



## Comprehensive Restoration of Traumatized Carious Primary Incisors

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### Abstract

The healthy teeth are indispensable for beautiful smile. Early childhood caries affected teeth of child are susceptible to dental trauma. Child's traumatized carious teeth can produce complexities for the child, parents and dentist also. This paper illustrates restoration of optimum oral health under general anesthesia for a 3-year-old girl with severe ECC affected with fractured maxillary incisors.

**Keywords:** Early childhood caries; Dental caries, Children, Dentoalveolar trauma

### Introduction

Early childhood caries (ECC) is mainly widespread chronic diseases affecting children [1]. The prevalence is 1-12% in developed nations and 70%, But in India, a prevalence of 44% has been observed [2].

It is infectious with multiple causes and rapidly progressing immediately after tooth eruption. ECC leads to tooth pain, abscess, chewing inability disturbing the child's diet, nutrition and sleep. Ultimately it has effect on the child's speech, general health, and self-esteem [3]. ECC affected teeth of child are susceptible to dental trauma.

Reported prevalence of dento-alveolar injuries is 6% to 37% [4]. The prevalence of traumatic dental injuries for 4- to 6-year-old children in India was 76.13% [5]. Dental injuries are mostly result of sports, automobile accidents and associated falls. Maxillary incisors are usually involved in dental trauma and crowns are often broken [6]. Child's traumatized carious teeth can produce complexities for the child, the parents and the dentist also [7].

This paper illustrates restoration of optimum oral health under general anesthesia for a 3-year-old girl with severe ECC affected with fractured maxillary incisors.

### Case Report

Three year old girl child reported to the private dental office with a complaint of broken upper front teeth with bleeding from teeth while brushing and eating. Known allergies or systemic problems to the child were not present. Patient's behavior was definitely negative as per Frankl behavior rating scale. Dental trauma was caused by a fall on ground while playing about 4 months earlier. Lip or soft tissue lacerations or evidence of alveolar bone fracture was not found. Intraoral examination revealed fractured and carious 51 (maxillary right primary central incisor). Complete crown fracture of 51 with carious involvement and pulp polyp was observed. Teeth 52, 61 and 62 were also involved by dental caries (Figure 1 and 2).

Since, child was 3 year old with low communication skills having definitely negative behavior and also required urgent attention for pulp polyp; after taking parent's consent, diet analysis, counseling, and pediatrician's consultation the dental treatment under general anesthesia was planned. Pulp poly excised and pulpectomy procedure was performed for 51 using metapex (Figure 3). About 3 mm of the metapex was removed from the coronal area of root canal and restorative glass ionomer cement was applied. Later, etching of tooth 51, 61 with 35% phosphoric acid for 20 seconds done and bonding agent was applied and cured for 20 seconds. Tooth 51, 61 were reconstructed with composite restoration employing strip crown. Tooth 52, 62 caries was excavated and composite restorations done. Finishing and polishing were performed for 52, 51, 61, 62 (Figure 4 and 5). The parents were given detailed information about the dental procedure, diet counseling, topical fluoride application and prevention of dental trauma.

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**Figure 1:** Extra-oral pre-operative image of child.



**Figure 2:** Intra-oral pre-operative image showing pulp polyp.



**Figure 3:** Tooth 51 after pulpectomy.

## Discussion

In our case, pulp polyp was seen in fractured 51 which may lead to pyogenic granuloma as reported in case of Aguilo L [8]. Hence, when there is untimely extensive loss of coronal tooth structure of carious primary maxillary incisors causing defective speech, masticatory inefficiency, atypical tongue habits and low self esteem; pulp therapy followed by tooth colored restoration is must.

Restoration of fractured tooth using nonmetallic posts such as ceramic post, polyethylene glass fibers, carbon fibers can be done [9,10] although few drawbacks like technique sensitive, time-consuming, multiple steps, and expensive may be associated with these techniques. Also, the post may cause potential interference with physiological root resorption [11]. Furthermore, use of omega loop wire or non-metallic post may increase internal stresses within the root causing root fracture.

For this case, easy and effective method for restoration of fractured carious primary incisors has been used. This is direct method to be completed in one appointment without employing any laboratory



**Figure 4:** Intra-oral post-operative image.



**Figure 5:** Extra-oral post-operative image of child.

procedures. Besides, restoration will not interfere with deciduous tooth root resorption and succedaneous tooth eruption.

It has been observed that dental treatment under general anesthesia had significant improvement of the children's oral health-related quality of life and positive impact on family's quality of life [12].

## Conclusion

To accomplish esthetic and functional prerequisites; use of easy, quick and efficient method of strip crown composite restoration can be treatment of choice for anterior traumatized primary teeth; considering drawbacks of other techniques.

Preventive methods to avoid severe early childhood caries should be employed by means of prevention programs carried out in the society. Furthermore, educational programmes to enhance parental awareness of prevention and risks of dental trauma should be exercised.

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