

Review

Abnormal oral habits: A review

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Oral habits are learned patterns of muscle contraction and have a very complex nature. They are associated with anger, hunger, sleep, tooth eruption and fear. Some children even display oral habits for release of mental tension. These habits might be non-nutritive sucking (thumb, finger, pacifier and/or tongue), lip biting and bruxism events. These habits can result in damage to dentoalveolar structure; hence, dentists play a crucial role in giving necessary information to parents. This information includes relevant changes in the dentoalveolar structure and the method to stop oral habits. Also, a dentist is required to treat the ensuing malocclusion.

Key words: Oral habit, pacifier, bruxism, hand sucking, nail biting, lip chewing.

INTRODUCTION

A habit is a repetitive action that is being done automatically. Repetitive behaviors are common in infantile period and most of them are started and finished spontaneously. One of the most common repetitive behaviors in infantile period is hand sucking (Maguire, 2000). The reflex of sucking appears around the 29 weeks of age, that is, one of the first sophisticated patterns of behavior in infant (Rani, 1998). Hand sucking is naturally developed in 89% of infants in the second month and in 100% of them in the first year of age (Maguire, 2000; Rani, 1998). As the mouth is the primary and permanent location for expression of emotions and even is a source of relief in passion and anxiety in both children and adults, stimulation of this region with tongue, finger, nail or cigarette can be a palliative action (Bear and Lestor, 1987).

Oral habits could be divided into 2 main groups:

- (1) Acquired oral habits: Include those behaviors which are learned and could be stopped easily and when the child grows up, he or she can give up that behavior and start another one (Finn, 1998).
- (2) Compulsive oral habits: Consist of those behaviors which are fixed in child and when emotional pressures are intolerable for the child, he or she can feel safety with

this habit, and preventing the child from these habits make him or her anxious and worried (Finn, 1998).

The prevalence of oral habits in high school girls and primary school students have been reported to be 87.9 and 30%, respectively (Yassaei et al., 2004). Quashie-Williams et al. (2007) found 34.1% of children with an oral habit in his study.

Since searching the PubMed database revealed no review articles associated with oral habits from year 2000 (Nowak and Wren, 2000) up to now, the aim of this present study was to review different oral habits and their management as a guide to parents and dentists.

THUMB SUCKING

Thumb sucking is the most common oral habit and it is reported that its prevalence is between 13 to 100% in some societies.

The prevalence of this habit is decreased as age increases, and mostly, it is stopped by 4 years of age (Maguire, 2000; Larson, 1985). There is a relationship between the level of education in parents, the child nutrition and the sucking habit (Farsi and Salama, 1997). If the child chooses this habit in the first year of his or her life, the parents should move away his or her thumb smoothly and attract the child's attention to other things such as toys. After the second years of age, thumb

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sucking will decrease and will be appear just in child's bed or when he/she is tired (Maguire, 2000).

Some of children who do not stop this habit, will give it up when their permanent teeth erupt, but there is a tendency for continuing the sucking habit even until adult life (Johnson and Larson, 1993).

According to a study in 1973, millions of kids do not give up this habit before the eruption of teeth (Van Norman, 1997). Nowadays, the level of stress is higher than the time of that study, and as stress is a powerful stimulus in sucking habit, it is probable to find more kids with long-term sucking habit if we do a research exactly like the one which was done in 1973 (Van Norman, 1997).

Thumb sucking has 2 types:

(1) Active: In this type, there is a heavy force by the muscles during the sucking and if this habit continues for a long period, the position of permanent teeth and the shape of mandible will be affected (Johnson and Larson, 1993).

2) Passive: In this type, the child puts his/her finger in mouth, but because there is no force on teeth and mandible, so this habit is not associated with skeletal changes (Gale and Ager, 1979).

In the case of active thumb sucking habit, it is better for a child not to be blamed, teased, offended, humiliated and punished, because these methods will increase the anxiety and consequently increase the incidence of the habit (Johnson and Larson, 1993). Long-term finger sucking habit has harmful effects on dentition and speech (Van Norman, 1977). In 1870s decade, Camble and Jander reported for the first time that long-term finger sucking has harmful effects on dentition (Gale and Ager, 1979).

The side effects of finger sucking are:

1. Anterior open bite (Gale and Ager, 1979; Josell, 1995 Yemitan et al., 2010)
2. Increased overjet (Yemitan et al., 2010)
3. Lingual inclination lower incisor and labial inclination upper incisor
4. Posterior cross bite (Gale and Ager, 1979; Warren and Bishara, 2001)
5. Compensatory tongue thrust (Gale and Ager, 1979; Warren and Bishara, 2001).
6. Deep palate
7. Speech defect (Bishara, 2001).
- 8 Finger defects (Eczema of the finger due to alternate dryness and moisture that occurs and even angulations of the finger) (Vogel, 1998).

The severity of changes in dentition due to finger sucking is related to the duration and times of doing the habit. Also, the position of finger in mouth, dental arches relation and child's health affect the severity of changes (Maguire 2000; Yemitan et al., 2010).

During active phase of permanent tooth eruption, there is a high risk for dental arches deviation (Maguire, 2000). In children who do the sucking habit for 6 h or more, especially during night or sleep, severe abnormalities in dentoalveolar system (Gale and Ager, 1979; Proffit and Fields, 2000) and minor skeletal effects will develop (Moore and McDonald, 1997).

Treatment

Dental changes due to finger sucking do not need any treatment if the habit stopped before the 5 years of age and as soon as giving up the habit, dental changes will be corrected spontaneously (Warren and Bishara, 2001; Proffit and Fields, 2000; Warren and Bishara, 2002). At the time of permanent anterior teeth eruption and if the child is motivated to stop the sucking habit, it is time to start the treatment as follows (Proffit and Fields, 2000):

- (1) Direct interview with child if he/she is mature enough to understand (Maguire, 2000; Proffit and Fields, 2000).
- (2) Encouragement: This can give the child more pride and self-confidence (Maguire, 2000; Bishara, 2001).
- (3) Reward system (Maguire, 2000).
- (4) Reminder therapy (Maguire, 2000; Proffit and Fields, 2000).
- (5) Orthodontic appliance: The final stage in treatment is the use of orthodontic appliance whether fixed or removable, which can play the role of reminder and can reduce the willing of finger sucking. For long-term habits or unwilling patient, the fixed intra oral appliance is the most effective inhibitor. In the case of using fixed or removable appliance, we should alarm the parents about potential problems in speaking or eating during the first 24 to 48 h, which are usual and self correcting. After active phase of treatment, the appliance should remain in place for more 3 to 6 month to minimize the relapse potential (Maguire, 2000).

USE OF PACIFIER

The use of pacifier is common in most countries and if it is not stopped until 2 or 3 years of age, it will not cause permanent changes in dentition, but the use of pacifier after the 3 years of age has harmful effects on dentition development, and if it is used more than 5 years old, these effects would be more severe (Poyak, 2006). The children who use pacifier are not willing to suck their fingers (Maguire, 2000).

Side effects of the use of pacifier

- (1) Anterior open bite
- (2) Shallow palate
- (3) Increased width of lower arch
- (4) Posterior cross bite use (Gale and Ager, 1979;

Warren and Bishara, 2001).

(5) Median otitis (Niemela et al., 2000; Warren and Levy, 2001).

(6) Risk reduction in sudden death syndrome (Fleming and Blaive, 1999; Cullen and Kiberd, 2000).

It is suggested that pacifier should be replaced in children who have the habit of finger sucking, because the harmful effects of sucking pacifier are less than finger (Warren and Bishara, 2002). In comparison between different pacifiers, despite the claims, it has been shown that there is no significant advantage for physiologic pacifiers over conventional ones (Zardetto et al., 2002)

NAIL BITING OR ONYCHOPHAGIA

Nail biting is a common and untreated medical problem among children (Tanaka et al., 2008). This habit starts after 3 to 4 years of age and is in its peak in 10 years of age. Its rate increases in adolescence, while it declines later. This problem is not gender dependent in children less than 10 years of age, but its incidence in boys is more than girls among adolescents (Tanaka et al., 2008).

This problem is a reaction in response to psychological disorders and some children will shift their habits from thumb sucking to nail biting.

Complications caused by nail biting

Malocclusion of the anterior teeth, teeth root resorption (Odenrick and Brattstrom, 1985), intestinal parasitic infections (Escobedo et al., 2008), change of oral carriage of Enterobacteriaceae (Baydas et al., 2007), bacterial infection and alveolar destruction (Tanaka et al., 2008). Moreover, about one fourth of patients with temporomandibular joint pain and dysfunction have been shown to suffer from nail biting habit (Saheeb, 2005). More than half of parents of children with nail biting, have a kind of psychological disorders such as depression (Ghanizadeh, 2008; Ghanizadeh and Mosallaei, 2009). It is seen in clinic that boys with nail biting have a kind of psychological disorder especially attention deficient hyperactivity disorder (ADHD) more than girls. This habit in higher ages will be replaced with some habits such as lip chewing, gum chewing or smoking (Finn, 1998). Children with nail biting should be evaluated for emotional problems.

Treatment

Putting nail polish or distasteful liquids on nails

LIP CHEWING

This problem happens almost in all cases in inferior lip

(Vogel, 1998) and can causes the upper incisors to tip labially and the lower incisors to collapsed lingually with the lower lip wedged between the upper and lower anterior teeth (Finn, 1998).

This habit is related to dryness and inflammation of lip and in severe cases will cause vermilion hypertrophy and in some people can cause chronic cold sore or lip crack (Ghanizadeh, 2008; Dahan et al., 2000).

BRUXISM

The actions of masticatory system are divided into 2 groups. Functional actions such as mastication, speaking and swallowing, and parafunctional actions such as teeth impacting (clenching) and bruxism.

Functional activities are controllable and occurred daily. Parafunctional actions may be consciously or unconsciously and are normally without sound. However, bruxism in nights is unconsciously and mostly it is with sound production (Okeson, 1998).

Sleep bruxism in the adult occurs during stages first and second of non rapid eye movement (REM) sleep and REM sleep. These people do not have any complaint about bruxism, and it would not affect their quality of sleep. But in the old and people with sleep apnea, bruxism can reduce the quality of sleep (Kato et al., 2001). Sleep bruxism has 2 types: Primary or idiopathic and secondary or iatrogenic. The first type is without any medical reason and the secondary type is whether with use of drug or without the use of drug (Kato et al., 2001).

Risk factors are as follows: Genetic: 20 to 50% of patients with sleep bruxism have positive family history (Hublin et al., 1998); age: The prevalence of this habit decrease with age (Dahan et al., 2000); cigarette smoking: The prevalence of sleep bruxism in smokers is 1.9 times more than non-smokers (Dahan et al., 2000); use of alcohol and caffeine (Dahan et al., 2000); tension and stresses (Yassaei et al., 2004).

Clinical findings of sleep bruxism include; report of grinding or impacting sounds of teeth; erosion of the teeth occlusal surfaces and breakdown of repairs; hypertrophy of masticatory muscles; hypersensitivity of teeth to cold air; joint sounds.

Treatment

There is no special recommended regimen, but increasing awareness of the patient, intra oral appliances, behavioral treatment and drugs like diazepam and clonazepam have been reported to be effective (Pierce and Gale, 1988).

CONCLUSION

Regarding the effect of stress on the development of oral

habits, increased stress level in modern societies cause these habits to become more prevalent as compared to the past decades. Since oral habits adversely affect dentoalveolar system, more attention to control and prevent them is required, so the duty of dentists is not only tooth repair and modification of dentoalveolar changes, but also, he has to have enough knowledge about prevention and treatment of disorders caused by oral habits.

This point is considerable that most parents who spend their time with their children are not aware of the harmful oral habits and their bad effects. Dentists should provide parents with information about different types of oral habits, etiology of habits especially with emphasis on role of stress in development of them and ways to manage and treat habits at home.

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