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“A Natural Tooth Pontic for Aesthetics- A Case Report”

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ABSTRACT

Loss of anterior tooth due to any reason like root resorption, trauma, periodontal disease or endodontic failure can be a deeply traumatic situation for most patients & needs immediate attention. An immediate replacement is necessary in order to avoid aesthetic, masticatory & phonetic difficulties.

This paper describes the immediate replacement of lateral incisor using composite resin with the natural tooth crown as pontics. It is a simple and economical method. It requires minimal or no tooth preparation tooth & also it is a reversible technique with no additional lab costs.

Key words: Pontic, Natural teeth, Aesthetics, Composite

INTRODUCTION

Loss of tooth in aesthetic zone is very disheartening to patient. Most of the patients demand immediate treatment because they usually suffer from psychological trauma and their social life gets affected by compromised aesthetic^{1,2}. Numerous treatment options are available & the foremost is Dental Implant but the total duration of treatment & high cost prevents use of it. Fixed partial denture like bridge can also be used but it is not a conservative option because unnecessary healthy tooth need to be prepared. Another method for replacement of missing tooth is removable partial denture which is not acceptable to most patients. Use of patient's own tooth as a pontic and bonding it to adjacent teeth is more conservative and less time consuming compared to other techniques. This technique is of great use because it brings the patient's smile back to his or her face and more the patient's tooth, his

confidence will be restored^{3,4}. Replacement of missing anterior tooth using a natural tooth pontic technique is an intermediary restoration and may not be used as permanent restoration for long term.

Case Report-A 30 year old male patient reported to the Department of Prosthodontics people's dental academy with chief complaint of mobility in the front region of the upper jaw. Patient gives history of trauma one week back after which he noticed mobility in the upper front tooth which gradually increased to the present state. On intra-oral examination Grade II mobility was found with left lateral incisor and the involved tooth was not discoloured [figure 1].



Figure 1- Preoperative Photograph

Intraoral periapical radiograph was taken which shows no fracture of the involved tooth. Adjacent teeth were checked for vitality and showed normal response. Both clinical and radiographic findings stipulated extraction of the traumatized lateral incisor followed by immediate replacement of the teeth as the patient was getting married within 4 days.

After thorough examination it was planned that atraumatic extraction will be done followed by natural tooth pontic. The tooth was extracted atraumatically under local anesthesia and haemostasis achieved [figure 2].



Figure 2-Post Extraction

Then the extracted tooth was placed in normal saline. The socket was curetted. After curettage the socket was irrigated with betadine solution. The buccal and palatal cortical plates were kept intact. The root of the extracted tooth was scaled and root planned to remove all deposits. Root canal therapy was performed on the extracted tooth. Access opening was created on the palatal aspect and the pulp was extirpated. Biomechanical

preparation was done and the canal was irrigated with normal saline and hydrogen peroxide. Obturation was then done using gutta purcha. The apical third of the root was resected and the apical end of the root was sealed with composite restoration. The access opening was also sealed with composite restoration [figure 3].



Figure 3-Apical Seal Filled With Composite

The length of the natural tooth pontic was determined by measuring the distance from incisal edge of the central incisor to the extraction site. Some additional length was added so the pontic would be touching the gingival tissue when the extraction site healed. The extracted tooth was measured with a periodontal probe to the length needed. The root was cut from the crown with a bur and then shaped with a flame- shaped finishing bur. The gingival aspect of the tooth was smoothed and shaped to be rounded [figure 4].



Figure 4-Root Resection

The natural tooth pontic was then etched with a phosphoric acid etchant for 10 seconds, rinsed

with water and dried. A resin adhesive (Prime & Bond, Dentsply,) was painted on the etched surfaces and cured. It was then put aside until it was time to bond it to place The teeth adjacent to the pontic in the mouth were etched for 10 seconds with a 37% phosphoric acid gel. The teeth were then rinsed with an air-water spray for 10 seconds and gently dried. Prime and bond, was applied to the etched enamel surfaces using a disposable brush and cured. The tooth pontic was picked up with cotton pliers and placed in the area where it was extracted. Incisal edge height was adjusted according to the adjacent teeth and was splinted with the adjacent teeth with composites.

A flowable composite resin (Tetric Flow, Ivoclar, Vivadent) was applied on the lingual surfaces of the pontic and adjacent teeth to an even thickness and light cured. The composite resin was finished and polished to remove any excess restorative material and aesthetic result achieved. Some amount of occlusal grinding was done and tooth was kept completely out of occlusion [figure 5].



The extraction socket would heal around the root and this will result in a seat for an ovate pontic for future replacement of the tooth

DISCUSSION

The restoration of a smile is the most appreciating & valuable services provided by a dentist to their patients. Replacement of missing anterior teeth enhances the appearance of the patient which is

appreciated by patient and population. Immediate replacement of lost anterior teeth prevents psychological & social trauma to the patient.

Final restoration may be removable, fixed or Implants irrespective to the final restoration, first line of treatment should be provisionally restore patients aesthetic appearance while functionally stabilizing the compromised arch. Replacing missing tooth using natural tooth pontic is an intermediary restoration and should not be used as a permanent restoration.

In the past there have been a number of different techniques described in the restorative dentistry literature for splinting teeth and adding natural tooth pontic denture tooth or composite resin tooth pontic. A variety of periodontal splint materials such as the multi-flex orthodontic wires, steel or nylon meshes, glass, wire or fibre splint etc. can be used to splint the pontic to the adjacent stable abutments via composite resin⁵. These pontics were connected to the adjacent teeth with adhesive composite resins, wire, metal mesh, nylon, mesh and cast metal frameworks bonded to the adjacent teeth.

The advantages of retaining the patient's natural crown are⁶:-

1. It provides the optimal pontic in terms of shape, colour, size and alignment.
2. Excellent aesthetic results.
3. Preservation of natural crown structure.
4. Extracted tooth can be replaced at the same visit.
5. No laboratory work required.
6. Reduces psychological impact on the patient.
7. This technique is reversible and allows

other restorative options to be evaluated.

8. Can be used as an interim or definitive prosthesis.
9. Micro-resiliency of the pontic allows stimulation of underlying tissue and avoids excessive post-extraction ridge resorption.

This technique is indicated when⁶-

1. Patients desiring to have natural tooth back in place when it is due for extraction.
2. Patients wanting a minimally invasive procedure.
3. Patients desiring fast & immediate fixation in an aesthetically important area.
4. The extracted tooth crown and abutments must be in reasonably good condition.
5. When involved tooth is having fractured root.

Contraindications for the natural tooth pontic are following-

1. Interfering parafunctional habits.
2. Short clinical crown for bond adhesion.
3. Inadequate occlusal clearance space.
4. Inability to maintain isolation of field during bonding procedures.

5. Primary dentition.

Conclusion:

Natural tooth pontic is a simple and cost effective treatment option. It can be considered a non-invasive and long term provisional treatment option providing very good aesthetics and functions. The main limiting factors with this technique are patient compliance with maintenance of meticulous oral hygiene, limited functional efficiency, chances of discoloration of the pontic and chances of splint fracture. Periodic recall visits for evaluation are required.

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