



Case Report

Aesthetic Replacement of an Anterior Tooth Using the Natural Tooth as a Pontic- An Immediate and Economic Prosthesis

Akhil Mittal¹, Sanjoy Sahoo¹, Anish Bharti¹, T.K. Giri², Bhaskar Sen Gupta³

¹PG Student, ²Professor, ³Professor & HOD,
Department of Prosthodontics, Dr R Ahmed Dental College & Hospital, Kolkata

Corresponding Author: Akhil Mittal

Received: 18/01/2015

Revised: 17/02/2015

Accepted: 17/02/2015

ABSTRACT

The loss of anterior teeth can be psychologically and socially damaging to the patient. Despite a wide range of treatment options available, traumatised teeth may be inevitably lost on certain occasions. This article describes the immediate replacement of a left central incisor using a braided glass fibre impregnated with light cured composite resin with the natural tooth crown as a pontic.

Keywords - Natural tooth pontic, Fibre reinforced composite, immediate restoration, Conservative, interlig.

INTRODUCTION

The loss of anterior teeth can cause considerable trauma to the patient both psychologically and socially. Various treatment modalities are available for the replacement of lost anterior teeth, such as insertion of an osseointegrated dental implant, and the classical approach of a conventional fixed partial denture, resin-bonded bridges and removable prosthesis each having their specific advantages and disadvantages. ⁽¹⁻⁶⁾ Immediate replacement of missing tooth using patients own natural teeth is not only psychologically advantageous but is also economical and fulfils patient aesthetic needs.

The abutment teeth can be conserved with minimal or no preparation, thus keeping the technique reversible, and can be completed at chair side thereby avoiding

laboratory costs. It can be considered a hygienic, non-invasive and long-term provisional treatment, providing superior aesthetics and functions,

The natural tooth pontic is stabilized in the extraction socket with a resin-fibre splint as a provisional restoration to maintain the gingival architecture. Whenever a missing tooth structure is to be replaced, the dentist should consider numerous factors, including natural tooth preservation, minimal intervention, aesthetics, and cost.

CASE REPORT

A 21 year old male patient reported to Deptt. of Prosthodontics of Dr R Ahmed Dental College & Hospital, Kolkata with missing Maxillary left central incisor (Fig.1).



Figure 1 (Patient with missing maxillary left central incisor)

Patient history revealed that patient had a trauma 2 days back while playing which resulted in avulsion of his Maxillary Left Central Incisor. Avulsed tooth could not be replanted since trauma took place more than 48 hours earlier and tooth was not kept in any storage media resulting in death of PDL cells and socket was partially healed (Fig. 2).



Figure 2 (Socket has not healed completely)

So it was decided to use patient original tooth as pontic and splint it to adjacent teeth with help of Fibre Reinforced Composite. Avulsed tooth and socket were thoroughly cleaned with normal saline to clean any residual debris (Fig.3).

Cervicoincisal length of the adjacent tooth was measured and root was cut 1 to 2 mm apically to the mark considering soft tissue shrinkage during the healing process. Remove all pulpal tissue and fill the canal with composite resin (phosphoric acid and

an adhesive system must be used). Shaping and polishing of the apical end of the tooth should produce a pontic-like, smooth and ovate design (Fig.4).



Figure 3 (Avulsed tooth cleaned with normal saline)

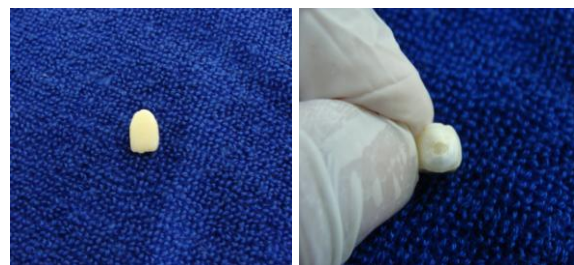


Figure 4 (Tooth cut to required cervicoincisal length, obturated with composite resin & shaped like ovate pontic)

Acid-etch (37% phosphoric acid) for 30 seconds; wash and dry without desiccating any exposed dentin; Apply an adhesive system, wait for 20 seconds, and remove excess of bonding agent with a light stream of air; light-cure each segment for 20 seconds (Fig. 5).



Figure 5 (Acid etching followed by application of bonding agent)

Apply a layer of a hybrid or microhybrid composite resin filling half of the groove; Mesio-distal width of adjacent teeth and tooth being replaced was measured and glass fibre of appropriate length was cut. Here the material of choice was Interlig which is Glass fibers with impregnated resin (Fig.6).



Figure 6 (Braided glass fiber impregnated with light-cured composite resin)

Advantages ⁽⁷⁾

- Pre-impregnated (ready to use) - saves time and material
- Glass fiber - High flexural strength
- Easy to cut - special scissors are not required

Malleable fiber - easy to adapt
 Packed in sachets - easy handling; protects fibers from light and heat
 Place INTERLIG and light-cure each segment for 40 seconds (Fig.7).



Figure 7 (Light cure Interlig for 40 seconds)

Apply a new layer of composite resin to cover INTERLIG completely and light-cure for 40 seconds, Remove excess of resin, check the occlusion, and adjust it if necessary; proceed with finishing and polishing (Fig.8).



Figure 8

6 month follow up of the patient was done. Patient was able to maintain oral hygiene and surrounding periodontal tissues were healed completely and in harmony

with natural tooth pontic resulting in very good emergence profile and aesthetic outcome (Fig.9).



Figure 9 (6 month follow up)

DISCUSSION

In the clinical photographs a slight distal tipping of natural tooth pontic can be seen, this can be avoided if we fix the extracted tooth on the desired site with a small amount of composite resin placed labially; without acid-etching which can then be removed later; light-cure the resin; To avoid curing of whole length of glass fibre they should be covered with an aluminum foil.

Some important factors should be considered before performing such restorations which are: patient's bite, parafunctional habits, inadequate occlusal clearance space for reinforced fiber. Advantages of this technique are good aesthetic results, preservation of natural crown structure, no laboratory work required, reduced psychological impact on the patient, technique is reversible and allows other restorative options to be evaluated. Micro-resiliency of pontic allows stimulation of underlying tissue and avoids excessive post-extraction ridge resorption. (8,9)

CONCLUSION

Whenever a missing tooth structure is to be replaced, the dentist should consider numerous factors, including natural tooth preservation, minimal intervention, aesthetics, and cost.

REFERENCES

1. Foitzik, M., Lennon, A.M., Attin, T., 2007. Successful use of a single retainer all ceramic resin-bonded fixed partial denture for replacement of a maxillary canine; a clinical report. *Quintessence Int.* 38, 241–246.
2. Sangur, R., Rao, B.L., Pradeep, S., Lakhyani, R., 2010. Replacement of extracted teeth with acrylic partial denture incorporating patient's natural teeth-a case report. *J. Indian Dent. Assoc.* 4 (7), 199–200.
3. Daly CG. Use of patient's natural crown as the pontic in a composite resin-retained temporary bridge. *Aust Dent J* 1983; 28: 301–3.
4. Ashley M, Holden V. An immediate adhesive bridge using the natural tooth. *Br Dent J* 1998; 184: 18–20.
5. Safirstein JJ, Owens BM, Swords RL. The resin retained natural tooth pontic: a transitional esthetic solution. *J Tenn Dent Assoc* 2001; 8: 31–3.
6. Parolia A., Shenoy M K, Thomas S M et al. Use of a natural tooth crown as a pontic following cervical root fracture: a case report *Aust Endod J* 2010; 36: 35–38.
7. <http://angelus.ind.br/Interlig-111.html>

8. Edelhoff D, Spiekermann H, Yildirim M. A review of esthetic pontic design options. Quintessence Int 2002; 33: 736–46.

9. Walsh LJ, Liew VP. The natural tooth pontic - a compromise treatment for periodontally involved anterior teeth. Aus Dent J 1990; 35: 405–8.

How to cite this article: Mittal A, Sahoo S, Bharti A et. al. Aesthetic replacement of an anterior tooth using the natural tooth as a pontic- an immediate and economic prosthesis. Int J Health Sci Res. 2015; 5(3):378-382.

International Journal of Health Sciences & Research (IJHSR)

Publish your work in this journal

The International Journal of Health Sciences & Research is a multidisciplinary indexed open access double-blind peer-reviewed international journal that publishes original research articles from all areas of health sciences and allied branches. This monthly journal is characterised by rapid publication of reviews, original research and case reports across all the fields of health sciences. The details of journal are available on its official website (www.ijhsr.org).

Submit your manuscript by email: editor.ijhsr@gmail.com OR editor.ijhsr@yahoo.com