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Full Mouth Rehabilitation of a 2-year-old Child Under General Anesthesia: A Case Report

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ABSTRACT

Introduction: Rampant caries is the most common chronic childhood disease leading to decreased oral function, undesirable esthetics and consequent malocclusion and psychological problems. Oral rehabilitation under general anesthesia under certain circumstances is the only choice for the comprehensive treatment of extremely young, emotionally immature patients unable to cope with the same on a dental chair.

Case Report: This case report describes the challenging task of the full mouth rehabilitation of a 2-year-old patient with rampant caries having severely mutilated maxillary teeth under general anesthesia.

Conclusion: Treatment under general anesthesia provides the advantage of providing thorough oral rehabilitation in a limited period of time, allowing immediate pain relief, even with little or no patient cooperation.

Key Words: Dental caries, Full mouth rehabilitation, General anesthesia, Decreased oral function, Undesirable esthetics, Psychological problems

INTRODUCTION

Rampant caries is a severe form of early childhood caries (ECC). It is associated with rapid destruction of crowns frequently involving the dental pulp and its pattern initially involves maxillary deciduous anterior teeth followed by posterior teeth, usually sparing the mandibular anterior teeth. Frequent prolonged contact with bottles containing sweet beverages or milk are factors attributable to this condition,¹ which in turn leads to a decrease in masticatory efficiency, compromised esthetics, improper speech, development of abnormal tongue habits and ensuing malocclusion along with psychological problems. When this condition occurs in very young children, it is very difficult to manage them in a routine chairside set-up.

Therefore, GA becomes a safe, effective and only way to provide dental treatment for children in situations when non-pharmacologic behaviour management techniques fail.²

Owing to the techniques involved coupled with fact that the children requiring such treatment are typically among the

youngest and most difficult-to-manage patients, the cosmetic restoration of extensively damaged primary anterior teeth provides a challenge for the dentist.³

Against this background, this paper highlights the full mouth rehabilitation of a 2-year-old patient with rampant caries having severely destructed maxillary teeth under general anesthesia.

CASE REPORT

A 2-year-old male patient reported to the Department of Pediatric and Preventive dentistry with a chief complaint of severely decayed teeth and pain on both sides of the upper arch. The child was found to be emotionally immature and highly uncooperative.

Clinical examination revealed grossly destructed 51,52,53,61,62,63 and 64, deep occlusal caries involving 74 and 84 along with dental caries involving 55,75 and 85 intraorally (Fig. 1,2). An orthopantomography was advised

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and the treatment plan decided was full mouth oral prophylaxis, pulpectomy in relation with 53 followed by composite restoration, pulpectomy followed by fiber post and core and composite restoration in relation with 63, MTA pulpotomy followed by zirconia crowns with respect to 74 and 84, composite restoration with respect to 75 and 85 followed by fluoride varnish application. For which consent was given by the parents.

The patient was then admitted to Dr. D.Y. Patil Medical Hospital, Nerul, Navi Mumbai, where he underwent complete pediatric and anesthetic evaluation required prior to oral rehabilitation under general anesthesia.

Under GA, the pre-determined treatment plan was carried out (Fig.3). For building a core in deciduous anterior tooth, about 4 mm of Zinc Oxide Eugenol cement was removed from the coronal end of the root canal, this canal space was then acid etched, rinsed, and dried; a light-cured bonding agent was brushed on the etched surfaces and dispersed by an air blast. Prior to the placement of the fiber post, flowable composite was placed in the post space after which, both were light-cured for 60 seconds. This provided increased support and mechanical retention for the restorative material. The occlusion was evaluated; and any interference found was removed, followed by final finishing and polishing of the restoration. The parents were provided with home care instructions which included oral hygiene measures and diet counselling.

To determine the state of oral hygiene maintenance and to assess the child's oral cavity, a recall evaluation was scheduled after a period of one week followed by periodic evaluations every six months.



Figure 1: pre-op occlusal view of maxillary arch.



Figure 2: Pre-op occlusal view of mandibular arch.



Figure 3: Treatment under General Anesthesia.



Figure 4: One week follow up: Composite restoration with 55, pulpectomy with 53, pulpectomy with fibre post with 63, extraction with 51,52,61,62,54,64.



Figure 5: One week follow up: Composite restoration with 75,85 pulpotomy using MTA with 74,84 followed by zirconia crowns, fluoride varnish application.

DISCUSSION

Dental treatment under GA is a costly alternative but in certain situations, an unavoidable tool for treating uncooperative children. It is indicated for extremely young children requiring substantial dental treatment and are unable to receive the same on the dental chair, for medically compromised children, or for children requiring oral surgical procedures.⁴ It is an indispensable consideration for children unable to cooperate due to behavioural or medical issues and accept

chairside dental care.⁵ Therefore, the aim of treatment under GA is full mouth rehabilitation of the child in a single visit, which later allows behaviour-modification methods to be introduced and accepted, when the child is capable of comprehending the same.⁶

A glass fiber post that has been used in this case, is one of the posts used in primary anterior teeth.^{7,8} It is superior to the other posts, with greater flexural strength, better handling properties, usage in areas with high occlusal stress, esthetically acceptable, and the ability to bond to any composite.⁹

In accordance with the present case, it shows improved retention within the canal over a prolonged period of time. Thus, glass fiber post is considered favourable compared to other types of posts for primary anterior teeth.^{10,11}

The parents satisfied with restoration of all functions of teeth, such as mastication, speech and esthetics at the end of the treatment and were further motivated to maintain the general oral hygiene of the patient. Restoration was found to be serving well at the 1 week (Fig. 4,5) and 6-month recall.

CONCLUSION

Treatment under general anesthesia provides the advantage of providing thorough oral rehabilitation in a limited period of time, allowing immediate pain relief, even with little or no patient cooperation. However, it has little effect in promoting oral health and acceptance of routine dental care.

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