



Early Childhood Caries: Different Treatment Approaches for One Disease

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DOI: 10.31080/ASDS.2022.06.1421

Received: June 17, 2022

Published: July 05, 2022

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Abstract

Early childhood caries (ECC) is one of the predominant oral health issues in infants and children. It influences the oral health as well as physical, mental and emotional health of the child. Early loss of primary teeth can compromise the masticatory function, esthetics, phonetics and may lead to development of oral habits and malocclusion. Therefore, management of the affected primary teeth is obligatory, but it is a gigantic challenge when it comes to treat uncooperative children of such age. The following case series present the treatment modalities for management of ECC in different cases.

Keywords: Early Childhood Caries; SDF; Esthetic Management

Introduction

Early Childhood Caries (ECC) is defined as the presence of one or more decayed (non-cavitated or cavitated lesions), missing or filled (due to caries) surfaces, in any primary tooth of a child under six years of age [1]. ECC is a multifactorial disease which follows a characteristic pattern of development: maxillary incisors are affected first followed by maxillary then mandibular molars, and the mandibular incisors often remain unaffected due to the protective nature of the tongue [2].

Improper feeding is one of the main causes of ECC. There are other major risk factors, such as the colonization of carcinogenic bacteria in the oral cavity, frequent sugar consumption, and lack of tooth brushing. Adding caries food at an early age and delaying weaning can make the situation worse [3]. The affected children cannot eat adequately and face difficulty in proper pronunciation due to the loss of anterior teeth. This fact also creates an alarming psychological health issue among them as they may lose

their confidence due to the unaesthetic appearance of their teeth. Thus, it should be our utmost priority to assist the children forestalls this unwellness and to offer the affected child a correct treatment.

Following are four case reports of varied treatment provided for children affected by ECC.

Case Reports

Case 1

A 4-year-old girl reported to us with the chief complaint of decayed front teeth region of jaw. On examination there was dental caries in relation to 51 and 61 with gross destruction of the crown (Figure 1.a). Pulpectomy was planned in 51, 61 followed by composite post and composite build up (Figure 1. b, 1.c). The treatment were provided in single sittings. Oral hygiene measures and diet counseling were given to the parents. Recall checkup was scheduled 1week, 1month, 3 month and 6 months.



Figure 1a



Figure 1b



Figure 1c

Figure 1: Figure 1a: Preoperative photograph showing carious 51 and 61. Figure 1b: Placement of composite posts. Figure 1c: Postoperative photograph showing 51 and 61.

Case 2

A 5-year-old girl reported with the chief complaint of pain in the right and left lower back tooth region and of multiple decayed teeth. Intraoral examination revealed carious teeth 51, 52, 54, 55, 61, 62, 65, 74, pulpal involvement in 75, 84 and 85. (Figure 2a, 2b, 2c). Full mouth rehabilitation was done. Treatment given was endodontic treatment for 75, 84, 85 followed by stainless steel crowns and composite restorations in 51, 52, 54, 55, 61, 62, 65 and 74 (Figure 2d, 2e, 2f). Treatment was carried out in multiple sittings. Oral hygiene instructions and diet counseling were given to the parents. Recall checkup was scheduled.



Figure 2a



Figure 2b



Figure 2c



Figure 2d



Figure 2e



Figure 2f

Figure 2: Figure 2a: Preoperative front view. Figure 2b: Preoperative maxillary view. Figure 2c: Preoperative mandibular view. Figure 2d: Postoperative front view. Figure 2e: Postoperative maxillary view. Figure 2f: Postoperative mandibular view.

Case 3

A 1.5-year-old boy reported with a chief complaint of decayed teeth in upper front, left and right back tooth region of jaw. Intra-oral examination revealed carious 51, 52, 54, 61, 62 and 64. As the patient was very small and uncooperative, the treatment chosen was caries excavation with hand instrument followed by SDF application (Figure 3). Proper oral hygiene instructions and diet counseling were given to the parents. The patient was recalled after 6 months for re application of SDF.

Case 4

A 5.5-year-old boy reported with a chief complaint of pain in upper right and lower left back tooth region of jaw. Intraoral examination revealed root stumps in relation to 54 and 74. (Figure



Figure 3a



Figure 3b

Figure 3: Figure 3a: Preoperative maxillary photograph. Figure 3b: Postoperative maxillary photograph.

4a, 4b). Fusion was seen in relation to 81 and 82. (Figure 4c) The treatment provided was extraction of 54 and 74 followed by band and loop space maintainers (Figure 4d, 4e). Oral hygiene measures and diet counseling were given to the parents. Recall checkup was scheduled every 3 months for removal, cleaning, fluoride application and re insertion of space maintainer.



Figure 4a



Figure 4b



Figure 4c



Figure 4d



Figure 4e

Figure 4: Figure 4a: Preoperative maxillary view. Figure 4b: Preoperative mandibular view. Figure 4c: Preoperative OPG. Figure 4d: Post operative maxillary view. Figure 4e: Post operative mandibular view.

Discussion

Early childhood caries is one of the most commonly occurring disease of bacterial origin that is presently affects quite 600 million children worldwide and remains for the most part untreated [1]. According to Ganesh, *et al.* the overall prevalence of ECC in India was found to be 49.6%. With highest prevalence of 63% in Andhra Pradesh and lowest in Sikkim i.e., 41.92% [4].

In addition to its high prevalence, ECC is also a matter of concern because of its severe implications it may have on the quality of life and well-being of children. It should also be noted that managing children at such a young age is difficult and is frequently influenced by the amount of the lesions, child behavior, and patient costs/reimbursement system for dentists.

In this case series we presented four different stages of ECC along with the treatment. Primary teeth adequately retain space for their successors and therefore are described as “the best space maintainers”. Thus, the decision to extract a primary tooth should take into consideration occlusal growth and development as well as the potential outcome of pulp therapy [5]. Taking this into account Pulpectomy was chosen as the treatment of choice in case 1 and case 2 with different restorative approaches as per the need in each case. For the anterior teeth, aesthetics is given as much importance as restoring the function whereas, for the posterior teeth a restoration is chosen that can withstand the occlusal forces without being damaged. Stainless steel (preformed) crowns are chosen for this reason and also it can be used as an abutment if needed [6].

The SDF panel supports the use of 38 percent SDF for the arrest of cavitated caries lesions in primary teeth as part of a comprehensive caries management program [7]. for a small child who is difficult to manage, SDF has been indicated and provides good management when traditional methods of treatment cannot be given to the patient [8].

Extracting a tooth is the last treatment option considered when any of the conservative or endodontic treatment cannot be provided. But it is obligatory to maintain the space for the successor tooth to erupt therefore a space maintainer is a must in such cases. The management part should include behavior modification, restorative work, endodontics, space management, prosthetic, and esthetic rehabilitation and the control of further progression of caries [9].

Currently, the aiming of Pediatric Dentistry is that the patient reaches maturity free of diseases affecting in oral cavity. Obvia-

tion of ECC should commence in the pre- and perinatal period. We should aware the mother about the importance of oral hygiene and every possible measure to ensure the good oral health of the child and caries free future.

We should encourage parents to provide a balanced diet for their children and reduce the intake of refined carbohydrates and sticky, sugary food in between meals. It should be explained to them the importance of brushing twice a day with fluoride toothpaste and washing their mouth after each meal.

After all, we should take every measure possible to ensure the good oral health of the child and a caries free future. It is vital to treat the patient now and avert further progression of the disease.

Conclusion

It is important to understand that each case of ECC is different and therefore the treatment plan cannot be same for each case. Therefore, each case should have different management approach to provide best possible treatment for the children so as to improve their oral health by maintaining their function, aesthetics and speech along with the general health. It should additionally avail to boost their confidence and enhance their mental health as well.

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