Dental rehabilitation of early childhood caries: A case report

Milind Atulkar, Milind Wasnik, Suryakant Kumar, Arun Kumar Sajjanar

Email: drdevanshim@gmail.com

Introduction

Early childhood caries (ECC) is a potent form of dental caries that can destroy the primary dentition of preschool children. It is usually prevalent among low socioeconomic groups and the general population.

ECC along with affecting the teeth also has consequences that may lead to more wide-spread health issues. Premature loss of maxillary primary anterior teeth may result in abnormal tongue habits, defective speech, slower the growth potential than a caries-free child and decreased masticatory efficiency.

ECC has been defined as the appearance of any sign of dental carious lesions on any tooth surface in the first 3 years of a child’s life. It has been defined by the American Academy of Pediatric Dentistry as “the presence of 1 or more decayed lesions, missing (due to caries), or filled tooth surfaces in any primary tooth in a child - 71 months of age or younger.” The first sign of ECC is the appearance of white opalescent lesions in the cervical regions of the primary maxillary anterior teeth.

Development of ECC depends on multiple factors like socio-economic status, behavioural and psychosocial factors. Appearances of white opaque spots are the initial signs of caries, which then progress to form cavities and lead to destruction of the crown and root surfaces.

Early childhood tooth problems are associated with the variations during intrauterine and postnatal growth period. Most clinicians agree that teething does not seriously cause life taking pathological state. The ECC initiates on the cervical third of the labial surfaces of the maxillary anterior teeth followed by affecting the maxillary and mandibular first molars, canines, and second molars. In advanced stages, it affects the mandibular incisors. Therefore, it is of great importance that the dentists should treat this caries lesion and thus return the oral health and smile esthetics to these children. Various types of full coverage crowns for ECC affecting the anterior primary teeth include composite resin strip crowns, polycarbonate crowns, open-faced steel crowns, and pre-veneered stainless steel crowns.

Case report

A five-year-old male patient reported to the Department of Pedodontics and Preventive Dentistry, Swargiya Dadasaheb Kalmegh Smruti Dental College and Hospital, Wanadongri, Nagpur, with a chief complaint of broken teeth in the upper front region of jaw for three months. Patient’s general health was good and there was no relevant systemic medical history, allergy, or
immunocompromising illness. The child was born with a full term and normal delivery. Diet history revealed that patient had a history of use of bottle. Intraoral examination revealed Ellis Class 9 fracture with 51, 6 (Figure 1) and occlusal caries with 74, 75, 84, 85 (Figure 2 and 3). The child was diagnosed to have ECC and treatment was initiated after assent was obtained from the parents. Initial treatment involved appropriate preventive measures like oral prophylaxis and fluoride application. Extraction of 84. Pulpectomy for 51, 61, 74, 75, and 85 was carried out. Stainless steel crowns with 74, 75, and crown and loop space maintainer with 85 were given (Figure 5). Final restoration with celluloid strip crowns with 51 and 61 was given (Figure 4). The patient was recalled after every three months.

Figure 1: Intraoral photograph showing case of early childhood caries

Figures 2 and 3: Intraoral photograph showing maxillary and mandibular occlusal view

Discussion

ECC is similar to other types of caries with the only difference of feeding pattern. ECC has an unfavourable effect on the health along with the quality of life of the child. ECC can be avoided by maintaining proper oral hygiene and dietary practices, using agents such as fluoride. Composite resins with various acids etch techniques, stainless steel crowns, and polycarbonate crowns are frequently used today for anterior teeth. Amalgams and stainless-steel crowns are contraindicated when esthetics is a major consideration. Polycarbonate crowns provide excellent esthetics, but require exact 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 prior to the exfoliation of the restored tooth. In this case, celluloid preformed crown with composite resin material was used because of its advantage of producing an esthetic, functional, and economic restoration easily and with minimal chair time.
According to Waggoner (1994), if caries are present on multiple surfaces of a tooth, the incisal edges are involved, presence of cervical decalcification requires pulpal therapy, minor carious lesion but oral hygiene of the child is poor or moisture control during procedure is difficult owing to patient’s behaviour; then full coronal restorations are preferred. Croll reported that stainless steel crowns are easy to place and are wear resistant and are attached firmly to the tooth until exfoliation. However, the main disadvantage is its unsightly, silver metallic appearance.

Riekman and Badrawy reported that the loss of primary anterior teeth before the age of three years resulted in speech problems. Restoration of esthetic appearance is one of the most significant reasons for replacing the missing anteriors, which promote a normal psychological development in the child. This space maintainer offers several advantages regarding the restoration of speech and masticatory efficiency, esthetics, and prevention of abnormal oral habit development. The main disadvantage is the accumulation of food debris and plaque.

Dental rehabilitation of a child with ECC is challenging for a pediatric dentist. Along with dental benefits, oral rehabilitation also contributes towards the improvement of general and psychological well-being.

References