

FROM COMFORT TO CONSEQUENCE: MANAGING CHRONIC THUMB SUCKING THROUGH PUNITIVE MEASURE IN A 12-YEAR-OLD GIRLNida Naim^{1*}, Chaitra T. R.² and Seema Chaudhary³, Naveen Manuja⁴, Ashish Amit Sinha⁵ and Geetika Dixit⁶¹Post Graduate Student Department of Pediatric and Preventive Dentistry Kothiwal Dental College & Research Centre Moradabad, Uttar Pradesh.^{2,4,5}Professor Department of Pediatric and Preventive Dentistry Kothiwal Dental College & Research Centre Moradabad, Uttar Pradesh.³Professor & Head Department of Pediatric and Preventive Dentistry Kothiwal Dental College & Research Centre Moradabad, Uttar Pradesh.⁶Post Graduate Student Department of Pediatric and Preventive Dentistry Kothiwal Dental College & Research Centre Moradabad, Uttar Pradesh.***Corresponding Author: Dr. Nida Naim**

Post Graduate Student Department of Pediatric and Preventive Dentistry Kothiwal Dental College & Research Centre Moradabad, Uttar Pradesh.

Article Received on 03/04/2025

Article Revised on 23/04/2025

Article Accepted on 13/05/2025

ABSTRACT

There are various oral habits present in a child and digit sucking is the most common oral habit and also the most common learned patterns of behaviours seen in children of preschool age. At 2.5 – 3 years of age, the child outgrows this habit but if he/she continues the habit, it may be harmful because of ridicule, shunning, and peer pressure. The habit and malocclusion can be corrected, with early detection and the right intervention. This case report presents a case of thumb sucking habit in a 12 year old girl where the habit was corrected using a fixed modified palatal crib appliance.

KEYWORD:- Habit, Malocclusion, Digit sucking, Palatal crib appliance.**INTRODUCTION**

A fixed practice created by repeatedly performing an action is called a habit.^[1] Oral habits are common in children and include non-nutritive sucking habits (thumb/finger/pacifier), tongue-thrusting, tongue sucking, lip or nail biting habits & bruxism.

According to Sigmund Freud's theory, digit sucking is associated with the oral stage of a child's development. Fixation of the habit results if gratification is incomplete and sucking persists after the oral stage. Digit sucking later on is typically regarded as an indication of regression. Regression and fixation are both indicators of emotional instability.^[2]

Thumb sucking is defined as the placement of the thumb or one or more fingers in various depths into the mouth. It is commonly seen in infants and peaks at 18- 21 months of age. The habit is normal in the first 2-3 years of life.^[3] If the habit continues into the mixed dentition stage, various dentoalveolar changes can develop depending upon intensity, duration and frequency like proclined maxillary and mandibular incisors, increased overjet, crossbite, anterior open bite, class II malocclusion.^[4]

This case report presents a case of thumb sucking habit in a 12 year old girl where the habit was corrected using a fixed *modified Palatal Crib Appliance*.

CASE REPORT

A 12-year-old girl accompanied by her mother reported to the Department of Pediatric and Preventive Dentistry of our institute with a chief complaint of Thumb sucking. Patient's mother reported that her daughter sucks her thumb and she does it while studying and sleeping.

Intra-oral examination revealed that the patient was in permanent dentition phase, there was class I molar relation and increased overjet (*Fig.1*).



Fig. 1: Intraoral preoperative photograph – increased overjet.

Extra-oral examination revealed convex facial profile and the thumb which she used to suck was flattened (Fig.2).



Fig. 2: Flattened thumb.

All the other methods of habit cessation like shaming the child, applying neem juice, chilli etc. were attempted by the mother but failed to stop the habit. Therefore, a punitive reminder therapy was planned using a *modified Palatal crib appliance*.

Molar band fabrication was done in relation to 16 and 26 (Fig. 3). Alginate impressions were made for upper and lower arches and casts were poured with dental stone.



Fig. 3: Molar bands irt 16 & 26.

The crib was fabricated on the maxillary cast using a 0.9 mm stainless steel wire. The ends of the wire were then soldered to the corresponding molar bands (Fig.4).



Fig. 4: Anti-thumb sucking appliance.

Short spikes were made (Fig.5) to poke the thumb and punish the patient each time she try to suck her thumb—*punitive reinforcement*. In the next appointment, appliance cementation was done using type I glass ionomer cement (Fig.6).

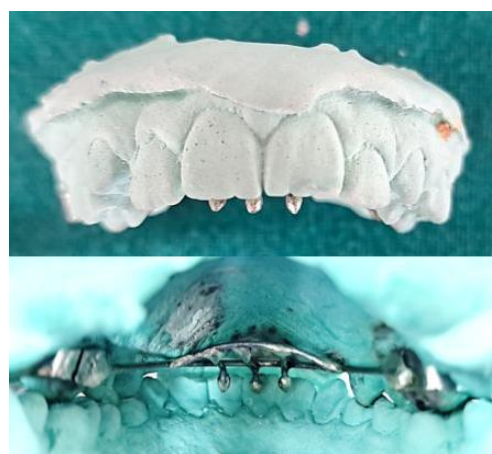


Fig. 5: Appliance spikes – front & back view.



Fig. 6: Post-operative photograph – Anti thumb sucking appliance cemented.

The parents reported that the girl had stopped the habit after three weeks. But the patient was advised to continue the appliance for another three months to avoid the relapse of the thumb sucking habit. After three months, the appliance was removed as there was no sucking episode reported by the patient's mother.

DISCUSSION

It is believed that the thumb sucking habit is done for psychological comfort and oral gratification.^[5] Jajoo *et al.* found that the prevalence of sucking habits in India

was between the ages of 5 and 7 years. They attributed this to a lack of love and care, which was explained by two theories: the psychosexual development theory (psychoanalytic theory) and the adaptive behaviour theory.^[6] The habit may intensify if the child is criticised, nagged or threatened. The parent should therefore be patient and empathetic.

According to the *American Dental Association and the American Academy of Pediatric Dentistry*, thumb sucking till 6 years of age cause little or no damage to the orofacial structure but after 6 years chronic thumb sucking may begin to do damage and therefore should be addressed.^[7,8]

There are various techniques for habit intervention like positive reinforcement, a calendar with rewards, an adhesive bandage, application of bitter nail polish, long sleeves and appliance therapy. In the present case all the local measures have been tried by the parents themselves but they failed to stop the habit, therefore; appliance therapy was given to the girl as she wanted to get rid of the habit but was unable to do so.

Numerous dental appliances have been used to treat the thumb-sucking habit which include: the sharp rake, the blunt rake, lingual spurs, the vertical crib, the palatal bar, the horizontal crib, the Graber appliance and the blue grass appliance. Some of these appliances have been described as cruel and inhumane.^[9] Non-punitive appliances were also successful in cessation of the habit as *Greenleaf* and *Mink* conducted a retrospective study on 30 subjects for the use of the Bluegrass appliance in the elimination of thumb habit, and the results showed that in 93% of the patients, the thumb sucking habit was ceased after treatment with this appliance.^[10]

There are various extra-oral approaches for breaking the habit. Extra-oral devices such as thumb guards, RURS elbow guards, and "three-alarm system: revisited" are intended to be worn on the finger or elbow to remind children not to suck their thumbs or fingers.^[11] To stop thumb/finger sucking, *Krishnappa et al.* developed an electronic habit reminder in the form of an aesthetically pleasing wristwatch which was effective in breaking the habit and also it was easily accepted by the child with no complications reported.^[12]

According to *Dean*, fixed palatal crib is commonly used and recommended for treating thumb/finger sucking habit. 80% of children treated with fixed palatal cribs were said to have stopped the habit within a week of the device being inserted, but they also stated that retention was required for at least six months.^[13]

In this paper we presented a case of successful management of thumb sucking habit by giving a punitive appliance to the patient.

CONCLUSION

The treatment approach of a child with thumb sucking is based on their willingness and severity of the act. The choice of treatment plan must be carefully done keeping in mind the psychological aspect of the child.

The role of a pedodontist is to look for early intervention as it can prevent the chances of malocclusion due to the habit, at later stage. The pediatric dentist should also encourage the child and explain what could happen to his/her teeth if he/she does not stop the habit. In our case modified palatal crib appliance was successful in eliminating thumb sucking habit without any complications.

REFERENCES

1. Allen KR. Oral habits. *Pediatr Dig*, 1964; 6: 75-88.
2. Johnson ED, Larson BE. Thumb- sucking: Literature review. *ASDC J Dent Child*, 1993; 60: 385-91.
3. Graber TM. Thumb and finger sucking. *Am J Orthod*, 1945; 45: 258.
4. Shwetha G, Shetty AK, Chandra P, Anandakrishna L. Bluegrass appliance for thumb sucking habit. A case report.
5. *Int J Med Dent Case Rep*, 2014; Article Id 251114: 1-3.
6. Cozza P, Baccetti T, Franchi L, Mucedero M, Polimeni A. "Transverse features of subjects with sucking habits and facial hyper divergency in the mixed dentition. *Am J Orthod Dentofacial Orthop*, 2007; 132(2): 226-9.
7. Jajoo S, Chunawala Y, Bijle MN, Shah R, Kamble A, Gaonkar NK. Oral habits in school going children of Pune: a prevalence study', *Journal of International Oral Health*, 2015; 7(10): 96-101.
8. Guidelines on management of the developing dentition and occlusion in pediatric dentistry. Clinical practice guidelines. AAPD, 2014.
9. Warren JJ, Bishara SE. Duration of nutritive and non-nutritive sucking behaviors and their effects on the dental arches in the primary dentition. *Am J Orthod Dentofacial Orthop*, 2002; 121(4): 347-56.
10. Stricker JM, Miltenberger RG, Garlinghouse MA, Deaver CM, Anderson CA. Evaluation of an awareness enhancement device for the treatment of thumb sucking in children. *J Appl Behav Anal*, 2001; 34(1): 77-80.
11. Greenleaf S, Mink J. A retrospective study of the use of the Bluegrass appliance in the cessation of thumb habits. *Pediatr Dent*, 2003; 25: 587-590.
12. Nikhil Marwah. Textbook of pediatric dentistry. New Delhi, India: Jaypee Brothers Medical Publishers (P) Ltd, 2019.
13. Krishnappa S, Rani M, Aariz S. New electronic habit reminder for the management of thumb-sucking habit. *J Indian Soc Pedodontics Preventive Dentistr*, 2016; 34(3): 294.
14. Dean JA. Managing the developing occlusion. *McDonald and Avery's Dentistry for the Child and Adolescent*, 2016; 415-78.