Case Report

Management of Thumb-Sucking by Modified Thumb-Home Concept

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Abstract

Thumb-sucking habit is not normal beyond 4 years of age. Before the development of malocclusion, it should be treated considering the psychological needs and other factors. Younger children can be best treated with a thumb guard based on the thumb-home concept. In this case report, a 4-year-old child is managed by thumb guard based on modified thumb-home concept.

Keywords: Dishpan thumb, thumb-home concept, thumb/digit-sucking

Introduction

Thumb-sucking/digit-sucking is the most common nonnutritive sucking habit with a prevalence of 13%–100%. It gradually decreased till 3–4 years of age.[1] If it persists after 4 years, then it is a major concern. The major hypothesis behind thumb-sucking is that it is a learned habit that is essentially unrelated to the emotional adjustment of the child.[2] Thumb sucking may be due to physical stimulation, hunger, hyperactivity pleasure, emotional stimulus like boredom ,stress which increases the anxiety level and may lead to a continuation of such habits.[3] The prolonged and chronic habit of thumb-sucking may lead to malocclusion in primary as well as mixed dentition.[4] Prolonged and constant thumb-sucking may lead to open bite, associated tongue thrusting, proclined upper incisors, retroclined lower incisor, and muscular imbalance.[5] Correct diagnosis and treatment before the development of malocclusion should be done. There are various treatments available, out of which thumb-home concept based on animism is the recent one where a child is asked to place his/her thumb in a bag tying on the wrist and explained that like a child, the thumb will also go to sleep in his home.

Case Report

A 4-year-old girl accompanied by her mother reported to the department with the chief complaint of a left thumb scar. The patient's mother reported active thumb-sucking during sleep or when the patient is not playing. There was no medical history associated.

On extraoral examination, the left thumb was chapped and exceptionally clean, i.e., a classic clean dishpan thumb deformity. The left fingernail was short. Roughened callus was present on the superior aspect of the thumb [Figure 1]. Lips were potentially competent both at rest and during swallowing [Figure 2]. The patient had an apparently symmetrical face with a straight profile and mesomorphic facial pattern.

Intraoral examination revealed normal size, shape, and position of the tongue. Mesial step molar relation was present and interdental and primate spaces were present. The child was self-motivated to stop the habit and recalled after 1 week. After 1 week, the patient's mother reported that the child is still sucking the thumb. They also tried topical chemical management but failed to stop the habit. Hence, the thumb guard was advised to wear.

In the same visit, a thumb impression was obtained with vinyl polysiloxane putty impression material [Figure 3] and a cast was obtained [Figure 4]. On the cast, self-cure acrylic was used

Submitted: 23-Jan-2022 **Revised:** 21-Mar-2022
Accepted: 27-Mar-2022 **Published:** 06-May-2022

Access this article online

Quick Response Code:

Website: www.ijpedor.org

DOI: 10.4103/ijpr.ijpr_1_22

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How to cite this article: Samal S, Baliarsingh RR, Ray P. Management of thumb-sucking by modified thumb-home concept. Int J Pedod Rehabil 2021;6:72-4.

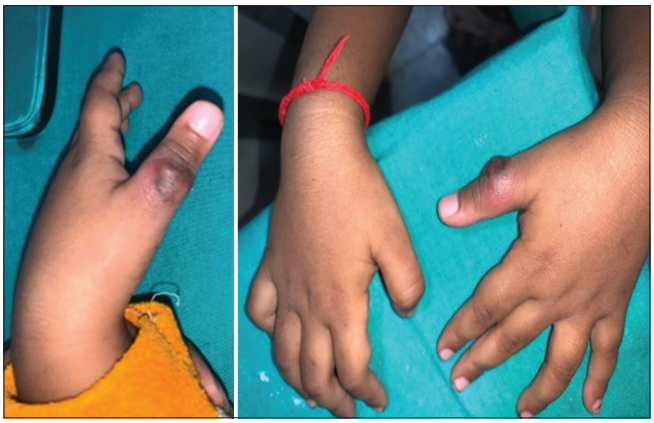

Figure 1: Callus formation/dishpan thumb.

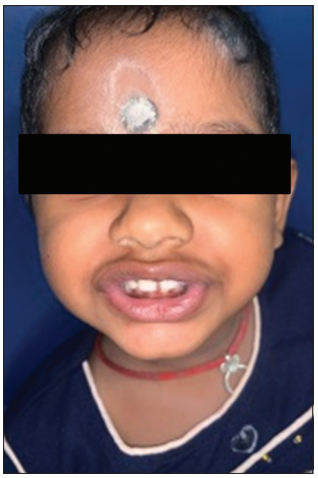

Figure 2: Clinical picture.

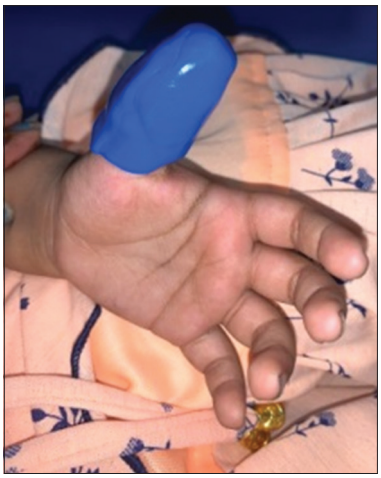

Figure 3: Impression by polysiloxane putty impression material.

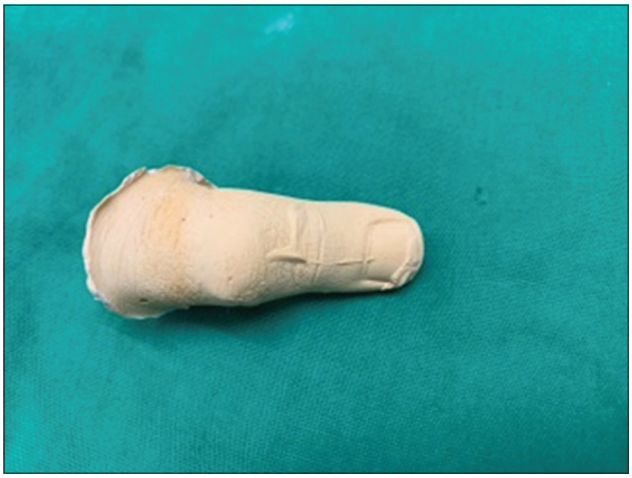

Figure 4: Stone cast.

Figure 5: Thumb guard.

Figure 6: Thumb guard placed in the thumb.

to fabricate an acrylic thumb guard [Figure 5]. The patient was instructed to wear the guard during sleep by explaining the thumb-home concept [Figure 6]. The patient was followed up regularly after 3 months and 6 months [Figures 7 and 8]. There was a significant reduction in thumb-sucking. The patient's mother reported that the child has left the habit.

Discussion

Children with the digit-sucking habit were managed by operant conditioning by positively and negatively reinforced, regular counseling, regular reminders, thumb-home concept, wearing

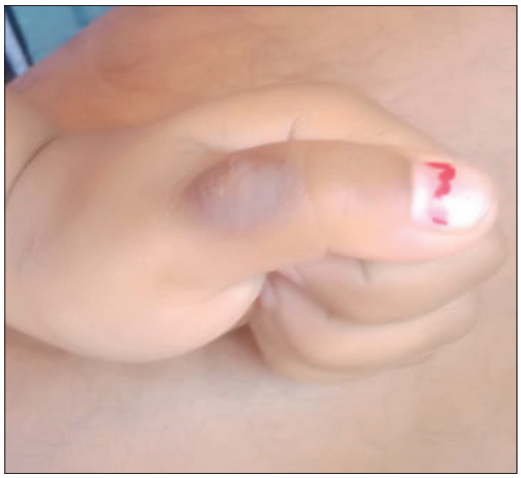

Figure 7: Follow-up after 3 months.

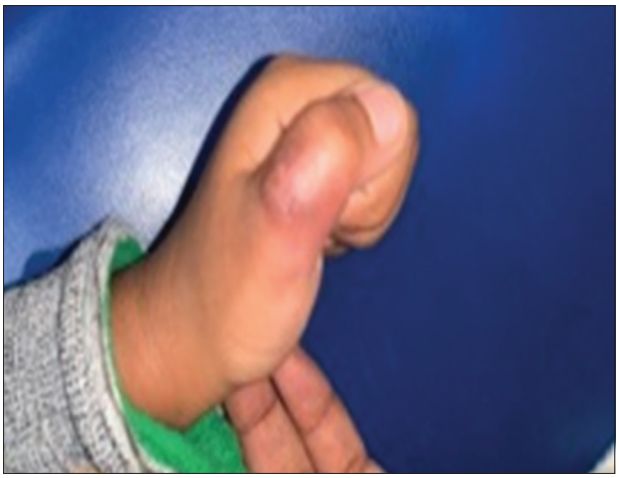

Figure 8: Follow-up after 6 months.

long sleeves, RURS elbow guard, etc.[6] Various treatment modalities are available like chemical therapy, bitter and sour solution like quinine, asafetida, pepper, castor oil, etc., usually has a limited effect.[2] New anti-thumb-sucking solutions like femite lotion and thum are also being marketed but they also showed moderate success. In our case also, the mother tried this treatment, but she failed to stop the habit despite encouragement and motivation. The intraoral appliance was not given because there was no associated malocclusion and the patient was younger. The application of adhesive tape carries the risk of reducing blood circulation and is reported to cause infection or sweating.[7] The use of fixed habit-breaking appliances might result in decalcification of enamel, thus increasing the susceptibility to dental caries and gingival inflammation as well. The success of treatment by removable appliances depends on the patient's cooperation. It also affects speech and pronunciation,[8] and thumb guard based on the modified thumb-home concept was given. Thumb home is the most recent concept where a child is explained to wear a cloth bag in his/her hand and the thumb is placed inside the bag. It is explained to the patient that like a child, the thumb will also go to sleep in his home. In our case, thumb guard was considered the home for the thumb so the child was able to stop the habit (pls remove the marked one).

Conclusion

Oral habits adversely affect the dentoalveolar system, more attention to control and prevent them is required, so the duty of pediatric dentists is not only tooth repair and modification of dentoalveolar changes, but also he has to have enough knowledge about prevention, behavior management, and treatment of disorders caused by oral habits. Parents should be taught regarding the side effects of chronic habits on dental and psychological aspects so that appropriate treatment should be provided before the malocclusion has occurred.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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