Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 6, 2021, Pages. 7561 - 7569
Received 25 April 2021; Accepted 08 May 2021.

Reframing the Behavior and Breaking the Thumb Sucking, Tongue Thrusting Habit in a 6 Years Old Child: A Case Report.

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Abstract:

An oral habit seems to be a standard or consistent process or acquired propensity that has been resolved by constant practice. Tongue thrust is the most typical, then comes the digit sucking usually seen oral habit. To intend an appropriate therapy, it is necessary to know the aetiology before any treatment. It is essential to analyse the child behaviour, which is the key to behaviour shaping/modification. Reframing technique helps alter the thought perception of an individual, which could be described employing ideals of cognitive-behavioural by Eric Berne, Freud's psychoanalytical hypothesis, and Pavlov's cognitive control. Without psychological management for habits, if other treatment methods are used, the child pairs the treatment with punishment and may become adamant. Hence, such as symptoms prescription or reverse psychology can be used. Thus, the modification within methodology could lead to changes in the brain and outlook of the patients, in turn trying to change one's health behaviour and life quality. This case report describes a six-year-old boy with a history of digit sucking and tongue thrusting addiction involved with non-pharmacological behaviour management techniques followed by tongue crib appliance.

Keywords:

Thumb- sucking, tongue thrusting, behaviour shaping, Dunlop's beta hypothesis, fixed tongue crib.

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Introduction

Oral habits are very common and one of the most deleterious habits in children. In most of the studies cited in the literature, the main concern for the authors is regarding the etiology of

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oral habits.[1] Such behaviours involve non-nutritive sucking habit (thumb/finger/pacifier), tongue-thrusting, tongue sucking, lip or nail-biting habits & bruxism. Digit sucking habit begins to develop soon after birth approximately 29 weeks in utero but also remains from infant stages through primary, mixed, and permanent dentition. Unless the habit continues into the mixed dentition a malocclusion can evolve.[2] Non-nutritive sucking behaviorare normal in infants and young children. Unremarkably two-third of such habitisself-limitedat the age of 4 years, if it continues after the age of 5 years it will be counted as harmful.[3] According to literature, etiology of the digit sucking habitis insufficient satisfaction of the sucking need in infancy, emotional theory and the pleasure derived from sucking.[4]

The American Academy of Pediatric Dentistry (AAPD) advised that the timely management of an oral habit is very important. Oral habit is related to undesirable dentofacial growth and thereby leading to unfavorable effects on the child psychology. Treatment principally depends upon the temperament of the child to prevent the habit.[3] Therapy should help the child to leave the habit rather than acting as a punishment and should also psychologically support the child. Child psychology plays an important role in pediatric dentistry. Before any treatment, it is important to analyze the child's behavior, which is the key to behavior shaping/modification.

To change the thought process of the child, both the communication and reframing technique plays an important role which in turn brings the desired behavior in a child. The reframing technique also helps in altering the thought perception of an individual and thereby the technique is used by the pediatric dentist to shift a child's view of a particular problem, event, or person. It is built on the hypothesis because when young kids can watch a situation from another point of view, opportunities for providing better, plausible explanations to one's issues rise.[4] An article by Nuvvula et al. (2013) explained the following: psychological perspectives involved in reframing.[5] Dental treatment can be a stressful situation for patients, primarily paediatric patients. The dentist must first make children calm down by establishing positive surroundings or help the kids assume an environment beyond the dentist clinic. Reframing has a disadvantage in children below 3 years. The dentist's example or language is just too high or beyond the ability to comprehend the kid.[6] If the behavior modification technique fails, then a reminder therapy should be employed using a habit limiting appliance.

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This paper presents, a case of thumb sucking and tongue thrusting habit which were corrected usingnon pharmacological methods ofbehaviour management on a 6 years old child followed by habit breaking appliance.

Case Report

A 6-year-old boy with no notable medical record reported to the department of pediatric and preventive dentistry, school of dental sciences, Sharda University, Greater Noida. Parents complained of gapsbetween the front teeth for 3 months and also complained of thumb sucking habit for a long time. The patient had a past dental history of pulpotomy in relation to left mandibular 1st primary molar. The child was eldest of the two siblings in the family, very shy and introvert (Pinkham classification, category 2) and negative behaviour (*Frankel behaviour Rating Scale*). His parents disclosed that the child had an active thumb sucking habit which he performed regularly and subconsciously throughout thesleeping hours. Further extraoral examination revealed a convex profile, potentially competent lips and retrusive chin. On examination, the right thumb showed callus formationand thumb was flat and wider as compared to the left thumb [Figure 1].

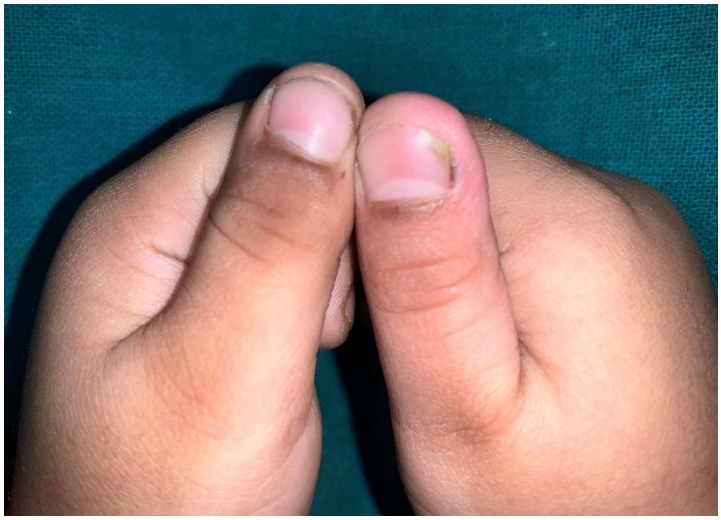

Figure 1: The right thumb showed callus formation.

On intraoral examination, the patient had normal soft tissue mucosa and mesial step molar relationship with open bite of 4-5 mm [Figure 2].

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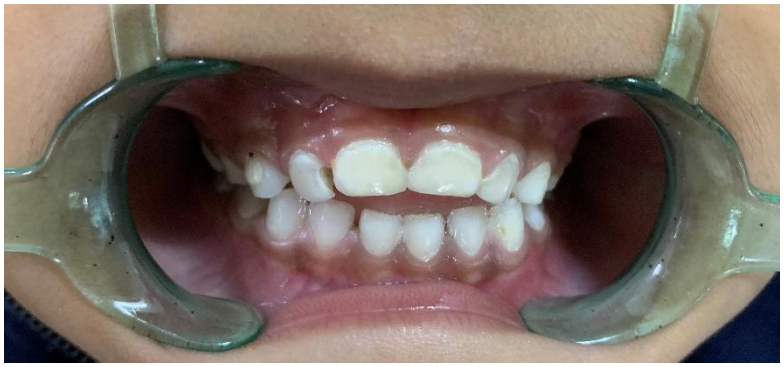

Figure 2: Open bite of 4-5 mm

During his first dental visitto the departmentparental counselling was done and the ill-effects of digit sucking habit was pointed out to the child and the parent. Under the psychological approach, parents were asked to encourage the child not to indulge in thumb sucking habit regularly and at the same time praise the child if there was any reduction in the duration of the habit (social reinforcement). The parents were also instructed to let the child sit in front of a mirror and continue his thumb-sucking habit, observing him as he indulged in the habit (Dunlop beta hypothesis). The patient was recalled after 15 days and the parents-reported that the child was stillindulging in the habit. After counselling, when no positive response was seen, chemical means, femite was prescribed. Inspite of the application of femite, the child was still indulging in digit sucking habit. So, the parents were advised for a fixed habit breaking appliance for the child, and informed consent was taken for the same from the parents.

As the child was shy and introvert, behavior management (tell show do technique) was performed. Thefixed habit breaking appliance was constructed of 0.7 millimetre stainless-steel wire with atranspalatal components for further retention and welded to bands on the maxillary second primary molars [figure:3]. In the recall visit after 2 weeks, the parents-reported that, inspite of the placement of the fixed appliance there was no reduction in the frequency of the habit. Moreover the child broke the appliance; this behaviour of the child reflects the reluctance to discontinue the habit and to wear the appliance. By looking at this negative behaviour of the child along with the tongue crib another approach of reverse psychology was opted. It was assured to the child that the appliance would not be fixed if its broken again. He was also informed that he could continue the habit, with the other digits also and increase the frequency of sucking the thumb (symptom prescription). A new tongue crib was again constructed and recall was maintained every month.

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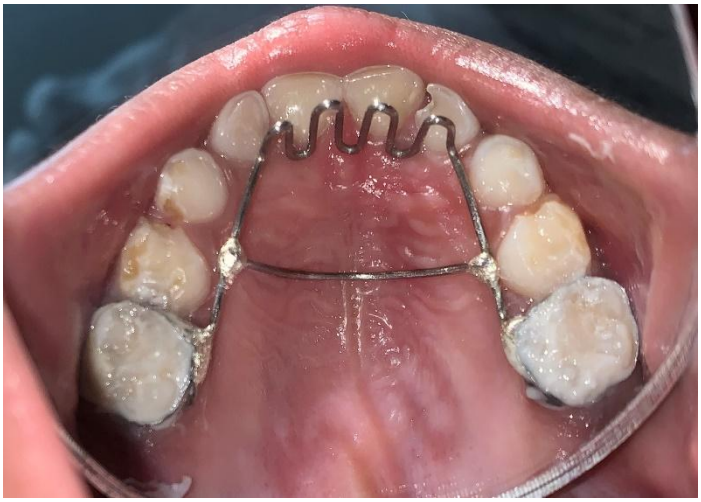

Figure 3: Fixed habit breaking appliance

When the child came on his recall visit after a month there were noticeable changes on his finger and a check-up showed a marked reduction in the thumb sucking habit as well as behavioural changes from negative to positive (*Frankel behaviour Rating Scale*). Based on his favourite cartoon, he was given stickers as rewards (material reinforcement). Within 3 months, the child completely discontinued the habit [Figure 4, 5] and was asked to wear the appliance for a minimum of six months to avoid relapse of the habit. After a period of 6 months, the appliance was removed.

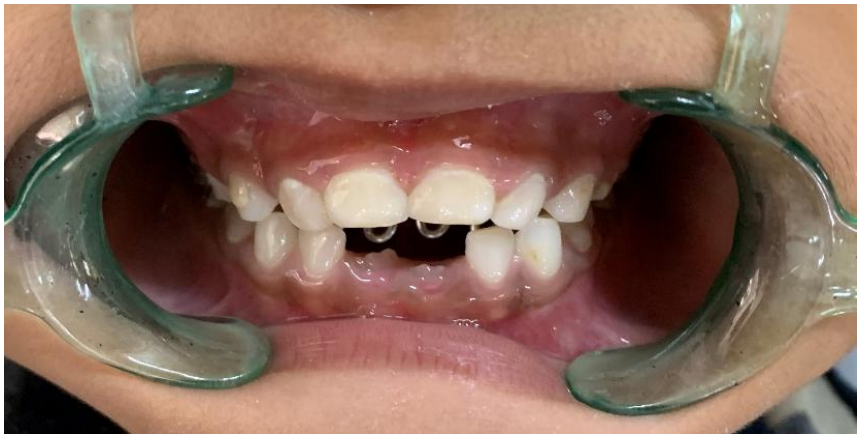

Figure 4: After 3 months.

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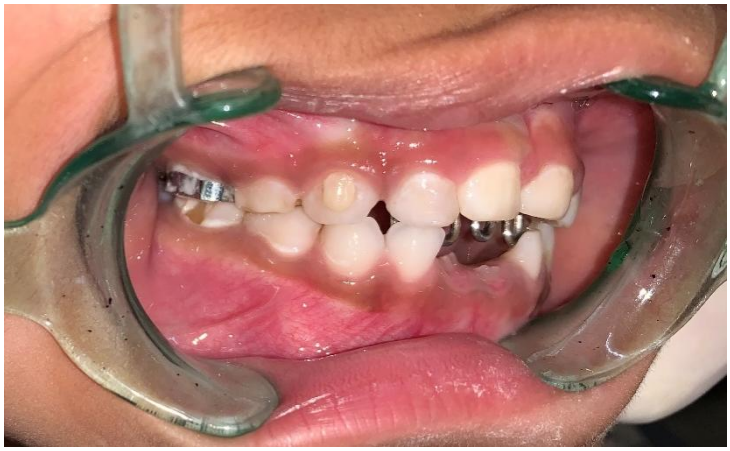

Figure 5: After 3 months.

Discussion:

Digit sucking includes active or passive sucking of any finger or thumb. The etiology of digit sucking is still unknown, however, several theories like Freud's psychoanalytic theory, learned behaviour theory, reduction in breast-feeding theory, and sensory deprivation theories have been widely accepted. Freud was the first mental health expert who popularised the psychoanalytic theory relating to the cause of finger and thumb sucking. He stated that digit sucking was an autoerotic behaviour and pleasure-seeking act, postulating that such behaviour was a sign of underlying psychopathology and emotional development problems. He also related infantile digit sucking to the need to derive pleasure.

According to him, the oral zone is an erogenous zone that requires constant stimulation and theorized that infants have an urge to suck in order to feel safe. He further proposed that, if the sucking needs of the infant were not met during the oral phase of development, the sucking habit would extend into the next developmental phase. Psychoanalysts have defined this as the fixation of a habit. This is in contrast to the term regression, as seen in the above case which defines the redevelopment of a previous habit as the result of psychological stress, such as working parents, sibling rivalry, parental divorce and single parent. It has been shown in the literature that children develop sucking habits as a way to reduce psychological pain and improve in falling asleep by isolating themselves from the surroundings. Digit sucking could stimulate solitary confinement because repetitive and boring stimuli of oral sensations could reduce sensory neurons in the throat. These receptors stop firing, and, as a result, the brain cortex is deprived of standard sensory input. This deprivation leads (in turn) to the disorder of perception, mental performance, and muscular motor control.[7]

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Prolonged digit sucking habit will cause many harmful effects on the child. A child could develop speech issues, as well as mispronouncing Ts and Ds, lisping, and thrusting out the tongue while talking.[8] Usually, in cases with anterior open bite it is because of digit sucking, a secondary tongue thrust develops resulting in the exaggeration of the condition as seen in this case also.[2] Any treatment of oral habit must take into accountthe child's development, comprehension, and skill to collaborate. Thumb sucking habit treatment modalities includebehaviour modification strategies, myofunctional treatment, appliance therapy etc. The use of an appliance to manage oral habits is indicated only if the child desires to prevent the habit.[3]

The child was in the preoperational period according to Jean Piaget's cognitive theory. The child of this age group belongs to the second stage of moral development, at this stage, the child begins to represent the world symbolically. The instructions given by us initially proved to be too rigid for the child & the appliance cemented to stop the habit was considered as a punishment. The patient changes his ego state from adult to child (regression) either temporarily or for a long term after the placement of the appliance. The patient in this state goes through lots of emotional changes, whereas the dentist communicates in an adult ego state, trying to find solutions to the problem. This results in a destructive crossed transaction where both the parties start making their own judgments and decisions.[4]

In the first two weeks, while counselling, the parents were instructed to let the child sit in front of a mirror and continue his thumb-sucking habit observing himself as he was indulging in the habit (Dunlop beta hypothesis). After that reminder therapy was introduced this included chemical means such as femite. When the femite was not successful, appliance therapy was introduced as a reminder appliance. After 3 weeks the child showed reluctance to wear the appliance which resultedhim in breaking of the appliance. He was asked to continue the habit and even increase the frequency of thumb sucking (symptom prescription). Symptom prescription involves an explicit directive by the therapist encouraging the children to maintain their problematic behavior or symptom. At times the child may be requested to exaggerate the symptom (reverse psychology).[9] Reframing helps in knowing the ego state of the child, modifying it by changing the thought process, associations, and making him/her communicate with proper ego states. Thus, the change in the approach can bring about a change in the mind and attitude of the patient, in turn changing their health behavior and quality of life. The patient began associating the thumb-sucking habit with dental

disfigurement due to which he was able to stop the habit easily in a month. The positive reinforcements too encouraged him to discontinue the habit.

Conclusion:

Good understanding of child psychology along with the knowledge of behaviour management techniques by the clinician plays a very important role in the success of the dental treatment. Throughout treatment, it should be clear to the patient, parents, or guardian that, for the successful cessation of the digit sucking habit, it is not enough to use biomechanical orthodontic resources; the patient should also show the willingness to stop the habit.[10] With the success of the dental treatment it will not only change the negative attitude of the child towards the dental treatment but at the same time will instill a positive dental attitude in the child for the future.

Declaration of conflicting interests:

The Authors declares that there is no conflict of interest.

Funding:

The authors received no financial support for the research, authorship, and/or publication of this article.

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