

The Association between the Type of Bad Oral Habit and the Kind of Malocclusion in Children

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Abstract

Malocclusion is usually known as an inherited or congenital condition. However, in many cases it is caused in early childhood by prolonged use of a pacifier or bottle/breast feeding, thumb/foreign object sucking, injuries that result in the misalignment of the jaw, poor dental care that results in improperly fitting dental restorations or untreated carious lesions, primary teeth extractions without space maintainers, mouth breathing, potentially caused by allergies or airway obstruction by enlarged adenoids/tonsils or bad habits. The consequences of malocclusion in children are deplorable, leading to improper alignment of the teeth, alteration in the appearance of the face, self-esteem problems, frequent biting of the inner cheeks or tongue, discomfort when chewing or biting, speech problems, including the development of a lisp, mouth breathing resulting in adenoid and long face formation, trauma and caries susceptibility. It is therefore important to explore the association between the type of bad oral habit and the kind of malocclusion in children in order to predict the future malocclusion type in early childhood and educate parents with evidence-based data how to prevent malocclusion development in their children [1,2].

Keywords: Children; Malocclusion; Oral Habit; Primary Dentition; Teeth

Background

Malocclusion may cause a child to have - problems eating or speaking (masticatory function and phonetics); teeth grinding; loss of baby teeth too soon or very late (overretention); mouth breathing (adenoid face, tongue thrust); tooth decay (difficulty in cleaning); gum disease (papillitis); jaw joint problems; impaired esthetics (diastema, etc); low self-esteem; dental trauma susceptibility [3]. Early recognition of malocclusions is in the hands of the primary care providers. Pediatric and general dentists should be familiar with conditions that are known to interfere with growth and development of a child [4,5]. Such conditions must be treated in the primary dentition to facilitate normal growth and development and offered some benefit to the patients. It is indeed a well-known and scientifically proven fact, that bad oral habits, such as prolonged use of a pacifier or bottle/breastfeeding, thumb/foreign object sucking or biting, mouth breathing and atypical swallowing, pattern provoke malocclusion in children

[6,7]. Vertical malocclusion develops as a result of the interaction of many different etiologic factors including thumb and finger sucking, lip and tongue habits, airway obstruction, and true skeletal growth abnormalities [8]. Can we predict the future malocclusion type in early childhood? This study aimed to evaluate the link between certain types of such habits and the kind of pediatric dento-skeletal discrepancies.

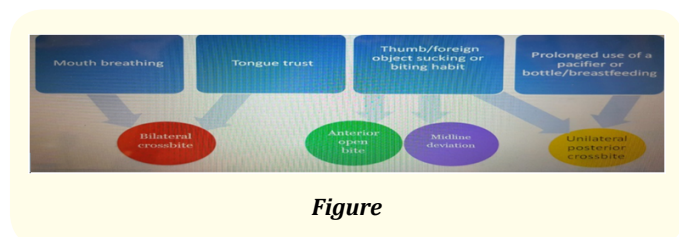
Methods

A population-based study was conducted, involving 185 children aged 4 - 6 years enrolled at the Russian dental clinics. Three age groups of children were analyzed using questionnaire, medical records, and clinical examinations. The acquired malocclusion was defined only if one or more of the following factors were presented in a generally healthy child without any congenital oral anomaly or previous dental treatment: 1) Bi- or unilateral functional crossbite; 2) Midline deviation; 3) Anterior open bite; 4) Cl.I, Cl.II, Cl.III malocclusion. Bad oral habits were determined according to the

questionnaire and data from the clinical examinations. The impact of each type of bad habit on the certain kind of child's malocclusion was assessed using malocclusion and bad oral habits scale.

Results

78,4% of all children with malocclusion had prolonged use of a pacifier or bottle/breastfeeding, 54,6% had a thumb/foreign object sucking or biting habit. Many of those patients also suffered from frequent biting of the inner cheeks or tongue, discomfort when chewing or biting, speech problems, ENT problems. Statistically significant 73, 5% of patients with malocclusion had the recognized correlation between their problems with occlusion and bad habits ($r = 0,723$; $p = 0,003$). Unilateral posterior crossbite was mostly associated with prolonged use of a pacifier or bottle/breastfeeding, thumb sucking, bilateral crossbite - with tongue trust and mouth breathing, anterior open bite - with thumb/finger sucking, midline deviation - with foreign object sucking or biting. Most parents didn't consider prolonged foreign object sucking or biting as a "bad oral habit" and therefore were unaware of the direct correlation between bad oral habits and the developing pathology of their children's occlusion (67,6%).



Figure

Discussion

Digit sucking in most cases led to proclination of the upper incisors, retroclination of the lower incisors, narrowing of maxillary arch due to alteration in the balance between cheek and tongue pressure, producing unilateral posterior crossbite, incomplete overbite or localized anterior open bite and midline deviation. Most of cases mouth breathing appears as a bad habit after prolonged sucking (breast feeding or bottle, pacifier or finger sucking). But the nasal obstruction is also the possible cause of mouth breathing. Mouth breathing leads to bilateral crossbite, open bite, tongue trust, lip licking. Most parents didn't consider prolonged foreign object sucking or biting, mouth breathing as a "bad oral habits". Therefore, the participation of the parents is the key to a child's recovery. Only nasal breathing will maintain this proper oral posture and therefore, ideal facial growth. Therapy and positive reinforcement can be the motivator to eliminate poor oral habits for children.

Conclusion

The strong association between the type of bad oral habit and the kind of dento-skeletal discrepancies in children was determined. Every primary check-up of small children should include assessment of occlusion and medical record of oral habits. Attention must be paid to the early malocclusion prevention through the elimination of bad oral habits in childhood. Parental education should be the first part of the comprehensive malocclusion prevention program.

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