Case Report

Full Mouth Rehabilitation of Child with Early Childhood Caries

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Abstract

Early childhood caries (ECC) is a serious public health issue that has a severe impact on the oral health of infants and children. Early loss of primary anterior teeth due to trauma or caries can cause masticatory inefficiency, reduced esthetics, mispronunciation of labiodental sounds, and development of parafunctional habits such as tongue-thrusting and psychological problems. The restoration of severely decayed primary teeth is often a difficult procedure that presents a special challenge to pediatric dentists. This case report documents full mouth rehabilitation of severely mutilated teeth in a patient with ECC.

Keywords: Early childhood caries, full mouth rehabilitation, strip crowns

Introduction

The American Academy of Pediatric Dentistry (AAPD) defines early childhood caries (ECC) as "the presence of one or more decayed (noncavitated or cavitated lesions), missing (due to caries), or filled tooth surfaces in any primary tooth in a child 71 months of age or younger."[1] In children aged 3–5 years, severe ECC (S-ECC) is defined as: one or more cavitated, missing (due to caries) or smooth filled surfaces in primary maxillary anterior teeth, or decayed, missing, and filled surfaces scores of ≥4 (age 3), ≥5 (age 4), or ≥6 (age 5).[2]

S-ECC has been associated with increased financial strain on families, as well as guilt in parents/caregivers.[2] Untreated ECC can erode the dentition irreparably, create abscesses, and lead to significant sickness. The presence of high levels of Streptococcus mutans in the bacterial plaque (acquired early from their mothers or other family members/other people) and extended and excessive consumption of sweetened drinks are two characteristics unique to children with ECC.[3]

Other risk factors for ECC include nocturnal bottle feeding, prolonged breastfeeding, poor oral hygiene, toothpastes lacking fluoride, socioeconomic background, and parental education level. S-ECC is a difficult and expensive condition to treat, as it frequently necessitates considerable restorative treatment and tooth extraction at a young age.[3]

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A case of complete mouth rehabilitation of ECC is described here:

Case Report

A 4-year-old male patient accompanied by his mother reported to the Department of Pediatric and Preventive Dentistry Himachal Dental College, Sundernagar, Mandi, Himachal Pradesh, with a chief complaint of pain in the right and left lower back tooth region. The treatment plan was decided and explained to the mother and parental consent was taken. On the first visit, the child was unfamiliar with the dental environment. The child was made comfortable with dental equipment and behavior management technique was done. Oral hygiene measures and diet counseling, were given to the parents. While in the second visit, radiographs were taken and fluoride application was made. Intraoral examination revealed multiple carious teeth 55, 74, 84, pulpal involvement in 51, 52, 54, 61, 64, 65, 75, 85 [Figure 1]. Pulpectomy was performed with respect to 51, 52, 61, and obturation was done with calcium hydroxide and iodoform paste followed by composite (strip Crown) in 51, 52, 61 [Figure 2] and restorations with respect to 55, 74, 84. Pulpectomy was also performed with respect to 54, 64, 65, 75, 85 and obturation was done with zinc

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Figure 1: Preoperative photographs showing carious anterior and posterior teeth.

Figure 2: Pre- and post-operative radiograps. Pulpectomy with respect to 51, 52, 61 and postoperative photographs with strip crowns 51, 52, 61.

Figure 3: Pre- and post-operative radiographs, pulpectomy with respect to54, 64, 65 and stainless steel crown given.

Figure 4: Pre- and post-operative radiographs, pulpectomy with respect to75, 85, and stainless steel crown given.

oxide eugenol paste, and stainless steel crown was given for occlusal rehabilitation [Figures 3 and 4]. Treatment was carried out in multiple sittings and full mouth rehabilitation was done.

He was advised to use fluoridated toothpaste and was demonstrated about proper oral hygiene practices. The patient was instructed to keep regular follow-up every 3 months for 1 year. The restorations stayed intact and no more caries was discovered during a 3-month follow-up examination. The patient was encouraged to practice good dental hygiene. After a year, the patient returned to the department and showed signs of increased self-esteem and socialization. There were no new carious lesions on the patient's teeth, and he had good dental hygiene.

This is a case of type II ECC affecting maxillary incisors and molars without the involvement of mandibular incisors.

Discussion

The management of patients with ECC at this tender age is a difficult task as the young child is anxious about dental treatment. Anxiety has a great impact on a child's behavior, and is a major factor in the success of a dental appointment. The child was reluctant and uncooperative on the initial visit in this case report. As a result, the patient was counseled and modeled using behavior modification approaches, which helped the child develop a good dental attitude and raised the likelihood of future treatment success.[3]

Due to ECC, a young child's self-esteem may be harmed, embarrassed, and mentally traumatized by the premature loss or extensive decay of primary anterior teeth. It can also have an impact on nutrition, oral development and lead to malocclusion. Untreated decayed teeth can cause pain and infection, causing damage to the developing permanent tooth as well as feelings of inadequacy.[3]

Primary anterior teeth have been restored with a variety of materials and procedures. Amalgams, silicate cements, composite resins etched with various acids, stainless steel crowns, open face stainless steel crowns, and polycarbonate crowns are all commonly used nowadays. When esthetics is a primary factor, amalgams and stainless steel crowns are not

recommended. Silicates, cements, and resins are appropriate for small lesions, but they frequently fail when applied to wide areas of deterioration.[4,5]

Polycarbonate crowns provide excellent esthetics but require careful cementation procedures for retention. Failure in the cementation of the polycarbonate crown is a major problem, resulting in early fracture and loss of the crown before the exfoliation of the restored tooth.[6] In this case, celluloid strip crown with composite resin material was used because of its advantage of producing an esthetic, functional, and economical restoration easily and with minimal chair time.

The success of a treatment is also determined by the number of follow-up visits made. Recall appointments should be scheduled at each visit, based on the clinician's assessment of the patient's future caries risk. As a result, our patient's recall visits were scheduled based on these criteria.

Conclusion

The treatment reported in the case report is a simple and effective technique for the rehabilitation of grossly destroyed primary anterior and posterior teeth. To ensure complete success of the treatment, the risk factors associated with ECC should be identified at an early age and appropriate treatment should be initiated to prevent the development of abnormalities in the permanent dentition and oral health, diet, and acceptance of routine dental care should be maintained and monitored.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the legal guardian has given his consent for images and other clinical information to be reported in the journal. The guardian understands that names and initials will not be published and due efforts will be made to conceal identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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