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Research Article

'MUTILATED OCCLUSION TO HEALTHY FUNCTION'- A CASE REPORT OF A FOUR YEAR OLD CHILD WITH SEVERE EARLY CHILDHOOD CARIES

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ABSTRACT

Severe early childhood caries (S-ECC) causes aggressive destruction of primary teeth inducing pain, abscess, impeding masticatory function eventually leading to their early loss with plausible permanent successor malocclusion. It affects the child's social life by affecting their confidence and self-esteem. A pediatric dentist thus has the responsibility to improve child's oral as well as general health. The treatment protocol not only involves re-establishment of form and function of the occlusion but also relies on the behavior management approach, parent education for child's diet and oral hygiene and regular dental follow up. The quest for providing simple, esthetic and cost effective treatment approach for such comprehensive cases has always been a priority. In this case report the upper anterior restoration with Maryland bridge, lower anterior with fiber post and posterior built up with composite material provided an easy, efficient and esthetic treatment option for managing a four year old S-ECC patient.

INTRODUCTION

The American Academy of Pediatric Dentistry (AAPD), states that in children younger than 3 years of age, any sign of smooth-surface caries is indicative of severe early childhood caries (S-ECC). From ages 3 through 5, 1 or more cavitated, missing (due to caries), or filled smooth surfaces in primary maxillary anterior teeth or a decayed, missing, or filled score of ≥4 (age 3), ≥5 (age 4), or ≥6 (age 5) surfaces constitutes S-ECC. It affects the child's oral health by causing local pain, difficulty in mastication, abscess, potential malocclusion in permanent dentition and general health by impairment in esthetics, speech and sleep[1]. In order to avoid these effects, management of S-ECC inflicted primary teeth is an important responsibility of a pediatric dentist. The present case report describes the management of a challenging case of a four year old S-ECC patient.

Case History

A four year old child accompanied by his father came to the out-patient department of Pediatric and Preventive Dentistry at Christian Dental College and Hospital, Ludhiana, with a chief complaint of multiple decayed front and back teeth. The patient had pain and difficulty in eating food since two months. The pain associated was mild, persistent and aggravated on chewing food.

The child was evaluated to be negative on Frankel's behavior rating scale. Clinical and radiographic examination exhibited root stumps of 51, 61, 54, 84 and sinus opening with 51. All the teeth except 75 were found to be grossly carious with pulpal involvement. The occlusion showed collapsed bite in anterior region. The treatment was planned for multiple visits under local anesthesia and written consent was taken from the parent. Diet counselling and tooth brushing practices were explained to the parent.

Composite restoration was done with 75. The pulpectomies of 55, 64, 65 and 85 was proceeded quadrant wise, followed by pulpectomies of maxillary anteriors 52, 53, 62, 63 and mandibular anteriors71, 72, 73, 81, 82 and 83. The obturation was done with zinc oxide eugenol and post obturation restoration was done with glass ionomer cement. The root stump with 51, 61, 54 and 84 were extracted. Composite restorations with 55, 64, 65, 74 and 85 were proceeded. The anterior collapsed bite was raised by placing composite on the occlusal surfaces of 55, 64, 65, 75, 74 and 85 in two visits with 1mm bite raise in each visit, over a span of two months. The esthetic rehabilitation with 71, 72, 73, 81, 82, 83, 52, 53, 62 and 63 was done by cleaning the canals to half of its length followed by etching and bonding. Fiber reinforced posts were cured in the canal with flow line composite cement. The teeth were then built-up with composite cement. The extraction space of 54 and 84 was managed by cementing band and loop space maintainer on 55 and 85. 51 and 61 were prosthetically rehabilitated by making a Maryland bridge using two straightened wires of 26 gauge spooled around each other. Strip crowns for 51 and 61 were attached to the spooled wire splint by placing slots on their lingual surfaces and curing them with composite cement. This Maryland bridge was then cured intra-orallly with composite by making slots on the

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lingual surfaces of 52, 53, 62 and 63. Proper overjet and overbite was established.

The various behavior management techniques used through the multiple visits changed the child's Frankel's behavior rating scale to positive. The child and parent were happy and satisfied with the total rehabilitation treatment. At two month follow-up, the parent reported that the child chewed food well and did not keep the food in mouth for long time.

Intraoral Frontal View

Pre-Operative Post-Operative

Intraoral Right Side View

Pre-Operative Post-Operative

Intraoral Left Side View

Pre-Operative Postoperative

Maxillary Occlusal View

Pre-Operative Post-Operative

Mandibular Occlusal View

Pre-Operative Post-Operative

Bite Raise Frontal View Bite Raise Left Side View

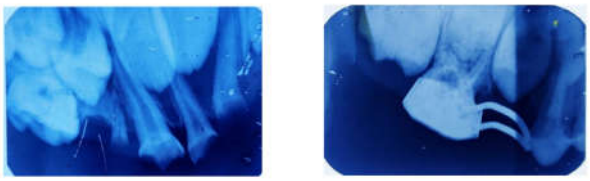
Fiber Post Placement

Composite Built-Up After Fiber Post Placement

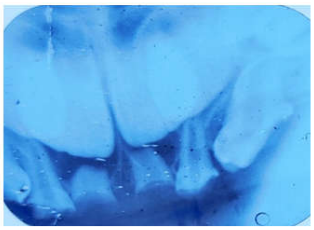
Maryland Bridge

Band And Loop Space Maintainer With 54, 84

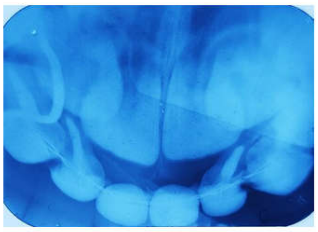
Pre-Operative Iopa With 54,55 Post-Operative Iopa With 54,55



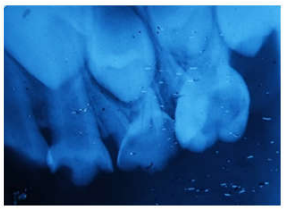
Pre-Operative Iopa With 51,52,61,62



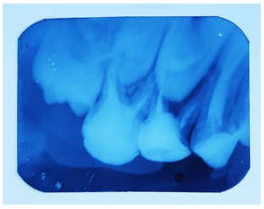
Post-Operative Iopa With 51,52,61,62



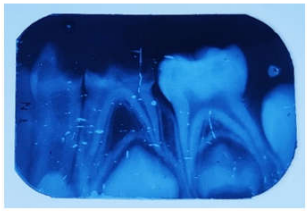
Pre-Operative Iopa With 64,65



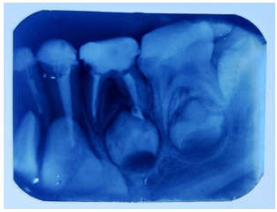
Post-Operative IOPA With 64,65



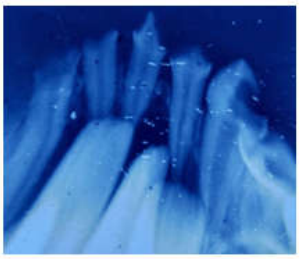
Pre-Operative Iopa With 74,75



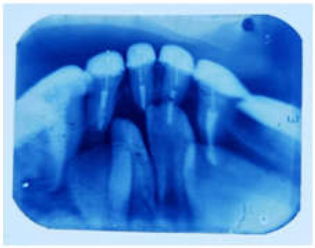
Preoperative IOPA With 74,75



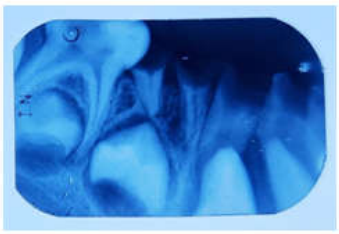
Pre-Operative Iopa With 71,71,81,82



Post-Operative Iopa With 71,71,81,82



Pre-Operative Iopa With 84,85



Post-Operative Iopa With 84,85

DISCUSSION

The prevalence of S-ECC in India is found to be 49.6%[2], hence educating the pediatric dentist for implementing a comprehensive treatment approach with application of adequate behavior management techniques, addressing the etiology for the caries, educating the parents about appropriate oral hygiene habits and doing regular dental check-up is of prime importance.

In this case, the etiology was found to be night bottle feeding with sweetened milk, frequent consumption of chips and biscuits and holding the food for long time in the mouth. Rectifying the etiology helps avoid recurrence of such cases. The multiple treatment visits under local anesthesia with appropriate behavior shaping techniques helped inculcate a positive dental attitude in the child. The pulpectomies and composite build ups of the teeth restored adequate tooth structure for mastication. Considering the child's age, zinc oxide eugenol was used as obturating material as its resorption rate is slower compared to calcium hydroxide[3].Stainless steel crowns post pulpectomies was not done as the deep bite and absence of first permanent molars would cause undue reduction of the already compromised tooth structure. The raise in the bite provided the adequate overjet and overbite for anterior teeth and improved the facial appearance of the child. Restoration of the anterior teeth with fiber posts provided the necessary anchorage as well as esthetics for composite restorations. The fluidity of flow line composite helped to adapt the fiber post firmly to the canals. The band and loop space maintainers helped maintain space for the eruption of their permanent successors. The use of a Maryland bridge to replace the extraction space of 51, 61 restored the esthetics and phonation of the child, thus boosting his confidence. The use of strip crown was a cost effective and unique option for prosthetically replacing 51 and 61.

CONCLUSION

Full mouth rehabilitation of a child suffering from S-ECC, restores their oral health along with confidence and self-esteem to socialize with other peers. The management of collapsed arch of the child with bite raise, anterior teeth reconstruction with fiber post reinforced composite restorations and strip crowns for bridge was an appealing and sustainable treatment option. This case report provides a simple and efficient panacea for endodontic, orthodontic, prosthetic and esthetic rehabilitation of a young child with S-ECC.

Acknowledgement: Nil

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