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### RESEARCH ARTICLE

#### A UNIQUE HABIT-BREAKING THERAPY: AN INNOVATIVE APPROACH (PKS APPROACH)

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#### **Abstract**

Digit/Finger sucking is a non-nutritive habit resulting in malocclusion. This habit is considered to be normal till the third decade of life. Both the parent and the child need to understand the etiology, nature, and manifestation of the habit. Along with the habit-breaking appliance, counseling also plays an important role in quitting the habit. This paper discloses, an innovative habit-breaking appliance which is chair-sided, less complicated than other habit-breaking appliance used.

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#### **Introduction:-**

Allen in 1964 defined Habit as a fixed practice produced by constant repetition of an act. Digit sucking habit is an oral habit that is commonly seen in children and it is recognized by the placement of the thumb or one or more fingers in varying depths in the mouth<sup>1</sup>. Digit sucking is common in 89% of infants in the second month and will increase by 1<sup>st</sup> year of life<sup>2</sup>. The prevalence of digit sucking habits varies from 1.7% to 47% in children according to different investigators<sup>3</sup>. The impact of active prolonged digit sucking in dentition are flared, and spaced maxillary anterior teeth, anterior open bite and also the likelihood of developing Class II division I malocclusion. Other effects, which can also arise from the habit in children, are deviation in root morphology, swallowing pattern, speech, and child psychology<sup>4,5</sup>.

Several treatments for correcting digit sucking have been implanted and documented in the literature. The most common treatments concentrate on the “reminder therapy” technique. Two methods that belong to the reminder therapy technique are response prevention therapy and appliance therapy. The former involves the application of bitter taste solution, thumb guard, mitten, wearing socks, boxing gloves, thumb splint, adhesive tape, and others to the digit involved in the habit. The appliance therapy method involves the use of orthodontic appliances either fixed or removable of various designs<sup>6</sup>. This case report discloses an approach of an easier, less time-consuming, less complicated, chair-side habit-breaking appliance (PKS approach).

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**Case Report**

A male patient of 7-year-old reported to the outpatient clinic of the Department of Pedodontics and Preventive Dentistry with a chief complaint of rotated upper front teeth. No relevant medical history. The patient had a history of little finger sucking habits [Fig.1]. On clinical examination, permanent teeth 11 and 21 were distopalatally rotated forming V-shape on the incisal edge which resembles the outer surface of the little finger [Fig.2a,b]. Alginate impression was taken and cast analysis was done.

Treatment was planned to break the habit and correct the rotated permanent teeth 11, and 21 simultaneously. To break the habit, an innovative method was initiated. The palatal surface of 11, and 21 were etched (37% orthophosphoric acid, *Ivoclar Vivadent*) for 15 secs [Fig.3a] followed by rinsing with water for 10 secs. Then the etched area was air-dried with a three-way air syringe for 3-5 secs. The bonding agent (Ortho solo, OrmcoEnlight) was applied and polymerised for 10-15 seconds [Fig.3b, c], followed by applying bonding material (OrmcoEnlight light Cure Adhesive) on the meshed surface of the premolar brackets. The premolar brackets were positioned on the middle third of the palatal surface of 11, and 21 with the hooks facing the incisal edge [Fig.4]. After 1 month, the fixed appliance was bonded on the labial surfaces of 12,11,21,22,16 and 26 [Fig.5]. Parent and patient counseling was done regarding the etiology, nature, and manifestation of the habit. After 4 and 6 months, 11,21 were aligned [Fig.6] the habit was quit, then the premolar brackets were removed [Fig.7a, b].

**Discussion:-**

All the habit-breaking techniques have disadvantages, in case of reminder therapy bandaging the elbow as sleep disturbance and nightmares, use of the tape or plaster on the digit would probably cause the digit to sweat and make it more prone to infections, gloves wrapped around the wrist poses the risk of decrease blood flow or can be removed easily by the child during sleep. Bitter gels have also been used, however with a constricted result and creating the likelihood of eye irritation, particularly in young children. While in appliance therapy, such as palatal bars, hay rakes, palatal cribs, spurs, and cage-type appliances are associated with difficulty in speech and eating, emotional disturbances, and iatrogenically self-inflicted wounds. Hay rake and cage-type appliances tend to get mutilated or destroyed while eating or due to habitual sucking habit<sup>7,8</sup>.

In this patient, we used an appliance therapy method for correcting digit sucking habits. Unlike other habit-breaking appliances, this is an easy chairside method that does not need any lab fabrication is less expensive, has minimum appointments and is easy to maintain oral hygiene, the main advantage of this technique is that the correction of habit and dental problems simultaneously. The main disadvantage of this technique is that the brackets can interfere with proper brushing in the lingual side of the incisors which can make the area more caries prone.

**Conclusion:-**

With the advantages in the technology, we the dentist should also upgrade our dental procedures. This is an innovative approach that is more feasible, less time-consuming, less complicated chair-side habit breaking appliance with a favorable result.

**Acknowledgement:-**

Primarily, I would like to thank our professor Prof. Prasanna Kumar Sahoo for proposing this innovative approach after whom this approach was named as PKS approach.

**Why this paper is important:**

1. Requires no reminding or bribing, and parents can be freed of anxiety and frustration.
2. Does not interfere with child's growth and correct the habit with limited complications.
3. Less time consuming, chair-side approach.

**Figures:**

Fig.1: Little finger sucking



Fig.2a: Frontal view



Fig.2b: Maxillary occlusal view



Fig.3a: Etching of 11,21

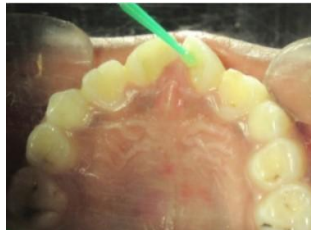


Fig.3b: Bonding agent applied

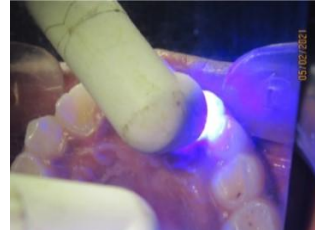


Fig.3c: Polymerised done



Fig.4: Premolar brackets bonded



Fig.5: Post-op 1 month, fixed appliance placed on 12,11,21,22



Fig.6: Post-op 4 months



Fig.7a,b: Post-op 6 months, premolar brackets are debonded.

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