

# PROSTHETIC REHABILITATION OF A CHILD WITH SEVERE EARLY CHILDHOOD CARIES ASSOCIATED WITH LOSS OF VERTICAL DIMENSION

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## Abstract

Early childhood caries (ECC) is a rapid type of dental caries, contributing to low self-esteem and the production of childhood mistrust due to teeth loss, gradually leading to malocclusion and psychological issues. It is always difficult to regenerate badly decayed primary teeth and due to the aggressive growth process of child, prosthetic appliance must not impede orofacial structural development. The esthetic and functional requirements needed should also be met. The present case study documents the therapeutic management of reversible partial prosthesis of patients suffering from extreme early childhood caries, in order to improve the social and physiological growth of the infant in order to improve the functionality of the stomatognathic system.

**Key Words:** Child, Denture, Oral Rehabilitation, S-ECC, Vertical Dimension.

## INTRODUCTION

Early childhood caries (ECC) is recognized globally utmost common persistent condition in infants, which is exemplified as an issue of public health.<sup>1</sup> The sequence of ECC is functional, physical and esthetic degradation, which also leads to an effect on the overall welfare of children at an early age.<sup>2</sup> S-ECC at age 3-5 years represented as: 1≥carious, missing (due to caries) or restored surfaces in primary maxillary anterior teeth, or decayed, missing, and filled surfaces (DMFS) scores of ≥4 (3yr), ≥5 (4yr), or ≥6 (5yr).<sup>3</sup> S-ECC care requires premature extraction of teeth and comprehensive reconstruction of tooth structure, which is a complicated and costly procedure and also affects the well-being and standards of life, person, family and community influence of oral health. Child's dentition restoration with a complete or partial removable prosthetic denture is more complicated and time consuming than in adults.<sup>4</sup>

This article highlights the therapy preparation of a pediatric patient with S-ECC as well as the stabilization of the prosthesis, re-establishing the vertical dimension.

## Case

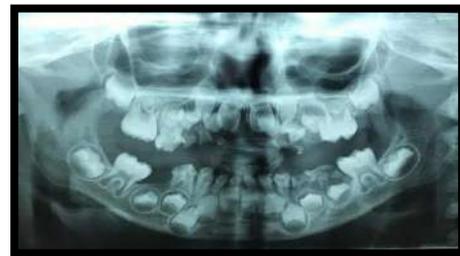
A 5-year-old male patient has visited with the chief concern of multiple decayed teeth for 3 years, to the Department of Paediatric and Preventive Dentistry. In order to relieve the spontaneous nature of pain, medication was prescribed by the local dentist.

Clinical and radiographic examination revealed multiple decayed teeth with pulp exposure i.r.t 55, 73, 83 and 84. Proximal caries i.r.t 71, 72, 81, 82.

The coronal portion was grossly decayed i.r.t 52, 53, 54, 63, 64, 65, 74 and 75. Thus, a diagnosis of severe early childhood caries was made. (Figure 1 and 2)



**Figure 1:** Pre-operative intraoral view



**Figure 2:** Pre-operative orthopantogram

Patient parent's was explained about the type, time and cost of entire treatment and consent was obtained. Emergency phase was not required.



**Figure 3:** Removable partial denture i.r.t maxilla



**Figure 4:** Removable partial denture i.r.t mandible



**Figure 5:** Post-operative view

Corrective procedures performed are as follows:

- Extraction of 52, 53, 54, 63, 64, 65, 74 and 75 was done after administrating local anesthesia.
- Proximal carious lesion of 71, 72, 81, 82 was restored with restorative glass ionomer cement.
- Lesion sterilization and tissue repair was performed i.r.t 55 followed by cementation of stainless steel crown using luting glass ionomer cement.
- Pulpectomy i.r.t 73 and 83 was carried out followed by metapex obturation.
- Formocresol pulpotomy was done i.r.t 84 followed by cementation of stainless steel crown using luting glass ionomer cement.
- Fabrication of removable partial denture i.r.t maxilla and mandible. First impression was recorded and cast

was poured, then base plate is fabricated using self-cure acrylic resin. Ideal wax rim constructed. After inserting in mouth, lost vertical dimension was restored by adjusting height of rim. Then primary teeth were constructed using tooth color acrylic resin and also C-clasps were incorporated in dentures to provide extra retention. The removable partial denture was then finished and polished, tried and delivered to the patient. (Figure 3,4 and 5). Post-operative instructions were given to maintain oral hygiene and follow up was scheduled after every one month.

## DISCUSSION

Other indication for removable partial denture in pediatric patient include loss of deciduous or permanent teeth either due to some genetic disease like ectodermal dysplasia, Papillon-Lefevre syndrome, amelogenesis imperfecta, dentinogenesis imperfecta etc or traumas.

Usually, three medical-biological indicators affected by these defects i.e., prophylaxis, function (speech and chewing) and esthetics. Generally, the diet of affected child is limited to soft foods, that influence the whole child's development. Missing teeth also lead to migration of adjacent teeth, loss of alveolar bone and inadequate occlusion.

Fabrication of removable partial denture in child must be design such that it allows alteration during further growth of maxilla or mandible bone or eruption of tooth. Therefore, child's prosthetic fabrication is multi-disciplinary approach.

## CONCLUSION

Due to the continuous growth processes, usage of removable prosthesis in oral rehabilitation of young patients requires especial attention apparently.

As oral therapy, the quality of life for this child and his parent upgrade provides the children with improved aesthetic, diet, phonation, and functional condition.

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