

## Natural Interim Tooth Pontic(NTP): A Case report



### Medical Science

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**Dr Kashish Singh**

3rd year PG student Department of Periodontology Bharati Vidyapeeth Deemed University Dental College & Hospital Pune

**Dr Amita Mali**

Principal & HOD, Department of Periodontology, Bharati Vidyapeeth Deemed University Dental College & Hospital, Pune

**Dr Priyanka Agrawal**

Assistant Professor, Department of Periodontology, Bharati Vidyapeeth Deemed University Dental College & Hospital, Pune

### ABSTRACT

*The loss of anterior teeth can be psychologically and socially damaging to the patient. Replacement can be provisional, semi-provisional or permanent in nature. The start of the definitive treatment depends on many factors and thus may require short to long temporization times. Irrespective of the final treatment, the first line of treatment would be to provisionally restore the patient's esthetic appearance while functionally stabilizing the compromised arch. A natural tooth pontic offers the benefits of being the right size, shape and color. When the crown of the tooth is in good condition, it can be temporarily bonded easily to the adjacent teeth with light -cured restorative material. This paper describes the immediate replacement of maxillary central incisors using a fibre-composite resin with the natural teeth as pontic. 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 used as an interim measure.*

### INTRODUCTION

Tooth loss in esthetic zone because of trauma, periodontal disease, failed endodontic therapy, root resorption is very challenging for dentist and need immediate treatment(1,2). Most of the patients demand immediate treatment because they usually suffer from psychological trauma and their social life gets affected by compromised esthetics (3,4). Various treatment modalities like Fixed partial denture (FPD), Implants, Removable partial denture (RPD) are there but all has its own advantages and disadvantages. Use of dental implant as restoring and replacement of missing tooth is the best option for such situations, but high cost of implant prevents use of it and as a result less expensive treatment options should be considered. Fixed partial denture (FPD) like bridge can also be used but it requires preparing of adjacent teeth and using them as abutments to support pontic and it is not a very conservative type of restoration because there is always chance of loss of adjacent prepared teeth by caries or periodontal disease. Another method for replacement of missing tooth is removable partial denture which is not acceptable by many patients. Since the introduction of adhesive dentistry and many improvements which are achieved in this field, the acid etch bridge technique has been introduced in which a fiber reinforced composite or even patient's own natural tooth in cases where crown portion of tooth is intact and sound can be used (5). 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 and since such patients suffer from severe psychological trauma due to loss of tooth in esthetic zone, this technique is of great use because it brings the patient's smile back to his or her face and more than patient's tooth, his confidence is restored (1,2). A natural tooth pontic offers the benefits of being the right size, shape and color. When the crown of the tooth is in good condition, it can be temporarily bonded easily to the adjacent teeth with light -cured restorative material (2,6). This article paper describes clinical steps of natural tooth pontic as an interim restorative option for replacement of extracted central incisors.

### CASE REPORT

A 28-year-old healthy male patient reported to the Department of Periodontology, Bharati Vidyapeeth Deemed University Dental College & Hospital, Pune, with a complaint of fractured maxillary central incisors. The teeth had been traumatised by fall injury few days back for which he was treated with fixation plate (Erich arch

wire) on mandibular teeth. On clinical examination, there was an oblique crown root fracture extending to mid-root on both the maxillary central incisors. Fracture was reconfirmed by advising intra oral peri-apical (IOPA) radiograph. Adjacent lateral incisors were checked for vitality and showed normal response. Both clinical and radiographic findings stipulated extraction of the traumatised central incisors. Because the patient was highly concerned with aesthetics, the possibility of using the clinical crown as a natural pontic was proposed. The teeth were atraumatically extracted under local anaesthesia (1:200000) lignocaine and haemostasis was achieved (Fig-1). The extracted teeth crown was separated from fracture root using diamond disc and stored in saline until chair side procedure.

### Customising the extracted natural tooth

After sectioning the newly created apical opening of the pulp, canal was cleaned, enlarged slightly and sealed with resin composite. A modified ridge lap shape was given to cervical area of the pontic teeth to facilitate cleaning and appearance of natural emergence profile.



**Figure-1** Extraction socket Post extraction

### Fibre strip measurement

A fiber was cut for connecting the pontic teeth to adjacent teeth. To measure the length of fiber needed, a piece of dental floss was placed on the surfaces of the teeth, extending from the left maxillary 1<sup>st</sup> premolar to right maxillary 1<sup>st</sup> premolar .

### Teeth preparation for bonding

Teeth were isolated, cleaned and dried. The pontic was also cleaned with pumice, washed and dried. The abutment teeth and pontic were then etched with 35% phosphoric acid for 30 sec, washed and dried. Bonding resin was applied to the etched enamel and cured. A thin layer of composite resin was placed across the abutment teeth and pontic. The pre-cut fibre was thoroughly wetted using the resin, placed over the composite and cured. A further layer of composite was placed over the tape, ensuring that all of it was covered by composite and cured (Fig-2). Excess composite resin was removed and occlusal interferences were checked in protrusion and lateral excursions. Finishing and polishing procedures were carried out using composite finishing discs and stones (Fig-3). Oral hygiene instructions were given to the patient. Since the teeth were joined together it was important to demonstrate the patient about oral hygiene instructions & maintenance as how to clean under pontic and the gingival embrasure areas between the teeth using superfloss. First recall appointment was made 1 week later. The patient was highly motivated by the aesthetic result.



Figure-2 Fiber splint

### DISCUSSION

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. This technique can not be used for every patient and some important factors should be considered before performing such restorations which among them are: patient's bite, interfering parafunctional habits, inad-

equate occlusal clearance space for reinforced fiber or orthodontic wire composite resin bonding, inability to maintain isolation of field during bonding procedures, primary dentition and high esthetic expectations of patient. This technique have some advantages like: good aesthetic results, preservation of natural crown structure, immediate pontic to maintain & preserve inter-papillary soft tissue during healing period, no laboratory work required, reduced psychological impact on the patient. This 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 (5,7-9). However appropriate patient education and instruction to clean the gingival embrasures and avoid having heavy bite is very critical and important.



Figure-3 Tooth pontic

### CONCLUSION

Management of the consequences of trauma can be as challenging as the treatment of the traumatic injury itself. Natural tooth crown pontic can be placed as an interim restoration until an extraction site heals which later can be replaced by a conventional bridge or an implant. In this case report, the technique used offers a simple, less time consuming, provides good esthetic and cost-effective treatment option for the replacement of a fractured tooth using its own natural coronal portion. It can be considered a hygienic, non-invasive and long-term provisional treatment providing superior aesthetics and function. However, this procedure is highly operator dependent and demands appropriate case selection and precise technique.

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