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Immediate temporization with natural tooth pontic

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Abstract:

In certain clinical scenarios, using an intact natural tooth which is in good clinical condition as pontic for interim duration could offer benefits such as excellent color, shape, and size match, positive psychological value, minimal cost, and minimum chairside time with no laboratory procedure involved. Natural tooth pontic suitably modified and bonded to adjacent teeth enables proper healing in the area without compromising the anterior esthetic demands of the patient. In the present study, a clinical technique for immediate interim tooth replacement is being presented, utilizing the clinical crown to assist the clinician in providing an esthetically acceptable treatment option.

Key words: Esthetics, pontic, temporization

Esthetics and function of the orofacial region are very important aspects of human life, which are affected by anterior tooth loss regardless of personal factors such as age, gender, and level of education, eventually impacting the quality of life.[1] In certain clinical scenarios, using an intact natural tooth which is in good clinical condition as pontic for interim duration could offer benefits such as excellent color, shape, and size match, positive psychological value, minimal cost, and minimum chairside time with no laboratory procedure involved.[2]

Natural tooth pontic (NTP) suitably modified and bonded to adjacent teeth enables proper healing in the area without compromising the anterior esthetic demands of the patient. NTP offers excellent color, shape, and size match and thus enhances the psychological and social acceptability of the patient with a minimal cost involved.[3]

Conventionally, the solution to this clinical problem has been a removable temporary acrylic prosthesis, prefabricated acrylic teeth, or fixed prosthesis such as a fixed partial denture or an implant. Acrylic removable partial dentures (RPDs) placed immediately after the tooth extraction are bulky, may be uncomfortable for the patient, and may impede healing. They exhibit esthetic and functional disadvantages and inadequately preserve the extraction socket.[3] Fixed prosthesis like fixed partial denture and implant although are a permanent solution but a time consuming option and may require one or more visits. In the present study, a clinical technique for immediate interim tooth replacement is being presented, utilizing the clinical crown to assist the clinician in providing an esthetically acceptable treatment option.

Case Report

A patient aged 18 years reported to the Department of Conservative Dentistry and Endodontics, BJS Dental College Hospital and Research Institute, Ludhiana, with chief complaint of mobility of the left central incisor since 1 week. Her medical history was noncontributory. She had experienced an accident that resulted in mobility in her left upper central incisor.

Clinical findings associated with left upper central incisor confirmed patient's chief complaint. An intraoral periapical radiograph revealed a horizontal root fracture line at the middle third in relation to the maxillary left central incisor [Figure 1]. On visual examination, the crown presented the same color, shape, and translucency of the adjacent central incisor.

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The patient's oral hygiene status was assessed to be fair. It was decided to extract the left central incisor and use it as an NTP and splint it to the adjacent teeth using composites. The tooth was extracted under infiltration anesthesia without much manipulation of the alveolar bone [Figures 2 and 3]. Following extraction and root resection of the maxillary central incisor, the pulp tissue was removed, and light cure composite resin was cured within the canal [Figure 4]. A modified ridge lap design was given to the NTP which woud take care of oral hygiene and esthetics. The extracted tooth pontic and abutment teeth were cleaned with pumice, washed, and air-dried. The proximal areas (adjacent to the extraction site) and approximately 2–3 mm of the facial and lingual surfaces were acid-etched (Protech SS white™). The bonding agent (Adper™ Single Bond 2 Adhesive, 3M ESPE) was applied to the acid-conditioned surfaces and polymerized. An appropriate length of a ligature wire was cut and adapted to the lingual surface which was etched and primed and light cured. Flowable composite (Filtek Z350) was added in the proximal surface and polymerized using light cure. Excess composite resin material was removed with a fine diamond instrument [Figure 5]. Final finishing and occlusion were checked and inspected for any interference and eliminated. The patient was instructed to avoid excessive chewing pressure or habits that could dislodge the natural tooth replacement.

Discussion

The immediate replacement/temporization of a natural anterior tooth has great psychologic value for most patients although the procedure may be temporary. Conservative bridges are especially indicated for young patients because the teeth usually have large pulp chambers and short clinical crowns. In addition, they can be viable alternatives to conventional fixed bridges in circumstances where age, expense, or clinical impracticality are considerations.[4] NTPs also can be placed as interim restorations until an extraction site heals if conditions require a conventional bridge or an implant.

A resin-bonded splint through the acid-etch technique is a conservative and effective method of protecting the

Figure 1: Preoperative radiograph

Figure 2: Extracted tooth fragment

Figure 3: Post extraction site

Figure 4: Recontoured tooth pontic

Figure 5: Natural tooth pontic splinted

teeth from further injury by stabilizing them in a favorable occlusal relationship**.** Other options of rehabilitations include a removable appliance, fixed prosthesis (bridges implants). Drawbacks of RPD include irritation and inflammation of the underlying gingiva, compromised esthetics. Moreover, partial removable dentures may be subjected to fracture due to reduced strength; hence, the durability of the prosthesis is questionable. In this regard, fixed acid etch option may offer several advantages over removable appliances including faster temporization, enhanced esthetics, ease of use, low-cost alternative, and avoidance of becoming accustomed to a removable prosthesis, curtailment of extensive laboratory procedures for the time being or till the time the patient prepares is/her mind as the patient's own tooth would be utilized and ultimately protection of the extraction site reversible, so that all traditional treatment options for single tooth replacement remain open.[5]

However, it should be noted that because of the conservative preparation and bonded nature of all of these bridge types, retention is never as strong as for a conventional bridge. As part of informed consent, patients should be told of the potential although remote chance of swallowing or aspirating bonded bridges that may get dislodged.[6] Furthermore, to reduce the risk of dislodgement, patients should be cautioned not to bite hard foods or objects with bonded bridge pontics.

All the more the patient should be guided about more retentive options such as a fixed bridge and implants for the near future that may offer a greater and predictable longevity.[7]

Conclusion

Natural teeth serve as an excellent yet interim treatment modality for immediate temporization following extraction in the anterior tooth segment. Patient's positive psychological response, cost-effectiveness, and achievement of excellent soft-tissue contours make this technique very useful.

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Conflicts of interest

There are no conflicts of interest.

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