Case Report

Pediatric Dental Management of Child with Autism Spectrum Disorder under General Anesthesia: A Case Report

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Abstract

Early childhood caries considered to be the most common chronic disease of the child and resulting in gross destruction of the dentition. It gives rise to severals problems like functional problem, pain, retard growh and aesthetic problems. Special health care needs childs suffers more due to improper dietary habit and lack of proper oral hygiene maintenance. Behavior management of non communicative child like child with autism spectrum disorder are very difficult to manage in conventional dental setting. Dental treatment under general anesthesia considered to be a good option for management of such cases. Dental treatment under general anesthesia have multiple advantages like immediate pain relief, extensive treatment in shorter period of time and patient compliance is not required. This case report demonstrated dental treatment of a child with autism spectrum disorder under general anesthesia.

Key words: Autism Spectrum Disorder, Dental Treatment, Early Childhood Caries, General Anesthesia, Special Health Care Need Child.

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Introduction

Behavior management in pediatric dentistry is an important factor in order to alleviate anxiety, create positive dental attitude towards dentistry and delivering quality dental treatment in child and adolescents including special health care needs child.[1] The behavior management technique includes non-pharmacological approach such as tell-show-do, distraction, positive reinforcement, hand over mouth and pharmacological approach like sedation or treatment under general anesthesia.[2] Pharmacological module used in those cases in which treatment procedure is extensive and complicated in nature.[3] Conscious sedation using nitrous oxide with combination of other drugs have proven their efficacy in behavior management of pediatric patients.[4] Treatment under general anesthesia is recommended in certain circumstances like children with specific mental, physical or medical problems, required immediate or comprehensive management and cognitive immature patient.[5] Early childhood caries,

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considered to be the most prevalent disease of oral cavity in children that resulting destruction of hard tissues of tooth and initiating different complications.[6] Higher caries prevalence is reported in case of child with autism spectrum disorder (ASD) which is group of neurodevelopmental disability resulting impaired social interaction, communication, and restricted or repetitive behavioral stereotypes.[7] Dental management of autistic child in dental setting is quite amplified in nature and challenging to accomplish intraoral works.[8] Treatment under general anesthesia considered to be an effective behavior management technique for special health care need child.[1] This case report emphasize comprehensive dental management of a child with ASD under general anesthesia.

Case Report

A 4 years old female child with her parents visited the University Dental College Hospital with chief complaint of pain on tooth and sleeplessness at night.

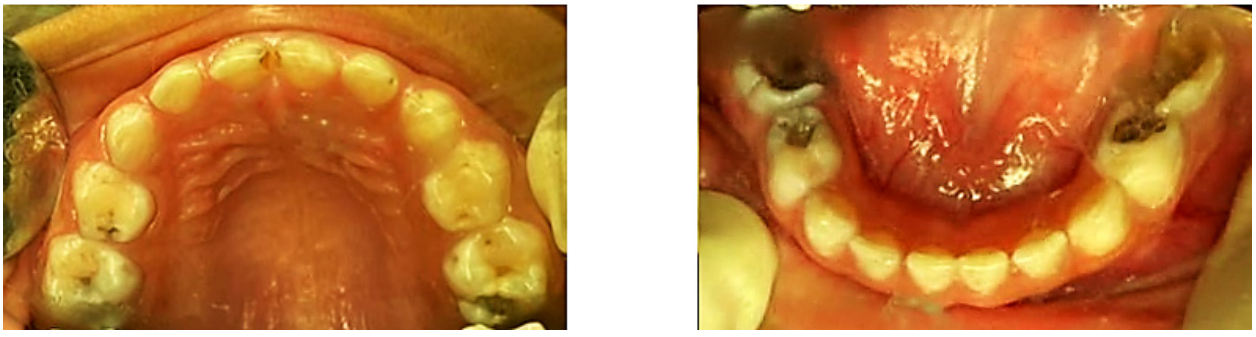

Fig. 1: Preoperative intraoral photographs before surgical procedure.

A thorough history was undertaken from parents regarding the chief complaint. They disclose that, she was a special health care need child with the features of ASD. The medical status of the child is healthy and parents did not encounter any prolong hospitalization regarding any health issues. Parents stated, the child is suffering from severe toothache, the intensity of pain increased during night time and the child can neither eat nor sleep properly due to continuous pain on tooth. Following the completion of history taking, clinical examination was carried out. The child was emotionally immature and behavior was highly uncooperative. The clinical examination revealed multiple carious lesion- gross carious lesions on both mandibular 1st primary molars 74 and 84, carious lesions on multiple maxillary teeth 51, 61, 54, 55, 64, 65 and, severely decayed both mandibular 2nd primary molars 75 and 85 (fig. 1). The child was prescribed for radiographic examination- orthopantomogram in order to unveil more extensive details. The panoramic radiograph could not be obtained due to instability and uncooperative behavior of the child.

The treatment plan was prepared regarding the clinical examination and discussed with the parents- full mouth oral prophylaxis, composite resin restorations on 51 and 61, permanent filling on 54,55,64,65 and pulpectomy followed by permanent filling on 74 and 84 and extraction of 75 and 85. Disadvantages and consequences of extraction of primary molars were informed to the parents and they agreed for extraction due to unrestorable condition of both teeth. The behavior management protocol was discussed with the parents and they liked to go for treatment of all affected teeth under general anesthesia followed by periodic behavior management protocol. The details of general anesthesia procedure were described to the parents and they gave written consent to conduct treatment under general anesthesia. Pre-anesthetic evaluation and investigations were carried out to figure out the health status of child. After getting the reports in normal range, the parents were informed regarding the nothing per oral protocol and other rules of treatment under general anesthesia.

On the day of operation, child′s health status was rechecked by operating anesthesiologist. Nothing per oral schedule was confirmed and child was bought to the operatory for surgical procedure. After obtaining the general anesthesia, dental treatments under general anesthesia was carried out (fig. 2).

Fig. 2: Dental treatment procedure of a child with ASD under general anesthesia.

First of all, full mouth prophylaxis was carried out followed by removal of all carious lesion on both mandibular 1st primary molars. Pulpectomy procedure was carried on 74 and 84- complete removal of infected tissues, manual instrumentation using conventional files and glass ionomer permanent filling was placed after completion of treatment. Vital signs of the child were monitored carefully by the operating anesthesiologist. After the pulp therapies of lower jaw, all carious lesions of maxillary dentition were removed and restored with glass ionomer cement on 54,55,64,65 and light cured composite resin on 51 and 61. After completion of all operative procedure, extraction of 75 and 85 was carried out due to its unrestorable condition. Furthermore, full mouth cleaning was carried out and post-operative photographs were taken (fig. 3). Following removal of all instruments, materials and throat pack from the mouth, reverse procedure was initiated by anesthesiologist. After completion all operating procedure, the child was transferred at post-operative unit until complete recovery. Medications were prescribed for the child and oral hygiene maintenance procedures were reinforced with the parents.

Fig. 3: Postoperative intraoral photographs following full mouth rehabilitation.

Discussion

Early childhood caries is considered as the most common chronic infectious childhood disease which results in pain, interfere with growth and impairment of functions.[9] Management of early childhood caries is quite complex and operative techniques are challenging due to anxiety and fear of child patients.[6] Appropriate behavior management techniques should be assessed in each case and included while making the treatment planning.[10] Dental Treatment under general anesthesia is recommended in various circumstances like the amount of work to be needed, patients psychological or emotional maturity, urgency of the treatment, communicative ability of the child etc.[1] In this case, general anesthesia was selected as behavior management modality by considering patient′s emotional condition, communicative skills and required intraoral operative works. Similar management procedure was encountered by study by Naik *et al*, dental treatment of 2 years old children under general anesthesia was undertaken in order to established optimum dentition.[11] Dental treatments under general anesthesia is recommended in case of child with ASD who are deficit in communication and social interaction, and having severe early childhood caries where extensive rehabilitation is required.[12] Children with ASD usually suffers from oral diseases due to their inadequate oral hygiene maintenance or lack of knowledge of caregiver.[7] A study by Jain *et al*. demonstrate full mouth rehabilitation of 4 years old child in which functional and aesthetic restoration was established.[13] In our case similar functional rehabilitation and aesthetic restorations was taken in consideration and alleviation of the chief complaint of pain. A study by Jaya *et al*. showed full mouth rehabilitation in a child with cerebral palsy under general anesthesia in order to establish functional dentition.[14] While selecting the case for general anesthesia, patient′s physical status like respirations system, cardiovascular parameter, underlying disease condition and pre-anesthetic evaluation should be assessed properly.[15] The parents should be informed briefly regarding the procedures, necessity, risks and advantages of conduct treatment under general anesthesia.[16] In case of pediatric patient, the behavior management protocol should be included in the treatment planning and compare with the other available modalities. Pediatric dental treatment under general anesthesia is considered in different aspects when other behavior management protocols are not sufficient for establishing optimum dentition.

Conclusion

The aim of this case of dental treatment under general anesthesia in pediatric patients was to complete all required treatment in single visit which will alleviate the symptoms as well as restore the function of dentition. Treatment under general anesthesia is recommended in some specific circumstances like extensive amount of work is needed, patient′s psychological or emotional immaturity and non-communicative child or adolescents. In case of children with ASD or similar condition with severe dental destruction are required to be treated under general anesthesia in order to establish dentition and improvement of quality of life.

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