



CASE STUDY

NATURAL TOOTH PONTIC: SALVAGING SMILE IN A TRICE

^{*}¹Dr. Ameya G. Moghe, ²Dr. Kamedh Y. Chowdhary, ²Dr. Prabhuji, M. L. V.,
³Dr. Mrinalini D. Kunte and ⁴Dr. Himani S. Gupta

¹Department of Periodontology, Dr. G. D. Pol Foundation's YMT Dental College & Hospital, Kharghar, Navi Mumbai 410210

²Department of Periodontics, Krishnadevaraya College of dental sciences & Hospital, Bangalore, Karnataka, India- 562157

³Department of Conservative Dentistry & Endodontics, Dr. G. D. Pol Foundation's YMT Dental College & Hospital, Kharghar, Navi Mumbai 410210

⁴Department of Periodontics, M.G.M Dental College & Hospital, Junction of NH4 and Sion-Panvel Expressway, Sector 1, Kamothe, Navi Mumbai Pin 410 209

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ABSTRACT

Teeth maintain the integral balance between structure, function, and aesthetics. Loss of anterior tooth not only poses a social stigma for patients but also an additional challenge for the dentist as all patients seek immediate replacement, which in most of the cases is not practical and easily affordable. Most procedures involve preparation of adjacent teeth or are too costly in the form of immediate implants. Natural tooth pontic is less time consuming, easily fabricated, with a predictable outcome and can serve as an excellent interim restoration. It also concentrates on maintaining aesthetics and the soft tissue architecture. This paper describes report of four cases in which immediate replacement of anterior tooth is done using a fibre composite resin with natural tooth serving as pontic.

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INTRODUCTION

Teeth serve the purpose of maintaining an integral balance between structure, function, and aesthetics. Loss of teeth results in definitive dilapidation of this balance. Removal of a tooth in the anterior region; due to trauma, advanced periodontal disease or failed endodontic treatment; has always been a challenge for the dentist. Anterior tooth loss poses additional gamble because the patient seeks an immediate replacement, which in most cases is not easily affordable. The mundane conventional modalities for this immediate replacement include jiffy dentures, fixed partial dentures like the Maryland bridges, Rochette bridge and immediate implants. (Wohrle, 1998) Most of the procedures either involve

preparation of adjacent teeth or are too costly (immediate implants). They also pose problems due to their bulky nature and may impede with the healing of the tissues. The exacting nature of these procedures makes their use limited. (Jordan et al., 1978) Natural tooth pontic serves the purpose of immediate temporary replacement in the anterior region by overcoming the obstacles faced while utilising the above-mentioned techniques.

Case report

A patient aged 18 years reported to the Department of Periodontics with a chief complaint of mobility of tooth in the lower anterior region. Intra-oral examination revealed a periodontally involved lower right central incisor displaying grade III mobility and class III recession according to Miller's classification. (Miller, 1985) Extraction was advised in relation to the associated tooth due to its poor prognosis. The patient

*Corresponding author: Dr. Ameya G. Moghe,

Department of Periodontology, Dr. G. D. Pol Foundation's YMT Dental College & Hospital, Kharghar, Navi Mumbai 410210

being a young female desired immediate replacement of the same. Hence, an immediate temporary replacement procedure in the form of a natural tooth pontic was planned.

Stepwise clinical procedure

A thorough oral prophylaxis was carried out before commencing the procedure. The tooth was then extracted atraumatically under local anaesthesia. After adequate haemostasis was achieved, the procedure was continued. The steps include extra-oral & intra-oral procedures.

Extra-oral Procedure

1. Root planing of the extracted tooth was done to make the root surface free from debris & remaining periodontal attachment.
2. The apico-coronal dimension of the pontic was determined using soft tissue at the extraction site as the reference so as to have an emergence profile.
3. Sectioning of the remaining radicular portion was done using an air-rotor handpiece and a straight diamond point.
4. Pulpectomy was performed from the apical end using conventional endodontic files.
5. After pulpectomy root canal was irrigated with 5.2% sodium hypochlorite and 3% hydrogen peroxide solutions alternatively to remove the pulp tissue in toto.
6. The apical end of the root canal was sealed off using glass ionomer cement. This was carefully contoured to give smooth, rounded margins so as to avoid soft-tissue impingement and plaque retentive areas.

7. A 2 step etching and bonding procedure using commercially available composite kit was carried out on to the natural tooth pontic.
8. The desired length of a commercially available fiber-glass splint was cut and bonded on the lingual aspect of the central incisor.

Intra-oral Procedure

1. Intra-orally the etching and bonding of the middle 1/3rd of the lingual surfaces of the teeth to be involved was carried out to receive the splint.
2. The pontic along with the splint should be adapted to achieve maximum attainable aesthetic outcome. Wedges must be placed in the inter-proximal areas to avoid blockage by composite. Thus, making the area accessible for cleansing.
3. Rest of the splint was then re-inforced using flowable composite and cured.
4. The final contouring was done by finishing & polishing of the composite to attain a confluent and suave splint.

The patient was instructed about the delicate nature of the splint and advised not to bite anything hard using the concerned teeth. Oral hygiene instructions must be given to the patient for excellent maintenance of the splinted area. The use of inter-dental aids was also advocated. The patient was scheduled for a follow-up visit after 2 weeks initially, followed by evaluation based on the maintenance by the patient on subsequent visits.

CASE PHOTOGRAPHS



Fig. 1. Case 1 Pre-operative view



Fig. 2. Hemostasis after extraction



Fig. 3. Extracted lower right central incisor

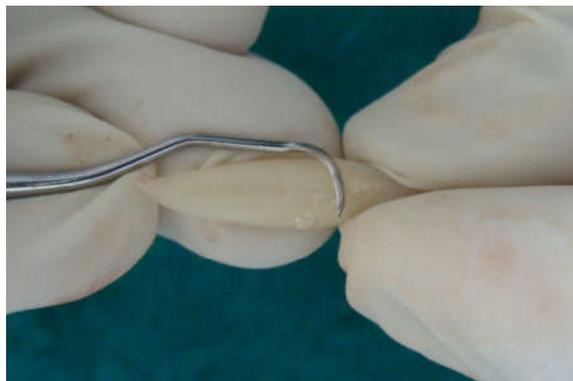


Fig. 4. Root planing



Fig. 5. Sectioning of the root

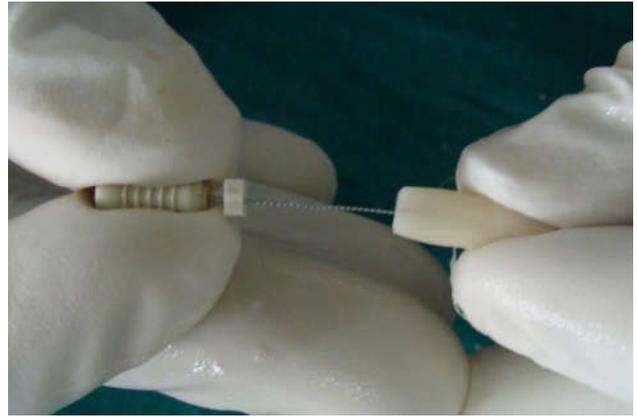


Fig. 6. Pulpectomy using endodontic file

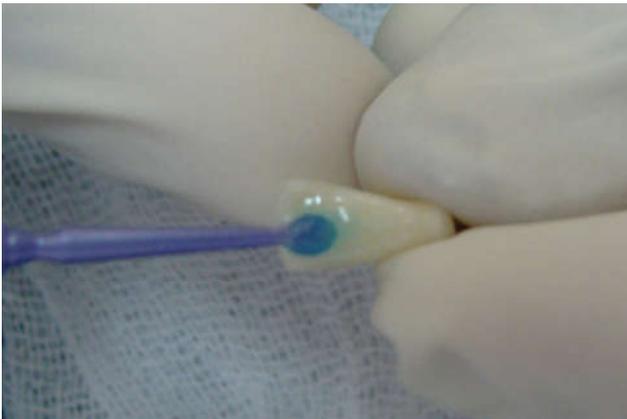


Fig. 7. Etching of the pontic

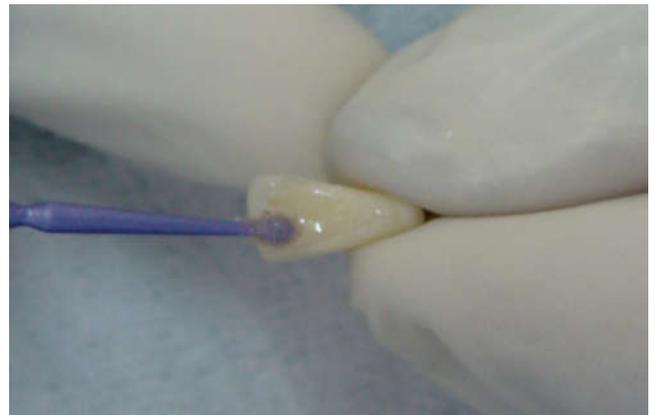


Fig. 8. Application of bonding agent

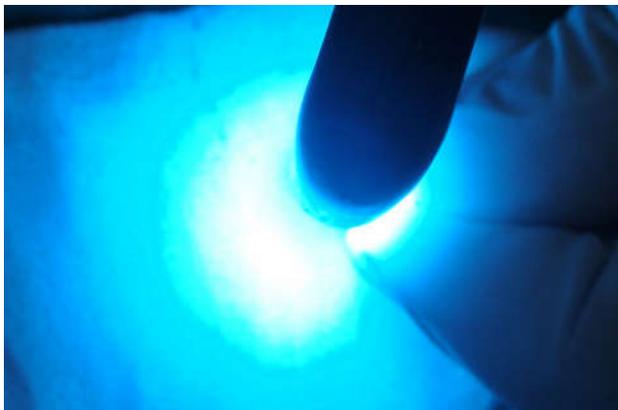


Fig. 9. Curing done



Fig. 10. Intra-oral etching of lower anteriors



Fig. 11. Application of bonding agent



Fig. 12. Final result



Fig. 13. Case 2 Preoperative Photograph view



Fig. 14. Socket After Extraction



Fig. 15. Final Result



Fig. 16. Case 3 Preoperative Photograph



Fig. 17. Socket After Extraction



Fig. 18. Final Result

Case-2

A female age 55 years came to the department of Periodontics, Krishnadevaraya College of Dental Sciences Bangalore, with a chief complaint of mobility in the lower anterior tooth. On examination the lower right lateral incisor elicited grade III mobility. The tooth had a hopeless prognosis and was indicated for extraction. Atraumatic extraction was carried out maintaining the soft tissue architecture as intact as possible.

The patient being socially active insisted on immediate replacement of her tooth. Hence she was explained the option of natural tooth pontic followed by fixed partial denture or implant after the space was healed.

Case-3

A male patient 35 years of age visited the department of periodontics, Krishnadevaraya College of dental sciences, with

a chief complaint of difficulty in chewing. Thorough examination revealed an extruded grade III mobile left Mandibular lateral incisor. Patient was reluctant for any artificial replacement hence an option of natural tooth pontic was explained to the patient. Atraumatic extraction was performed. After extraction the above mentioned steps of natural tooth pontic were followed and tooth was splinted correctly in the occlusion.

DISCUSSION

An immediate temporary replacement is an ideal interim restoration. The most commonly used one is the transitional acrylic resin removable partial denture. (Weintraub, 1989; Ettinger, 1975) These have the disadvantage of traumatizing the soft tissue, causing plaque retention and food impaction. The Maryland & Rochette fixed partial dentures utilise a technique sensitive procedure that requires adequate tooth preparation. Though they are esthetic, mechanical failure rate is high due to frequent debonding. (Berekally and Smales, 1993) Immediate implants though highly esthetic, cannot be indicated in every situation as a result of the pre-surgical requisites essential for obtaining initial stability. Natural tooth pontic can serve as an abutment over the immediate implant.

Natural tooth pontic (Portera, 1981) serves an excellent immediate temporary replacement in the anterior tooth region as:

1. It can be fabricated chair-side after immediate extraction.
2. Utilises patient's natural tooth thus giving high esthetic appeal.
3. Requires minimal armamentarium.
4. Maintains emergence profile.
5. Maintains optimal soft tissue margins for future rehabilitation.
6. Least hard and soft tissue morbidity
7. Easily repairable.
8. Cost-effective.

Conclusion

Satisfying the patient's aesthetic demand is a prime goal in dental practice. The natural tooth pontic is attractive mainly because it entails fewer appointments and can offer outstanding immediate results. Also the entire procedural control rests in the operator's hands. This treatment vista also offers the preservation of ovate soft tissue profile beneficial for future permanent prosthetic replacement. This treatment option aids to attain maximum aesthetics without the use of complicated techniques & materials while maintaining excellent periodontal health of adjacent teeth.

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