

MANAGEMENT OF THUMB SUCKING HABIT USING BLUE GRASS APPLIANCE: A CASE REPORT

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Abstract

Thumb sucking is one of the most commonly seen oral habits in children. The direct pressure exerted by thumb on the teeth and alveolus act as the major etiological factors in the development of dental malocclusion. Early detection and appropriate intervention can help in correcting the habit and preventing malocclusion.

This case report presents a case of thumb sucking habit in a 10 year old girl where intervention was done using Bluegrass appliance. This treatment option was found to be effective for the cessation of a thumb-sucking habit with limited treatment complications.

Key words: Blue Grass Appliance, Habit, Thumb Sucking.

Introduction

Habit is defined as a frequent or constant practice or acquired tendency which has been fixed by frequent repetition of an act.¹ Thumb sucking or non nutritive sucking has been described as a common childhood behavior or habit that is considered normal up to the age of 3-4 years.² It is characterized by the placement of thumb in varying depths in the mouth. Prevalence of thumb sucking habit was found to be 14% in 6 years old children, and 6% in children 11 years old.³

Numerous studies have reported thumb sucking as the most common oral habit.^{4,5} 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, various dentoalveolar changes can develop such as proclined maxillary and or mandibular incisors, development of anterior open bite, increased overjet unilateral crossbite and Class II malocclusion, depending upon duration, intensity and frequency.⁶

This article presents a case report of a child with thumb sucking habit.

Case Report



Figure 1: - Preoperative, anterior open bite due to thumb sucking habit

A 10 year old girl accompanied by her mother reported to our department of pedodontics and preventive dentistry with a chief complaint of thumb sucking habit. Girl's

mother revealed that her daughter sucks her thumb and she does it only while watching television. Intraoral examination revealed an open bite, spacing between upper central incisors and proclination of upper teeth. (Figure 1)

A nonpunitive reminder therapy was planned using customized bluegrass appliance. It was fabricated by adapting prefabricated bands on the permanent first molars on either side. An impression was taken, bands were transferred into it and cast was poured with dental stone. A 0.9mm stainless steel wire of appropriate length was bent at 90°. Three white colored beads were inserted onto the horizontal side and trapped by bending the wire beyond the beads at 90°. Its extensions were soldered with the molar band on either side. Enough space was kept between the beads and the palatal tissue. Appliance was delivered by luting the appliance with Glass ionomer cement on upper permanent first molars. (Figure 2)



Figure 2: - Intra-oral view of blue grass appliance cemented

To look it like a game, the patient was instructed to roll the beads with tongue whenever she feels like sucking her thumb. Mother reported cessation of habit within few weeks. But the patient was advised to continue with the appliance for another 8 weeks so that there is no reversal of the habit. After 8 weeks girl's mother confirmed that there have been no sucking episodes. On examination anterior open bite had got corrected, space between upper centrals had reduced and the appliance was removed. (Figure 3)



Figure 3: - Post-operative, Anterior open bite corrected

Discussion

According to The American Dental Association and the American Academy of Pediatrics thumb sucking until the age 6, usually does little or no damage to the orofacial structure.⁷ However, after age 6, chronic thumb/finger sucking may begin to do damage and should be addressed.⁸ Various researchers and clinicians have suggested the clinical management of oral habits to be of a multidisciplinary approach. The combined team includes, the family physician, who usually notices the initial damage, speech therapist, Psychologist for counselling of the child and parent, Pediatrician who can suggest the reward and reminder therapy for the breaking of the habit, various appliances, such as, Removable cribs appliance, Fixed cribs appliance, Palatal rakes, Blue grass appliance, Thumbguard can be given by the Pedodontist, fixed orthodontic therapy, in case of severe malocclusion can be corrected by the Orthodontist and finally Orofacial mycologists, who diagnoses and provides treatment for orofacial myofunctional disorders (OMDs) such as abnormal tongue patterns, open mouth rest posture of the lips, low forward rest posture of the tongue, and sucking habits.⁹

In 1991, Haskell and Mink constructed an oral appliance to eliminate thumb sucking in children with mixed or permanent dentition, utilizing the principles of positive reinforcement.¹⁰ It uses a hexagonal Teflon roller on a cross palatal wire. Korrodi Ritto and Leitao in 1998 introduced a similar appliance called lingual pearl for retaining the tongue.¹¹ Chris Baker in 2000 modified blue grass appliance utilizing 4mm beads which encouraged higher neuromuscular stimulation than Teflon roller.¹²

In this paper we present a case of successful management of thumb sucking habit by giving a non-punitive appliance to the patient given by Chris Baker which is less bulkier than conventional type. In a retrospective study of the Use of the Bluegrass Appliance in the Cessation of Thumb Habits out of 30 subjects included, the results showed that in 28 (93%) of the patients, the thumb habit was ceased after insertion of and complete treatment with this appliance.³

This appliance has various advantages from other reminder appliances such as instead of cribs or rakes it has smooth rolling beads that can encourage the child to play with the

beads rather than making the patient anxious. This appliance does not interfere with eating, presents minimum disturbance with speech, it is esthetic and comfortable for the child and the child can choose his favourite color beads.⁶

Conclusion

The pediatric dentist can offer encouragement to a child and explain what could happen to its teeth if it does not stop sucking. Instead of scolding, the child should always be praised for not sucking. In our case bluegrass appliance was successful in eliminating thumb sucking habit without any complications.

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