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Different Treatment Modalities Of Thumb Sucking Habit- A Case Series

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Abstract

Statement of problem: Oral habits beyond the age of 5 years have a serious implication on the developing dentition. Thumb sucking happens to be one of the most common and often neglected oral habits. Children are not treated at the right time for thumb sucking causing a myriad of other complexities such as malocclusion in later stages of life.

Materials and method: In this Case series three patients of age 7 years having thumb sucking habits were treated using different treatment modalities. The treatments included Dunlop's Beta Hypothesis, a removable appliance, and a fixed appliance**.**

Results: in the following case series, fixed appliance showed the maximum benefit while Dunlop's Beta Hypothesis showed the least.

Conclusion: Based on the child's psychology, social behavior, and economic status, one could come to a conclusion regarding the treatment modality to be used. In the current series, fixed appliance showed the best results

Keywords: Thumb Sucking, Spikes, Thumb Guard, Dunlop's Hypothesis.

Introduction

Habit is defined as a fixed practice produced by a constant repetition of an act. These repetitive behaviors are common in the infantile period, and these a initiated and terminated spontaneously. One of the most common repetitive behaviors in the infantile period is digit sucking.(1) It is characterized by the placement of one or more digits to varying depths in the mouth. This habit is considered to be normal up to the age of 3-4 years. The prevalence of digit sucking habit as reported in the dental literature varied among

different investigators from 1.7% to 47% in children.(2)

The habit may develop early in life and continue from infancy through primary, mixed and permanent dentition. If the habit continues into the mixed dentition, a malocclusion may develop. The adverse effect of digit-sucking habit can be seen in the form of proclined and flared maxillary and/or mandibular incisors, development of anterior open bite, and Class II malocclusion. The term digit sucking is synonymous with finger sucking or thumb sucking. It is defined as the placement of the thumb or one or more fingers in various depths into the mouth.(3)

Thumb sucking is of 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. 2. Passive: In this type, the child puts his/her finger in mouth, but because there is no force on teeth and mandible and hence this habit is not associated with skeletal changes.(4)

Treatment modalities for thumb sucking broadly fall into the following categories:

• Counselling

• Reminder therapy

• Reward system

• Adjunctive therapy

This paper describes the clinical case series of 7-year-old children whose thumb-sucking habit was treated using three different modalities. The three treatment modalities included: 1. Dunlop's beta hypothesis 2. A removal appliance- thumb guard 3. Fixed thumb spikes.

Case 1:

A 7 year-old girl accompanied by her mother reported to the Department of Pedodontics and Preventive Dentistry, Bharati Vidyapeeth Dental College and Hospital, with a chief complaint of thumb sucking habit since the child was 6 months old. The child has been reported to continue the habit of thumb sucking whenever she was idle during the daytime. On examination, the child was in primary dentition stage and was free of any carious lesion and no skeletal abnormality was detected because of the habit. On extra oral examination, right hand thumb finger showed callous formation. As the child was very young and did not have any detrimental effects on the oral cavity, the treatment decided was to counsel the patient. Dunlop's beta hypothesis was used and the patient was asked to sit in front of the mirror every day and see herself sucking the thumb. (Figure A) However, even after doing that the patients habit had not ceased completely. Thus after 2 months, the patient was shifted to fixed therapy

Case 2:

A 7 year-old girl accompanied by her mother reported to the Department of Pedodontics and Preventive Dentistry, Bharati Vidyapeeth Dental College and Hospital, with a chief complaint of thumb sucking habit since the child was 2years of age. The child has been reported to continue the habit of thumb sucking whenever she was idle during the daytime. On examination, the child was in primary dentition stage and was free of any carious lesion and no skeletal abnormality was detected because of the habit. On extra oral examination, right hand thumb finger showed callous formation. All psychological therapies had been tried and failed. Thus a thumb guard with spikes (Figure B) was deiced to give as a removable reminder therapy.(5) After regular follow up it was observed that, when the child was wearing the guard she did not suck her thumb, however on its removal for some work, she would begin to suck the thumb immediately. After about 6 months, the habit finally ceased.

Case 3:

A 7 year-old boy accompanied by his grandmother reported to the Department of Pedodontics and Preventive Dentistry, Bharati Vidyapeeth Dental College and Hospital, with a chief complaint of thumb sucking habit since the child was 2years of age. The child has been reported to continue the habit of thumb sucking whenever he was idle during the daytime. On examination, the child was in mixed dentition

stage and was free of any carious lesion and no skeletal abnormality was detected because of the habit. Slight flaring of permanent maxillary incisors was seen. On extra oral examination, right hand thumb finger showed dishpan appearance. All the other methods of habit cessation attempted had failed in this patient. All the other methods of habit cessation attempted had failed in this patient. Thus, a fixed thumb spikes appliance was decided (Figure A). (3). After regular follow-ups it was observed that the thumb sucking habit ceased within 2 months time.

Discussion

Any treatment of oral habits needs to consider the child's development, comprehension, and ability to cooperate. Thumb sucking habit treatment modalities include counseling of patient/parent, behavior modification methods, myofunctional treatment, appliance therapy, or referral to other providers including, but not limited to, orthodontists, myofunctional therapists, psychologists, or otolaryngologists. Use of an appliance to manage oral habits is indicated only when the child wants to stop the habit and would benefit from a reminder.(6)

In the following case series, three different modalities of thumb sucking treatment were used.

In case 1, Dunlop's beta hypothesis was used. Dunlop beta hypothesis, a technique used in treatment of thumb sucking, is probably based on this concept. Each child is made to sit in front of a mirror and asked to suck his thumb, observing him as he indulges in the habit. If he can be forced to concentrate on the performance of the act at the time the child practices it, he can learn to stop performing the act. Children were asked to repeat the same in their home for an hour every day for one week and to report for re-assessment. Forced purposeful repetition of a habit eventually associates it with unpleasant reactions and the habit is abandoned. However, in the following case, even after repeated and regular follow-up, the habit had not ceased completely. The reason could be the pleasure the child derived from it.(7)

In Case 2, the thumb guard with spikes was used as a reminder therapy.It is one of the most effective methods. Howeverit's a slow process. According to the case mentioned, it took around 6 months for the child to drop the habit completely. Another observation was that, whenever the child was wearing the thumb guard, there was no thumb-sucking, however, once the child removed the guard for whatever reason, the habit returned. This appliance requires good patient co-operation. It also requires thorough monitoring by the parents and regular follow-ups.Failure of any of the above steps will lead to the failure of the treatment.(5)

In Case 3, a fixed appliance was used. The upper first permanent molars were banded and spikes were fabricated at the exact site of placement of thumb. Good compliance and motivation is essential for interceptive orthodontic treatment. He was informed that if she stopped the thumb-sucking, malocclusions could possibly be avoided. She was informed that the appliance was placed as a reminder and not as a punishment. The habit ceased within four weeks. It was observed that evenpost removal of the appliance, the habit did not return.(3)

The use of digit or thumb sucking, is common in babies and young children are generally comforting behaviour but they tend to stop as children get older. However, if the habit continues especially when the permanent dentition is becoming established, it can contribute to, or cause, the development of a malocclusion. A diverse variety of approaches include advice, removal of the comforting object, fitting an orthodontic appliance to interfere with the habit, or behavior modification techniques. Thus some of these interventions are easier to apply than others and less disturbing for the child and their parents.(8)

Conclusion

Considering the limitations, from the above case series we can come to a conclusion that fixed appliance had a faster and better result, followed by the removal appliance. The psychological intervention had almost no effect on the habit.

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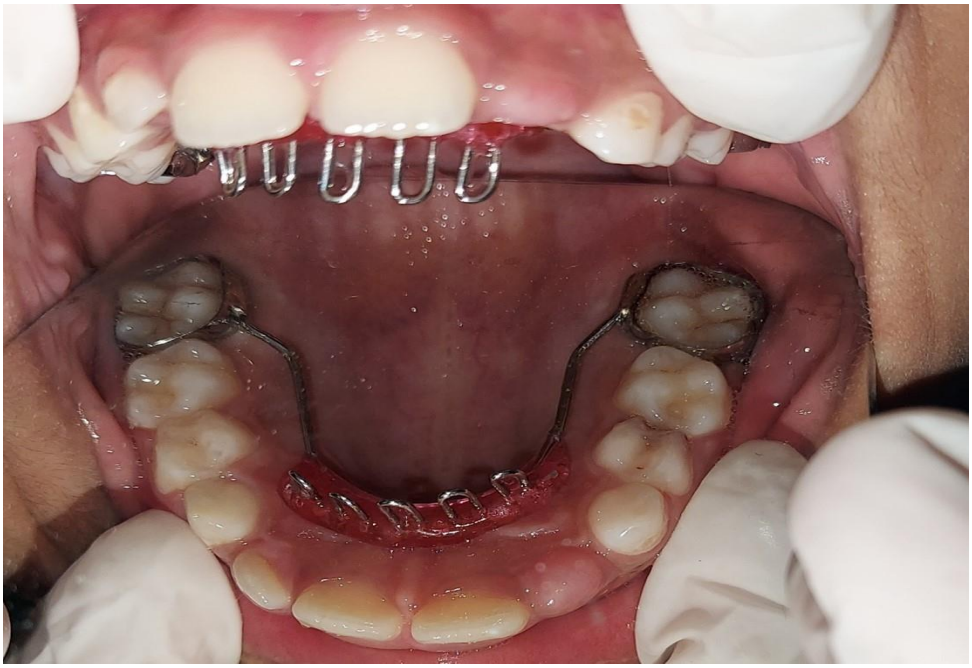
DUNLOPS HYPOTHEIS

THUMB GUARD



THUMB SUCKING