J Esthet Dent* 1997; 9(4): 169-178.
- 2... Balkaya MC, Gur H, Pamuk S. The use of resinbonded prosthesis while maintaining the diastemata: A clinical report. *J Prosthet Dent*. 2005;94:507-10.
- 3... Kalra A, Gowda ME, Verma K. Aesthetic rehabilitation with multiple loop connectors. *Contemp Clin Dent* 2013;4(1):112-115
- 4... The Glossary of Prosthodontic Terms. *J Prosthet Dent* 8th Ed., July 2005
- 5... Sudhir Bhandari, Sonika Bakshi. Survival and complications of unconventional fixed dental prosthesis for maintaining diastema and splint pathologically migrated teeth; a case series up to 8 years follow-up. *Indian Journal of Dental Research*, 24(3), 2013
- 6... Dr. Ravikumar Akulwar, Dr. Susheen Gajare, DR. Shivkumar Mule, DR. Ashwin Kodgi. Oral Rehabilitation with Multiple Loop Connectors: A Case Report. *Indian Journal of Applied Research*. 2014;4:512-4.
- 7... Rosensteil SF, Land MF, Fujimoto J. 3rd ed. St. Louis, Mo: Mosby; 2001. *Contemporary Fixed Prosthodontics*; p. 710.
- 8... Bhadari U, Bakshi S. Survival and complications of unconventional fixed dental prosthesis for maintain diastema and splint pathologically migrated teeth: A case series up to 8 years follow up. *Indian J Dent Res*. 2013;24:375-80.
- 9... Levin EI. Dental esthetics and the golden proportion. *J Prosthet Dent*. 1978;40:244-52.
- 10... Balkaya MC, Gur H, Pamuk S. The use of a resin bonded prosthesis while maintaining the diastema: A clinical report. *J Prosthet Dent*. 2005;94:507-10.
- 11... Menezes N, Chitre V, Singh RK, Aras M. Maintaining diastema in a fixed partial denture: A case report. *J Indian Prosthodont Soc*. 2003;3:8-10.
- 12... Plengsombut K, Brewer JD, Monaco EA, Jr, Davis EL. Effect of two connector designs on the fracture resistance of all ceramic core materials for fixed dental prostheses. *J Prosthet Dent*. 2009;101:166-73
- 13... Kamalakanth S, Arbaz S. Anterior loop connector fixed partial denture: A simple solution to a complex prosthodontic dilemma. *Journal of Indian Prosthodontic Society* 2008;8:162-4
- 14... Eshleman JR, Janus CE, Jones CR. Tooth preparation designs for resin-bonded fixed partial dentures related to enamel thickness. *J Prosthet Dent* 1988; 60:18-22.
- 15... Bello A, Jarvis RH. A review of esthetic alternatives for the restoration of anterior teeth. *J Prosthet Dent* 1997; 78:437-40.
- 16... Oh W, Götzen N, Anusavice KJ. Influence of connector design on fracture probability of ceramic fixed partial dentures. *J Dent Res* 2002;81:623-7.