



Cutaneous Hyperkeratosis on Thumb Caused by Digital Sucking in a Child: Case Report

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Abstract

Digital sucking is classified as a deleterious habit of non-nutritive sucking. It presents itself as a non-isolated symptom resulting from conflicts or emotional instability, becoming a personal pattern of self-satisfaction. Its action can be defined by negative pressure with relatively intense force that can culminate in damage to the teeth and stomatognathic system, such as tooth malposition, maxillary atresia, malocclusion, ogived palate, reduction of nasal cavity resulting in mouth breathing, and subsequently carious lesions and periodontal diseases already in childhood. The severity of these alterations is directly related to the duration, frequency and intensity of the habit. The purpose of this article is to present a case of a 6-year-old child with the habit of digital sucking causing cutaneous hyperkeratosis on the ventral surface of the left thumb phalanx. Mouth habit deleterious, digital sucking and therapeutic conducts for the elimination of the habit were discussed.

Keywords: Habits; Finger Sucking; Malocclusion; Pediatric Dentistry; Open Bite

Introduction

Habit is a formation acquired by the repetition of an act, for a certain purpose, which becomes unconscious and becomes included in our personality and over time resistant to change [1]. However, habit becomes an addiction when it impairs the growth and development process of the human organism [2].

The mouth is the most important region of the body in the child's first year of life and nutritional sucking is important for the survival of the newborn, since it instinctively leads him/her to the satisfaction of his/her nutritional needs. Suction is an innate reflex, observed even before birth, in the 29th week of intrauterine life, representing the most primitive and complex behavioral pattern of the human being [3,4].

Throughout life, facial growth is developed through various habits such as chewing, swallowing, speaking and breathing. These functions must be normal for the growth of the dental arches and for craniofacial and myofunctional growth to assume correct structure [5,6].

When it relates to the oral cavity, it can bring about several alterations, both in the soft (tegumentary, muscular, cartilaginous, and mucous) and hard tissues (dental, bone), and even malocclusion. In the infant stage, the habit is installed because it is pleasant and provides satisfaction to the child. When the child develops the deleterious oral habit until the age of three, it may have a self-correction of some possible oral alteration acquired with the habit [7-9]. After 7 years of age, if the habit persists and is not left spontaneously, it should be evaluated and professional intervention should be made for its removal [9].

Digital sucking is classified as a non-nutritive sucking habit. Its action can be defined by negative pressure with relatively intense force that can culminate in damage to the teeth and stomatognathic system, such as tooth malposition, maxillary atresia, malocclusion, ogived palate, reduced nasal cavity with subsequent mouth breathing. This, in turn, may favor the development of carious lesions and periodontal diseases, already in childhood [5,8,9]. The constant presence of the finger between the upper and lower teeth prevents the correct vertical development of the anterior teeth and alveolar processes in this particular region, causing, in many cases, open bite [9,10]. Additionally, speech difficulties, changes in muscle balance, and psychological problems are also reported [5].

From a psychological perspective, the habit of digital sucking may be a non-isolated symptom arising from conflict or emotional instability, making a personal pattern of self-satisfaction [9].

Purpose of the Study

The purpose of this article is to present a case of a 6-year-old child with the habit of digital sucking causing cutaneous hyperkeratosis on the ventral surface of the left thumb phalanx. Mouth habit deleterious, digital sucking and therapeutic conducts for the elimination of the habit were discussed.

Case Report

A Caucasian male patient, 6 years-old, attended the clinic for dental triage accompanied by his mother.

During the anamnesis, the patient’s introspection and parafunctional habit of sucking his left thumb were observed (Figure 1).

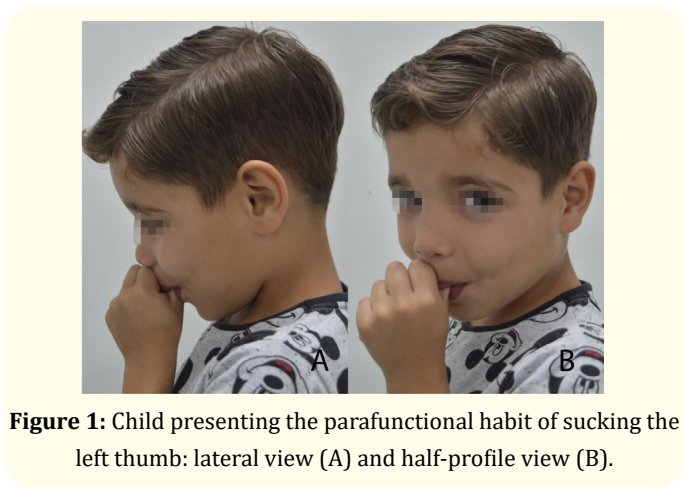


Figure 1: Child presenting the parafunctional habit of sucking the left thumb: lateral view (A) and half-profile view (B).

When questioning the mother about the psychological aspect of the child, she reported a parafunctional habit for at least 3 years. Simultaneously, the mother presented the formation of a callus, consistent with the time of thumb sucking. Clinically, it was observed the formation of a lesion with a slightly elevated aspect, of normal coloration, with approximately 6mm in diameter on the ventral surface of the left thumb, over the phalanx (Figure 2).

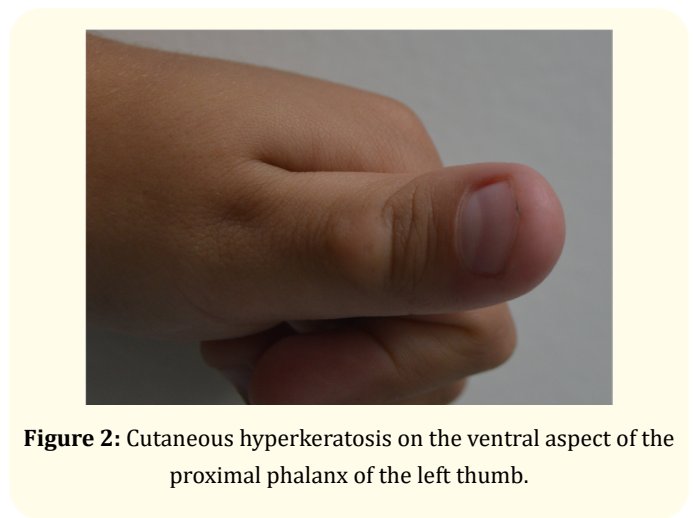


Figure 2: Cutaneous hyperkeratosis on the ventral aspect of the proximal phalanx of the left thumb.

The mother was reassured by informing her that the lesion is an increase in the keratin layer in the region where the incisal edges of the mandibular anterior teeth are touched and rubbed. However, the mother was instructed to encourage the child to give up the habit. If there is persistence, she should be referred to psychological treatment. Additionally, the mother was also instructed that if there was any change in the color or texture of the skin or presence of wounds, she should seek the advice of a dermatologist.

Discussion

The most frequent non-nutritive habit found in children is digital sucking, next to pacifier sucking, and it is prevalent in the first years of a child’s life. These two habits are among the greatest risk factors for the development of malocclusions. However, the presence of the habit is not determinant for dental malocclusion, depending on the frequency, duration and intensity of sucking of each child [3]. The interruption of the sucking habit still during the deciduous dentition phase can favor the self-correction of morphological deviations of occlusion that may have developed early [11].

There are also other triggering factors of habits such as thumb or pacifier, such as the social context through family conflicts, school pressure, mother’s absence due to employment reasons, in addition to the difficulty of access to dental services, some respiratory diseases and speech problems, irritations associated with dental eruption, occlusal interferences, among others [9,12,13].

Another possible hypothesis refers to the physiological need of the child that is not breastfed, presenting a greater tendency for digital sucking, as a form of exercising the muscles. Maternal feeding causes fatigue and muscle tiredness in the child due to the effort it needs to make to suck. Afterwards, the child becomes drowsy, and is often asleep when breastfeeding ends. The nipple hole of baby bottles is usually large and the milk is swallowed very quickly and does not require the strength of the sucking muscles [6,9].

Preferably and as observed in the present case, the finger chosen is the thumb, but the other fingers are also associated. This type of sucking generates a pleasurable and satisfying sensation in the child [7].

From a psychological perspective, part of the responsibility for the emergence of vicious or deleterious oral habits stems from the need to meet affective, emotional or neural sucking needs [9,12]. There are basically three theories to explain the etiology and prolongation of non-nutritive sucking habits [14]. These theories have been summarized in table 1. Cessation of the undesirable behavior has been recommended [9,14-16], as was suggested by us. The treatment is multiprofessional with speech therapist, otolaryngologist and orthodontist [17].

Another solution for the removal of the sucking habit is the use of a fixed intraoral appliance with palatal grid in cases of digital sucking, and the association of psychological follow-up [2,9,14].

Conclusion

The deleterious oral habits can cause numerous damages to the growth and development of the stomatognathic system. The severity of these alterations is directly related to the duration, frequency and intensity of the habit. Therefore, a multidisciplinary approach is necessary to be successful in removing these habits,

Theory	Features
of the Lost Function	Replacement of natural breastfeeding (mother’s breast) with artificial substitutes (bottle nipple, pacifier); Non-nutritive pleasurable sensation.
Psicanalytic	Non-nutritive sucking is normal in infants; Ceases at about two years of age; Reaction to tiredness, illness, frustration, boredom, deprivation, and punishment.
of Learning or Acquired Conduct	Simple learned behavior; Conscious process by satisfaction; Continuous repetition: process of improvement and automation.

Table 1: Theories of the etiologies of non-nutritive sucking habits [14].

since it is not only a mechanical and functional process, and the emotional implications for children and parents should be considered.

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