Case Report

Natural Tooth Pontic: An Interim Restoration for Compromised Aesthetic Conditions

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Abstract

Loss of teeth in the anterior region leads to compromised aesthetics. It is physiologically as well as socially damaging situation. Tooth loss can be due to excessive bone loss, trauma or other endodontic reasons. The replacement of lost tooth depends on several factors. After removal of the tooth for a time being, temporisation may be required before placement of permanent restoration. Permanent replacement can be in the form of removable prosthesis or fixed partial dentures. The first line of treatment after extraction of anterior teeth, irrespective of final restoration, is placement of temporary prosthesis. This article describes a case of natural tooth used as a pontic splinted to adjacent teeth using a fibre-reinforced splint and composite following extraction of tooth in the maxillary anterior region.

Keywords: Aesthetics, natural tooth pontic, splinting, temporisation

Introduction

Extraction or missing teeth, especially in the maxillary anterior region, is of a great aesthetic concern to patients. It may be a catastrophic event for the patient. Loss of anterior tooth may be due to severe bone loss owing to periodontal disease that leads to severe recession, mobility and extrusion of tooth. Apart from periodontal disease, loss of tooth may be due to trauma, root resorption or other endodontic problems. Rehabilitation of the tooth that is affected by severe periodontal disease is a serious challenge, especially in the anterior region.[1]

Numerous factors have to be considered before missing tooth is replaced. The most important factor is the time lapse after the removal of tooth. Patients usually demand replacement at the earliest possible and sometimes demand immediate replacement. Splinting of the extracted tooth using fibre-reinforced splint and composite resin enables proper healing with acceptable aesthetics[2] for a time being until final prosthesis is given to the patient.

This case report describes the splinting of a natural tooth pontic that was extracted due to severe periodontal disease (to adjacent teeth) using fibre-reinforced splint and composite resin with minimal cost.

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Case Report

A 32-year-old female patient reported to the Department of Periodontology, K. M. Shah Dental College and Hospital, with a complaint of mobility and extrusion of maxillary left lateral incisor. The patient was systemically healthy. On clinical examination, 22 was Grade 3 mobile, with Miller's Class IV gingival recession, and was extruded from the socket. Radiographic examination revealed horizontal bone loss up to apical 1/3rd of the tooth [Figures 1-3]. Both clinical and radiographic examination revealed hopeless prognosis of 22 due to extensive horizontal bone loss and hence the extraction of 22 was indicated. The treatment plan included extraction of 22 followed by replacement of 22. Due to aesthetic and economic concerns, splinting of the natural tooth as pontic after extraction was decided after obtaining patient's consent.

The steps advocated were as follows:

- Step 1: After the treatment planning, atraumatic extraction of 22 was done after achieving adequate anaesthesia with

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0.2% lignocaine with adrenaline. The extraction socket was grafted with autologous Platelet Rich Fibrin (PRF)[3] and a single interrupted sutures was taken. The patient was recalled after 3 days for the splinting of natural tooth pontic [Figures 4 and 5]

- Step 2: Scaling and root planing was done on the extracted tooth to remove all the debris and render the root surface smooth. The tooth was then preserved in normal saline until it was splinted at day 3, to prevent it from drying
- Step 3: On the 3rd day after extraction, the distance from the healing socket to the incisal edge of the adjacent teeth was measured and the natural tooth to be splinted was reduced accordingly. Residual pulpal tissues were extirpated using endodontic files, and the space was filled with flowable composite resin after etching and bonding. The natural tooth was shaped in the form of a ridge lap pontic, and the apical end of the tooth was smoothened[4]
- Step 4: After etching and application of bonding agent on the adjacent teeth starting from 12, 11, 21 and 23, natural tooth pontic was splinted with the help of fibre-reinforced splint and composite resin [Figures 6 and 7].[5,6]

Post-treatment profile was significantly improved and satisfying for the patient [Figure 8].

Figure 1: Pre-treatment profile of the patient.

Figure 3: Pre-treatment view of extruded 22.

Discussion

Loss of teeth in the anterior region results in compromised aesthetics and function. Modalities for the replacement of the missing teeth are various. Most commonly used replacement option is either by placement of single-tooth implant or fixed partial denture, i.e., porcelain fused to metal or all ceramic crowns. A more conservative approach to replace a single missing tooth is provided by the placement of implant-supported prosthesis. However, some patients reject this treatment modality owing to its high cost.[7] Another treatment modality is removable partial denture, but it often results in compromised aesthetics due to the incorporation of clasps in the denture and inconvenience due to non-fixable nature.

In the present case, a natural, aesthetic and cost-effective option for immediate replacement of extracted tooth in the maxillary anterior region is used. Natural tooth used as a pontic offers the advantages of being the right size, proper color and shape as well as provides positive patient reinforcement.[8] Further, no adaptability period is required in this case as with removable partial dentures. Using fibre-reinforced splint, the aesthetics were maintained. Although a successful treatment is achieved

Figure 2: Intra-oral periapical radiograph of 22.

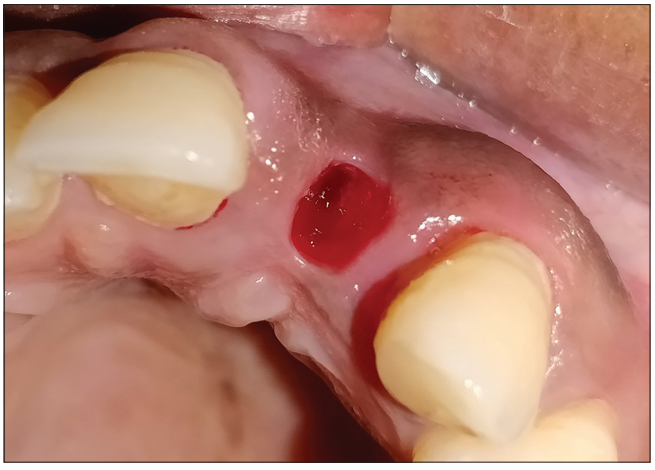

Figure 4: Extraction socket in relation to 22.

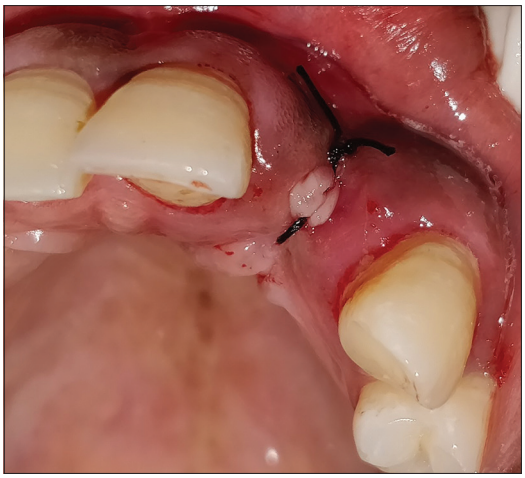

Figure 5: Platelet-rich fibrin placement in extraction socket.

Figure 6: Post-splinting palatal view.

Figure 7: Buccal view of splinted natural tooth pontic.

Figure 8: Post-treatment profile of the patient.

with this technique, there are drawbacks that accompany it. The most important disadvantage of this type of treatment is limitation in functional efficiency.[9] Other limitations include difficulty in maintenance of oral hygiene around pontic and chances of breakage of splint.

Quirynen *et al*.[10] have evaluated the natural tooth as pontic with acrylic resin in lower anterior teeth with periodontal breakdown, and the favourable results were depicted. Despite the drawbacks, this technique is useful in maintaining aesthetics and space after extraction of teeth in aesthetic zone for a period up to which permanent prosthesis can be given.

Conclusion

Although temporary, natural tooth can be an excellent option for the replacement of missing anterior teeth. Patient's positive psychological response, cost effectiveness, and achievement of excellent soft tissue contours make this technique useful. However, knowing the limitations, patients' motivation and proper case selection plays a key role in successful treatment outcome.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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