

# Management of mutilated primary anteriors: A challenge to pediatric dentist

Pranav Gupta<sup>1</sup>, Parul Bhatnagar<sup>2</sup>, Priyamvada Singh Bais<sup>3</sup>, Akash Bhatnagar<sup>4</sup>

1,2,3-Post Graduate Student, Department of Pedodontics and Preventive Dentistry, Kothiwal Dental College and Research Centre, Moradabad. 4-Assistant Professor, Department of Paediatric and Preventive Dentistry, Dr. Z.A. Dental College and Hospital, Aligarh Muslim University, Aligarh.

Correspondence to:  
Dr. Pranav Gupta, Post Graduate Student, Department of Pedodontics and Preventive Dentistry, Kothiwal Dental College, Moradabad.  
Contact Us: www.ijohmr.com

## ABSTRACT

Early childhood caries is most common chronic oral childhood disease. Early carious involvement with gross destruction in primary anterior is commonly seen in children affected by ECC. This will lead to improper speech, decreased masticatory efficiency, development of abnormal oral habits, malocclusion and psychological problems. So, the management of mutilated primary incisors are very difficult and also a challenge to Pediatric dentist.

**KEYWORDS:** Early childhood caries, Mutilated primary incisors, Pediatric dentist

## INTRODUCTION

Early childhood caries is very common chronic oral childhood disease. According to American Academy of Paediatric Dentistry, Early childhood caries (ECC) is defined "as the presence of one or more decayed non cavitated or cavitated lesions, missing due to caries or filled tooth surfaces in any primary tooth in a child 71 months of age or younger".<sup>1,2,3,4</sup>

Early childhood caries is a multifactorial disease. The main etiology is prolonged nocturnal bottle feeding, honey dipped pacifiers, fruit juice, and diet containing sugars. Improper oral hygiene is another factor which are responsible to develop early childhood caries.<sup>2,4,5</sup>

Involvement of carious lesions in early childhood caries has a distinctive pattern and the teeth commonly involved are primary maxillary central and lateral incisors and maxillary and mandibular first primary molars. So, Early loss of primary teeth have deleterious effects on dental and skeletal structure like space loss in dental arches, speech problems, developing of abnormal habits, and can also have psychological trauma. But nowadays, the concern has been shifted towards saving teeth rather than extraction.<sup>6</sup>

Rehabilitation of decayed primary anterior teeth has been a challenge to the pediatric dentist. Anterior esthetic crowns like Polycarbonate crowns, Strip crowns, Art glass crowns, Veneered stainless steel crown etc were introduced which restore the carious teeth with sufficient tooth structure. But in case of severely damaged crown structure, these crowns fail to withstand the occlusal forces. Thus, post and core systems like omega loop, fiber post were introduced which provide good retentive features for the successful completion of coronal restoration.<sup>6</sup>

Strip crown with omega loop is quick, inexpensive and efficient option for rehabilitation of anterior primary teeth. Fabrication of omega loops is very simple, with 21 gauge stainless steel wire.<sup>7,8</sup>

The following case report describes the management of two 4 year-old patients suffering from early childhood caries.

## CASE REPORT

**CASE 1:** A 4 year old male child reported with decayed primary anterior teeth. During Intra oral examination, it was found that carious lesions in 52, 62 and Coronal portions of 51, 61 were severely damaged and most of the tooth structure was lost. (Figure 1) Treatment plan was made after doing radiographic evaluation and detailed investigations.



Figure 1: Pre-operative View

Under rubber dam isolation, Pulpectomy was performed on 51, 61. Caries removal was done with slow speed handpiece and pulp tissue was extirpated with barbed broaches under constant irrigation with 3% sodium

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hypochlorite diluted in saline. The canal was prepared till size #30 under constant irrigation, dried with paper points and filled with calcium hydroxide plus idoform mixture (Metapex). (Figure 2) As there was very little coronal tooth structure left, it was decided to use omega loops to provide a base over which crown build up is done using composite. In order to place omega loops in the canals approximately 4 mm root canal filled material was removed from the coronal root canal and sealed with Glass-Ionomer cement. A 21 gauge stainless steel wire was used to make omega loops, and the free end of the omega loops was pressed inserted with composite and released inside the canal to provide anchorage, the incisal end of the loop of the wire projected 2-3 mm above the remaining structure. The composite was light cured for 40 seconds. Flowable composite was also inserted inside in the canal and light cured for better adhesion and stability. (Figure 3,4,5)



Figure 2: Pulpectomy of 51, 61



Figure 3: - Insertion of Omega Loop



Figure 4: Post operative IOPA



Figure 5: Cementation of omega loops

Then crown fabrication was done using composite. Occlusion was checked for any interference and polished using composite finishing strips. (Figure 6)



Figure 6: Crown build-up

Maintenance of oral hygiene and Diet counseling was described to the parents. Patient was recalled on 3, 6, 12 months and one year follow up showed good durability of post and core and coronal restoration.

**CASE 2:** A 4 year old male child reported with carious lesion in 52,51,61,62. Coronal portions of 52,51,61 were severely damaged leaving just the root stumps. (Figure 7) Treatment plan was made after doing detailed clinical and radiographic evaluation for this case.



Figure 7: Pre-operative View

Under rubber dam isolation, Pulpectomy was performed on 52,51,61,62. Omega shaped loops were placed in the canals after removal of 4 mm root canal filled paste from the coronal end. Omega loop wire projected 2-3 mm above the remaining structure. Flowable composite was inserted inside in the canal during placement of omega loop and light cured for better adhesion and stability. (Figure 8)



Figure 8: IOPA showing omega loops

Then crown fabrication was done using composite restorative material. Occlusion was checked for any interference and polished using composite finishing burs. (Figure 9) Patient was recalled on 3, 6, 12 months and one year follow up showed good durability of post and core and coronal restoration.



Figure 9: Crown build-up

## DISCUSSION

The main aim of rehabilitation of early childhood caries is to avoid unwanted early extraction of primary teeth and restore them so that child is able to perform normal speech, mastication and also good aesthetics. In severely damaged primary teeth, providing a good coronal restoration is not easy as in most of the cases of early childhood caries there is very less tooth structure remaining and also bonding of various restorative materials to primary teeth is not very satisfactory.<sup>9</sup>

An effective technique is to use an omega shaped stainless steel wire loop which was introduced in 2004 by Mortada and King. In this method, omega shaped loops wire extensions are placed at 3-4 mm inside pulp chamber and the projected coronal portion of the omega loop is used for construction of the coronal restoration or crown. Omega loop wire in the canal does not cause any internal stresses. Its coronal part is incorporated in the restorative material or crown. It can be done with less chair side time.<sup>10</sup>

In this present case report, omega shaped wire with composite are used for reconstruction of severely mutilated primary anterior teeth. This technique does not involve any laboratory procedure and can be done directly in the mouth. The whole procedure can be finished in one appointment and good for the Pediatric

patient. Omega loop wire in the coronal part of canal does not interfere with physiological root resorption. Omega loop wire method can be a simple, easy and economical treatment of choice for severely mutilated primary anterior teeth.

Nickel chromium cast post, Prefabricated Gold post, Composite short post, Stainless steel wire post, Polyethylene fiber post (Ribbond), Fibre post, Ceramic post and Biological post are other post system available for rehabilitation of mutilated primary anterior teeth.<sup>11,12,13</sup>

## CONCLUSION

The direct composite resin restoration using a custom made omega shape post with the orthodontic wire used in this case report demonstrated good aesthetics and retention.

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