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CASE REPORT

ESTHETIC REHABILITATION IN YOUNG TODDLER - A CASE REPORT

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ABSTRACT

Early childhood caries (ECC) is a diet-induced ailment branded by an early onset and rapid development. It ends in functional, aesthetic and psychological disturbances of the child. Losing anterior teeth at juvenile age may result in psychological ordeal to the child which may happen to be grim and deep seated and may result in an imbalance in the emotional growth of the child at an early age. The early loss of these teeth affects the speech, phonetics, esthetics of the face, function, drifting of adjacent teeth leading to space loss and affects the normal growth and development resulting malocclusion in later life.

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INTRODUCTION

The greatest restorative challenge to the pediatric dentist is the esthetic rehabilitation of a young toddler suffering with an extensive tooth destruction and eventually tooth loss following rampant/early childhood caries (ECC) and dental trauma. Esthetic restoration of primary anterior teeth is challenging due to the small size of the teeth, close proximity of pulp, relatively thin enamel structure, less surface area for bonding, problems related to child behavior and finally the treatment cost.¹

Untimely loss of primary teeth is one of the most common etiological factors in the development of malocclusion and certain oral habits. Space maintainers are provided to prevent malocclusion and deleterious oral habits and in later life. Aesthetics is an important concern all along with function and space management in anterior region.²

Space maintainers are fixed or removable appliances used to preserve arch length subsequent to the premature loss or elective extraction of a tooth/ teeth. Loss of arch-length is related to tooth migration following premature loss of primary teeth and is considered as one of the most frequent etiological factor for the loss of space in children. Space management includes space maintenance, space regaining, space supervision and serial extraction.³

Early childhood caries (ECC) are rampant dental caries in infants and toddlers characterized by affecting the primary maxillary anterior teeth followed by involvement of the primary molars and sometimes canines.⁴ The amount of decay is always more in the maxillary incisors and, in most of the cases, much of the anterior clinical crowns are decayed or lost by the time the child is taken to the dentist. Parents are usually reluctant for the extraction of primary incisors and usually they seek an aesthetic way out for the replacement of the lost teeth.¹

Case Report

A 4 year old male reported to the Department of Pediatric and Preventive Dentistry with the chief complaint of decayed teeth in upper front region of jaw (Fig 1, 2) with insignificant past medical and dental history. On intraoral examination the primary maxillary centrals and laterals were associated with sinus tract and were tender on percussion. The radiological findings (Fig 3) illustrated pulp involvement with both central and lateral incisors with internal resorption in relation 61 (maxillary right central incisor). Based on the clinical findings, extraction of 61, pulpectomy with 51, 52, 62 followed by the reduction of the crown structure with 51, 52, 62 till the level of alveolar ridge and a fixed esthetic anterior functional space maintainer was planned. The treatment plan was explained to the parents and an informed written consent was obtained following which 61 was extracted under all aseptic conditions uneventfully. Pulpectomy (Fig 4) procedure was carried out with 51, 52, 62 wherein the canals were obturated using metapex and were sealed using restorative glass inomer cement.

The left out crown portion of 51, 52 and 62 were reduced till the level of alveolar ridge (Fig 5). Band pinching was done with 55, 65 and upper and lower alginate impressions were made. The pontics to be used in place of 51, 52, 61, 62 were made out of the rubber mould using composite resin instead of commercially available acrylic pontics and were embedded in self cure acrylic along with a 19 gauge stainless steel wire running from the anterior palatal surface soldering it to the bands with 55, 65 and following which the assembly was finished and polished and cemented using type I glass inomer cement. (Fig 6, 7). Post cementation instructions were given to parents and oral hygiene maintenance was explained. Patient was recalled after 7 days, 15 days and 1 month.



Figure 1 Badly carious 51, 52, 61, 62:



Figure 2 Palatal view, badly carious 51, 52, 61, 62

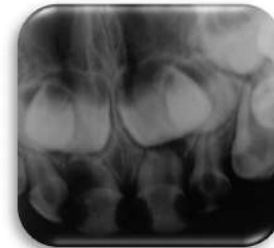


Figure 3 Pre treatment IOPA with 51, 52, 61, 62.

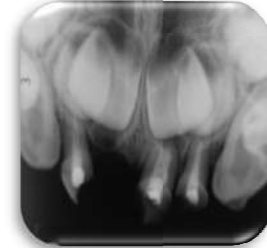


Figure 4 Obturation with 51, 52, 62



Figure 5 labial view – Post Extractions with 61.



Figure 6 Palatal view, post cementation of anterior esthetic Fixed space maintainer



Figure 7 labial views - Post cementation of anterior Esthetic fixed space maintainer

Discussion

Early childhood caries (ECC) is a diet-induced ailment branded by an early onset and rapid development. It ends in functional, aesthetic and psychological disturbances of the child.⁵ The premature loss of primary anterior teeth, if left untreated, undeniably results in an anaesthetic smile and compromised masticatory function which may lead the child to have insufficient diet causing retarded general growth and development. The primary anterior are lost most commonly at the age of 2 to 4 years due to trauma or caries causing extensive destruction.² Apart from the functional problems associated with it, loss of anterior teeth at this age possibly results in psychological trauma to the child.³ The motive behind replacing missing anterior incisors is to restore an expectable and pleasing look and providing an opportunity for normal psychological growth and development of the child at such a premature age. The advantage of fixed space maintainer is it has shown better patient compliance as compared to the removable one.⁶ For the reconstruction or replacement of primary anterior teeth, it is important to

choose a material that is inexpensive and has the longevity to remain in place until just prior to the eruption of permanent teeth without interfering with the normal eruption process. Various esthetic options are available for replacing the primary incisors like the *Groper* appliance which is similar to nance holding arch, but with acrylic teeth processed to the wire instead of a palatal acrylic button in the rugae area. The acrylic teeth are attached to metal cleats that have been soldered to the palatal wire bar and the teeth sit directly on the alveolar crest.³ Esthetic space maintainers also includes the use of fiber reinforced composite resin (FRCR).^{2, 6} The selection of the appliance depends upon a number of factors including the child's stage of dental development, the dental arch involved, the tooth missing and the status of the teeth adjacent to the lost tooth. Children become acclimatize to the esthetic space maintainer within 2 to 5 days.⁶

In the present case, the pontics used were fabricated using routine light cured composite resin and were embedded in the light cure acrylic. The materials used in the present case for the fabrication of anterior aesthetic fixed space maintainer are readily available and are easy to use. This technique is acceptable by patient and this type of functional fixed space maintainer helps in restoring phonetics, speech and mastication without causing loss of space in maxillary anterior region. The appliance was found to be functioning satisfactorily in the oral cavity till the last visit.

Conclusion

Losing anterior teeth at juvenile age may result in psychological ordeal to the child which may happen to be grim and deep seated and may result in an imbalance in the emotional growth of the child at an early age. The early loss of these teeth affects the speech, phonetics, esthetics of the face, function, drifting of adjacent teeth leading to space loss and affects the normal growth and development resulting malocclusion in later life. Thus, to deal with the functional and aesthetic predicaments coupled with early loss of anterior teeth the present appliance can be used with an aesthetic and functional acceptable outcome.

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