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Anticipatory Guidance in Pediatric Dentistry

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I. Introduction

Anticipatory Guidance is defined as proactive counselling of parents and patients about developmental changes that will occur in the interval between health supervision visits that includes information about daily caretaking specific to that upcoming interval [1].

Anticipatory guidance is the process of providing practical developmentally appropriate information on children's health to prepare parents for significant physical, emotional and psychological milestones [2]. It provides a framework for prevention that goes beyond caries to address all aspects of children's oral health. It forces interaction by requiring the clinician to seek information about child's development from the parent and by directing the clinician to develop individualised plans or strategies [3].

Individualised discussion and counselling are an integral part of each visit and parents are generally counselled on topics such as oral hygiene maintenance and its importance, dietary habits, development of oral tissues, fluoride needs, non – nutritive habits, use of antimicrobials and medications on oral health, speech and language development, injury prevention, tobacco abuse, substance abuse, and intraoral and perioral piercing [2, 4] all of these which have the potential not only to affect the physical health but can also affect the emotional health and psychological well-being of the individual and so Anticipatory Guidance needs to start from the prenatal period itself as the health status of the mother significantly affects the child. .

Emphasis is to be placed on importance of primary teeth for chewing, speaking, jaw growth and craniofacial development and self-esteem [4]

Prenatal Counselling: Maternal oral health and caries status adversely affects infant's oral health as vertical transmission of mutans streptococci has been well documented and the condition so caused is also aptly named as "Maternally derived Streptococcus Mutans disease." [5]Also studies have revealed a reduction in the caries activity in children whose mothers used xylitol products [6,7] as xylitol significantly reduces the levels of mutans streptococci by disrupting the energy production processes leading to a futile energy consumption cycle and cell death. [6-8]

Preterm infants and infants with very low birth weight experience a higher incidence of enamel (tooth) defects and enamel hypoplasia [9]. Periodontal disease has been linked to preterm labour [10]. So expecting mothers should take the necessary professional advice to ensure optimal oral health for the infant.

Development Of Oral Tissues: The eruption sequence, the ages of eruption of the primary teeth (from about 6 months to 3years of age) and the associated conditions are to be explained. Emphasis needs to be placed on importance of primary teeth for chewing, speaking, jaw development, overall growth and self-esteem. Hygiene practices such as brushing and flossing to be inculcated at the earliest to facilitate the maintenance of oral health.

Importance of balanced diet and restriction of intake of refined carbohydrates is to be stressed upon to minimise colonisation by cariogenic flora.

Certain conditions in the oral cavity of the infant which are of clinical significance such as Epstein Pearls, Bohn's Nodules and Gingival cysts of the new-born are to be discussed and the parents have to be reassured as they do not warrant any treatment .

Proper Positioning During Child Examination: This is critical in conducting an effective and efficient clinical examination. Knee –to – Knee positioning is recommended for children aged 6 months to 3 years and up to 5 years for children with special health care needs [5]. This Knee –to - knee position allows

i) the child to see the parent throughout the examination
ii) Reduces anxiety for the child
iii) Allows parents to directly observe the oral findings and to receive hygiene instructions
iv) Helps in stabilising the child during examination

Examination of the infant's mouth includes examination of baby's gums. Tongue, palate and mucosa and the parents need to be informed about various conditions that they may come across in the early stages of development. Natal teeth may be retained as they are primary teeth. Extraction of these teeth may be contemplated if they are likely to be aspirated or significantly irritate the tongue (Riga-Fede's disease) or lip [11].

The need for establishment of a dental home and regular dental visits for the child should be stressed. Once the child is over 3years the importance of sealant placement on primary teeth and later on permanent teeth should be informed to the parents [(4).]

Peri Natal Oral Health & Oral Hygiene: It is critical to consider an infant oral care programme in the context of mother – child pair or "dyad" that includes comprehensive maternal perinatal oral health care and treatment [12] as there exists a direct relationship between adult caregiver levels of Mutans Streptococci and the levels of Mutans Streptococci and Caries prevalence in their children.

Parents should be instructed to start wiping the baby's mouth with a soft cloth or finger along the baby's upper and lower gums twice a day and to brush with a soft toothbrush and a smear of fluoridated toothpaste as soon as the first tooth erupts into the oral cavity. Parents should also be advised against sharing of utensils and cups with their babies to reduce the spread of bacteria [4, 5, 13]

Teething ([13]: Eruption of primary teeth at about 6-9 months may go unnoticed or may be stressful for the child causing irritation, restlessness, drooling of saliva, loss of appetite. Discomfort may be reduced by

i) Chewing on a hard or frozen teething ring
ii) Applying pressure over the gums or rubbing them with clean fingers
iii) Temporarily numbing the gums by applying topical anaesthetics

For a 5year old child the parents should be informed about the eruption of the first permanent molar and that a baby tooth will not be lost when this occurs.

Diet, Nutrition And Food Choices: Caries conducive dietary practices appear to be established early by 12 months of age [2]. The Parents / caregivers should be intimated against putting baby to bed with a bottle. The ill effects of at will breast feeding are also to be intimated. Children should be encouraged to use the cup as early as possible (by 1 year of age) [4].

Parents should be educated that the frequency of sugar exposures is more detrimental to oral health rather than the amount of sugar. Prolonged bottle feeding with sugar containing drinks and frequent between meal consumption of sugar containing snacks or drinks (juice, formula, soda) should be thoroughly discouraged. Acids in carbonated beverages can have a deleterious effect on tooth enamel causing erosion [2].

Dietary analysis is to be done at periodic intervals and the role of dietary choices on oral health, malnutrition and obesity is to be addressed through nutritional and preventive oral health counselling. Healthy alternatives are to be suggested for replacing the cariogenic foods [2] .

Emphasis should also be placed on importance of balanced diet for children. Parents and patients should also be educated about the complications of Eating Disorders in young adolescents such as Bulimia and Anorexia Nervosa which are psychosomatic in nature, result in cervical erosion [14],

Fluoride Needs: Since fluoride contributes to the prevention, inhibition and reversal of caries, the family's source of drinking water (bottled versus tap water, filtered or non-filtered, water treated by reverse osmosis) is to be assessed for the content of fluoride [2, 4]. Supplements of fluoride or topical fluoride applications may be advocated depending upon the needs of the patient.

The harmful effects of fluorosis are to be highlighted to all patients from areas of high natural fluoride content [4].

Uses of non-fluoride preventive measures such as xylitol wipes, chlorhexidine mouthwashes, CPP-ACP are to be considered to minimise the caries risk.[5,12]

Motivational Interviewing [5, 12]: It is a counselling technique that relies on two-way communication between the clinician and the patient or parent. It is meant to establish a therapeutic alliance that is based on rapport and trust. [5,12].

In this the clinician conducts an interview by asking questions to help parents and patients to identify existing problems, risk factors that can contribute to the existing clinical condition, listens to the parent's concerns and encourages self –motivational statements and change and is asked to commit to two self-management goals or recommendations for ensuring good oral health and general health for the child patient.

The list of management goals include:
i) Regular dental visits for the child
ii) Dental treatment for the family
iii) Weaning off bottle especially during sleep
iv) Brushing with Fluoridated toothpaste twice a day
v) Water or milk in a Sippy cup
vi) No juice or no added sugar in juice
vii) Healthy Snacks
viii) No Soda
ix) Chew Xylitol gum
x) Drinking tap water
xi) Avoiding junk food and candies

Commitment by the patients/parents towards achievement of these goals is of utmost importance in working towards optimal oral health of the child.

Non-Nutritive Habits: Non – Nutritive oral habits and pacifier habits may apply forces to teeth and dento alveolar structures. Although the use of pacifiers and digit sucking are considered normal, habits of sufficient intensity, duration and frequency can contribute to deleterious changes in occlusion and facial development. So it becomes important to discuss the need to wean from the habits as early as possible (by 3years of age) [2].
For school aged children and adolescents patient counselling regarding any existing habits (nail biting, bruxism, clenching) is appropriate. The consequences of eating or drinking acidic foods should be elaborated to the children [4]\.

Sucking Habits: Sucking is a natural reflex which is present inutero and is generally given up by 4 – 5 years of age, but if it persists beyond this age it may result in malocclusions.

To break the habit, child must be educated about the harmful effects of thumb sucking. Child should be encouraged and his efforts to quit the habit are to be lauded. The source of stress also needs to be addressed.

Pacifier sucking is to be discouraged. If in the early ages child uses a pacifier then certain precautions are to be taken such as [5,15]
i) Never add or dip the pacifier into the flavouring agent
ii) Never allow children to share a pacifier
iii) Never leave an infant unattended with the pacifier in the mouth
iv) Do not allow an infant to sleep with the pacifier
v) Pacifiers are to be kept clean
vi) Replace the pacifier regularly to avoid using one that is torn or ripped
vii) Never force a pacifier into child's mouth and never pull out one forcibly from the child's mouth
viii) Never attach a pacifier to the child's body or crib with a string, ribbon or cord
ix) Pacifier is to be wider than child's mouth. Use of the pacifier is to be discouraged if the entire pacifier fits into child's mouth
x) Never Substitute a bottle nipple for a pacifier
xi) Discourage the habit as early as possible

Speech And Language Development: Speech and language are integral components of child's early development. Deficiencies and abnormal delays in speech and language production should be recognised early and appropriate referral made to address these concerns. Communication and Co-ordination of appliance therapy with a speech and language professional can assist in timely treatment of speech disorders.[2].

Injury Prevention: Facial trauma that results in fractured, displaced or lost tooth can have significant negative, functional, esthetic and psychological effects on children. Greatest incidence of trauma to the primary dentition occurs at 2 – 3 years of age and most common injuries to the permanent dentition occur secondary to falls, traffic accidents and sports. Practitioner needs to provide age appropriate injury prevention counselling for oro-facial trauma. Initially discussions should include advice regarding playing objects, pacifiers, car seats and electric cords [2].

"Childproofing the home" becomes mandatory that includes electrical cord safety and poison control. The use of "car seat' needs to be emphasised and the care-givers are advised to keep the emergency numbers handy as children may experience episodes of trauma [5].

As motor co-ordination develops parents and the patients should be counselled on additional safety and preventive measures such as use of helmet when riding a bicycle or tricycle and the use of mouthguards for sporting activities [4,5]. Caregivers must be encouraged to keep emergency numbers handy.

Antimicrobials, Medications And Oral Health: Presence of sucrose and/or other fermentable carbohydrates in the formulation of Pediatric medicines and the low pH values contribute to the cariogenic potential of these drugs.

One of the most common practices observed was the tendency to add sugar to the medicine to make the taste more acceptable thus contributing to the cariogenic potential of the drug.

Review of literature also reveals that children using medications for chronic conditions like Asthma, Epilepsy, Ear Inflammation or upper Respiratory Tract infection. Patients with Respiratory and Renal diseases are at a greater risk of caries development [16].

The use of sugar products (syrups, expectorants antibiotics in solution, tonics, and homeopathic products) and those medications which can reduce the salivary flow (antihistamines, benzodiazepines, appetite suppressants (used mainly by adolescents), antiparkinsonian drugs, muscle relaxants, hypotensive drugs and diuretics make the child more susceptible to dental caries as they need to be administered for potentially longer duration of time period and at night [17] especially when the salivary flow is less and reduced reflexes of swallowing and muscle movement [16] thus ensuring the retention of carbohydrate intraorally for a greater duration.

Parents and caregivers should be informed that medicines containing sweeteners can cause tooth decay (medicine caries) and that the baby's mouth is to be wiped with a soft damp washcloth or should brush the child's teeth after administering medicines [4].

Presence of sucrose and /or other fermentable carbohydrate

Regular intake of certain medicines such as asthma medications can reduce salivary flow which may prove detrimental to child's oral health [4].

Tobacco Abuse And Substance Abuse: Smoking and smokeless tobacco use are almost always initiated and established during adolescence. During this sensitive period of adolescence children may be exposed to opportunities to experiment with other substances that negatively impact their health and well – being. Practitioners should educate the patients regarding the serious consequences of tobacco use, exposure to second hand smoke, alcohol and drug abuse. When substance abuse has been identified referral for appropriate intervention is indicated [2].

Intraoral And Perioral Piercing: Complications from intraoral and perioral piercing can range from pain, infection and tooth fracture to life – threatening conditions such as bleeding, edema and airway obstruction. So imparting information regarding pathological conditions and sequelae associated with these piercings should be conveyed to the preteen child and parents and should be reinforced during subsequent visits [2].

II. Conclusion

Applying Anticipatory Guidance to dental preventive education is an organised way for all dental practitioners to enjoy the attention of parents and be more successful in preventive dentistry. Early dental intervention using Anticipatory Guidance may be the next frontier in dental caries reduction.

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