REVIEW ARTICLE

MANAGEMENT OF CHILDREN WITH SPECIAL HEALTH CARE NEEDS - A REVIEW

ABSTRACT

Children are entitled as the future of the society and we have to ensure their healthy growth and development. Children with special health care needs (SHCN), because of their disabilities affect the dental condition too. They have comparatively poor oral hygiene and high prevalence of dental caries and periodontal problems. Parents of special children generally do not pursue for dental treatment unless some emergency issues happen to the kid. In earlier days emphasis was given on providing basic dental care to these special children, but recently, the dentistry has shown an enhanced interest in delivering overall oral health care to the mentally and/or physically-challenged children. The specialty of Pediatric and Preventive Dentistry provides both primary and comprehensive, preventive and therapeutic oral health care to these special children. Special children needs to be rehabilitated inorder to help them in their supreme level of functioning, regularize their life and spin-out their life expectancy.

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INTRODUCTION

Children with special health care needs are not weird or odd. They only want what everyone else also wants to be accepted. The American Academy of Pediatric Dentistry (AAPD) defines special health care needs (SHCN) as "any physical, developmental, mental, sensory, behavioural, cognitive, or emotional impairment or limiting condition that requires medical management, health care intervention, and/or use of specialized services or programs. The condition may be congenital, developmental, or acquired through disease, trauma, or environmental cause and may pose limitations in performing daily self-maintenance activities or substantial limitations in a major life activity. Health care for individuals with special needs requires specialized knowledge acquired by additional training, as well as increased awareness and attention, adaptation and accommodative measures beyond what are considered routine.[1] Special children have relatively high prevalence of deprived oral hygiene with poor gingival and periodontal health and high risk of dental caries. Oro-dental health problems and its treatment creates a huge burden in these special children. Neither the special children nor their caregivers practice proper oral hygiene or follows appropriate diet. Parents already have a mind block because of the burden of medical problems and their treatment. And because of this reason they generally do not go for a routine dental check up. Also, the health planners will overlook the need for oral health care in these children. This article reviews on commonly seen oral health care problems in special children and their management in a dental clinic. Proper understanding about potential barriers to oral health care and the consequences of compromised oral health in special children may help health professionals identify high risk patients early, bestow anticipatory guidance, and timely reference to pediatric dentists.

ORAL HEALTH CARE PROBLEMS COMMONLY SEEN IN CHILDREN WITH SPECIAL HEALTH CARE NEEDS (SHCN)

The oro-dental condition of children with SHCN can be directly or indirectly correlated to their disabilities. Abnormal growth and compromised medical conditions have an impact on oral health too. Also the oro-dental problems can have a shattering effect on the general health of these special children.[2] Commonly seen oral problems in children with special needs and the management in a dental clinic is listed below.

Tooth eruption and dental anomalies

Early, delayed or normal eruption of the teeth are seen in children with SHCN. Delayed eruption is mostly seen in children having Down syndrome and hypothyroidism. Variations in the shape, size, and/or number of the teeth are common in special children. Abnormal teeth usually have a cosmetic concern and the crowded teeth will increase the risk for dental caries.[3]

Malocclusion and crowded teeth

Malocclusion and crowded teeth more mostly seen in children with special health care needs like those with cerebral palsy, Down syndrome, and craniofacial abnormalities. Mal-aligned teeth is due to disharmonious relationship between extraoral and intraoral musculature. Hypertonicity of facial muscles seen in spastic type of cerebral palsy often leads to constriction of both maxillary and mandibular arches. This results in anterior open bite and posterior crossbite. But in case of athetosis type of cerebral palsy, the facial musculature is hypotonic and hence flaring or spacing between teeth is seen. Crowded teeth resists effective cleaning of the tooth surfaces and increases the risk of dental caries and periodontal disease.[4]

Enamel hypoplasia and enamel demineralization

Children with genetic diseases, preterm babies (low birth weight) and/or with developmental disturbances are at a greater risk for the development of enamel hypoplasia. Enamel hypoplasia is mostly visible on the middle or occlusal third of the teeth. Enamel demineral-

ization due to poor oral hygiene and an enhanced acidic oral cavity either due to snacks or liquid medications are mostly seen in and around the gingival line. The white spot lesions best depicts the initial demineralization that are best seen by lifting the lip procedure.[5]

Dental Caries

Children with SHCN generally presents an increased prevalence of dental caries. The contributing factors accounts for

a. Lack of proper cleaning of the oral cavity by a weak tongue following an uncoordinated chewing may leave more food in the mouth in children with cerebral palsy.[6]

b. Compromised manual dexterity leads to inefficient tooth-brushing and the related issues like gagging due to toothbrush, paste, or saliva leads to incomplete cleaning of all areas.

c. Because of the child's inability to spit, swallowing of toothpaste happens

d. Frequent snacking and unhealthy eating habits that including soft and sweetened diet provides a favorable acidic environment for the cariogenic bacteria to act.

e. Dry mouth(Xerostomia) due by medications taken for altered medical conditions.

f. Gastroesophageal reflux disease (GERD) and frequent vomiting.

g. Gingival hyperplasia and crowded teeth will increase the risk.

h. Frequent intake of liquid medications often contains sugar and acids (to make it palatable).

I. Developmental disturbances of enamel like hypoplasia and demineralisation especially in the maxillary incisors and primary molars.[7]

Gingival hyperplasia

Gingival hyperplasia is seen in children taking medications for seizures like in epilepsy, especially phenytoin. The other medications that causes gingival hyperplasia includes calcium channel blockers like nifedipine and immunosuppresants like cyclosporine A. Chronic gingivitis due to lack of proper oral hygiene will exacerbate the medication/drug-induced gingival overgrowth. Although gingival hyperplasia demands cosmetic concern, it will also lead to other problems like altered tooth eruption, difficulty while chewing, and gingival inflammation.[8]

Trauma and bruxism

Special children those who have seizures, poor muscle coordination, abnormal protective reflexes and developmental delays, often encounter with trauma to the face and mouth. Some special children also presents self-injurious behavior (Masochism) which damages the oral structures. Those children suffering from cerebral palsy or severe mental retardation like in Down syndrome often brux the teeth. This tooth grinding leads to enamel loss. Also a difficulty with chewing can occur due to tooth sensitivity. Bruxism often leads to flattened tooth surfaces, headaches, pain on TMJ, and gingival and periodontal diseases.[8]

MANAGEMENT OF DENTAL PROBLEMS IN SPECIAL CHILDREN

Management of oro-dental problems in special children includes relieving the oro-dental pain and control of oral infections, treatment of the existing untreated disease and planning for the prevention of further anticipated oral diseases. There is no difference in treatment procedures for dental diseases in special children except for sedation even for procedures like prophylaxis, restorations, and minor oral surgery. If there is any concern about a special child's cooperation or his/her ability to tolerate dental procedures, he/she should be referred to a pediatric dentist or a specialist that has undergone training in sedation.

Daily preventive care at home

Daily preventive dental care at home has to be tailored to meet the specific needs of the child. This can be best addressed by the dental and health professionals associated with providing

caring for the special child. The concept of Dental home provides preventive and routine care for special children.

Toothbrushing: If the child swallows toothpaste while brushing, care takers should be careful to restrict the amount of toothpaste to a smear that is less than a pea-sized amount or else can opt a non-fluoridated toothpaste. If gagging is exagerrated by the toothpaste, the teeth can be alternatively brushed with fluoride mouth rinse.

Fluoridated toothpaste: AAPD recommends smear of toothpaste for infants and children under age 3 and a pea-sized amount for children aged 3 through 6. Care should be taken to prevent the ingestion of toothpaste. For children between age 3 to 6 who finds it difficult to spit can be allowed to drool into a cup. If the child continues to swallow the toothpaste, a non-fluoridated toothpaste have to be used.

Fluoride rinses: Care should be taken while using fluoride rinses in special children. It should be recommended only in children those who can swish and spit. Most of the special children have oral motor dysfunction and they tend to swallow the rinse. Hence it should be applied with a cotton swab. Alcohol-free mouth rinses preferred.[9,10]

Professional care

This type of fluoride treatment with gel, foam or varnish finds to be beneficial for children those who are unable to use fluoride rinses at home and who are at high risk for dental caries. Modifications are needed for children with oral motor dysfunction like abnormal reflexes or muscle control and oral hypersensitivity like overreaction to touch, taste, and/or smell. Gels or foams are applied in trays and requires constant use of suction in order to prevent choking, excessive drooling of saliva and aspiration of gels or foams. Trays will aggravate hyperactive gag reflexes in special children. Hence brushing the teeth with gel or foam while using suction finds to be more effective. Fluoride varnish seems to be the best type of professionally applied fluoride for children with SHCN. Application has to be repeated every 3-6 months in children who are at high risk for dental caries.[9]

Dental sealants

Special children usually cooperate with dental sealant application as its application does not require either an injection or the placement of a rubber dam. Wet bond dental sealants are useful in special children as they chemically bond to moist teeth and do not require a dry field for their application. But isolation seems to be difficult with some special children those who have oral motor dysfunction. Effective and efficient suctioning is required for successful application of dental sealants. Dental sealants cannot be used in special children who severely brux their teeth because of cognitive disabilities, cerebral palsy, or autism as such teeth have flattened occlusal surfaces.[8]

Antimicrobial agents

Antimicrobials are highly recommended for special children with disorders like leukemia, kidney failure, immune deficiencies, and in fungal and opportunistic infective conditions and also in cases when there is moderate to severe gingivitis or periodontitis.[11] Antimicrobial rinses should be used only in children who can swish and spit.

Chlorhexidine (CHX): Chlorhexidine helps to prevent dental caries and periodontal diseases as it is effective against Streptococcus mutans the key bacteria causing dental caries. It is available in the various forms like gels, chewing gums, varnishes, and rinses. It is available in various concentrations too. Varnishes and gels seems to be more useful than rinses for many children with SHCN. Rinses has to be applied with a cotton swab twice a day. Chlorhexidine is highly effective in children with high caries risk.

Xylitol: It is a low-calorie sugar substitute and short-term exposure to xylitol has been shown to decrease S. mutans levels in both saliva and plaque. It has got additive dental caries preventive action along with fluoride. Children over age 3 can use xylitol containing chewing gums if they are able to chew without choking. Xylitol gums has to be chewed for 3–5 min per session and has to be repeated three to five times per day.

Oral prophylaxis

Heavy calculus deposits are seen in special children caused by inadequate salivary flow, metabolic disorders, mouth breathing, tube feedings, oral motor dysfunction, kidney failure, or inadequate oral hygiene. If the ultrasonic scaling is intolerable to the child hand scaling can be considered.[12]

ORAL EXAMINATION

The oral examination of a special child is not different than routine oral examination of a normal child. However, oral defensiveness, increased gag reflex, and oral motor hypotonicity can make the oral examination little more difficult and it should be documented. The primary care physician should make an increased effort to complete an oral examination too. They should examine the areas like teeth, gingiva and palate and document if any oro-facial anomalies present. Early referral to a pediatric dentist can be done to ensure complete oral examination.[8]

BARRIERS TO ACCESS TO DENTAL CARE IN CHILDREN WITH SPECIAL HEALTH CARE NEEDS

Oral health care seems to be the most common unmet need among the special children. McIver[13] has pointed out the following barriers to access dental care in special children

1. Primary medical care system: Dental health is given least priority as the child has got more urgent medical health care. And most of the times dental treatment seems to be practically difficult with the child's present medical issues.
2. Parents: The child's parents or caretakers think that the child's milk teeth will eventually fall off which further complicates the dental condition of the child. Also most of the parents also find it difficult to access a dentist who can treat children with SHCN. The dental treatment of special children is more time consuming too.
3. Child: The child himself poses numerous problems to get dental treatment because of inability to understand the importance of oral procedure and not able to behave cooperatively in a dental clinic.
4. The dentist: General practitioners find it difficult to deliver dental treatment to special children because of inadequate knowledge and clinical experience of the dentist in handling such kids. Other non-educational factors such as special arrangements like access to dental clinic (having lift if in top floors), spacious enough to accommodate wheel chair also causes hindrance to delivery of proper dental care to special children.
5. Payments for dental care: Multiple visits and dental treatment charges cause an extra financial burden on parents along with medical expenses.

REFERRALS

AAPD recommends that all children should be referred to a dentist 6 months after the first tooth erupts or by age 12 months (whichever comes first) for establishment of a proper dental home.[14] All children with Special health care needs (SHCN) fall into high risk category and should be referred to a dentist by 1 year of age. Children with SHCN needs to visit a pediatric dentist every 2-3 months for professional preventive care, depending upon the risk factors Any child with evidence of caries, gingival or eruption anomalies should be referred to a pediatric dentist immediately.

CONCLUSION

The birth of a child is always eagerly awaited by family and friends as it is always an event of bundle of joy and happiness. However it becomes apparent that something is amiss with their newborn, their world is worn out. With great anger denial and depression parents of such children suffer great agony. Sometimes parents lose their temper and outburst on the innocent child who suffers for no fault of his own. The maintenance of good general and oral health of such children seems to be very difficult and their oral cavity may be ravaged by dental caries and periodontal diseases. Hence the management of these God"s Forgotten Children is really a task which requires special effort on the part of dental sur-

geon and the pediatric dentist. It is essential to understand the psychology of both the special child and the parents. Parental anxiety should also be taken into consideration.

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