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CORRECTION OF TONGUE THRUSTING HABIT –A CASE REPORT

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ABSTRACT

Anterior open bite, contributing cause of tongue thrusting and the management of such habits requires the removal of the underlying etiology, retraining exercises andorthodontic appliances. The most commonly used appliance for habit breaking especially tongue thrusting is by using palatal crib or palatal spurs.The persistence of such habits can affect the development of orofacial complex resulting in complex dental problems in adulthood.This clinical case report deals with the therapeutic management of tongue thrusting habit in an 8-year-old child. The interceptive modality employed was fixed palatal crib appliance for duration of five months.

Introduction

Tongue thrusting is an orofacial habit characterized by the abnormal habitual positioning of the tongue during deglutition, phonation, and at rest. This habit typically involves the anterior movement of the tongue, leading it to push against the teeth or protrude between them. Tongue thrustingmost commonly seen in the pediatric population. If uncorrected, it can persist into adolescence and adulthood affecting orofacial development.

Tulley[1]states tongue thrust as the forward movement of the tongue tip between the teeth to meet the lower lip during deglutition and in sounds of speech, so that the tongue becomes interdental.

Tongue thrust is an oral habit pattern due to the retention of an infantile swallow pattern during childhood and adolescence. This result in anterior open bite, incisor proclination, and increased overjet, often necessitate orthodontic intervention. The habit can also affect development of phonation, causing articulatory precision difficulties for certain sibilant phonemes, such as /s/ and /z/.Etiology is multifactorial, primarily associated with thumb sucking, prolonged pacifier use and nasal obstruction. Fletcher postulates that the main etiological determinant

includesgenetic or hereditary predisposition, conditioned behaviour (habit), infectious etiologies and aberrantfeeding modalities[1,2].

Early identification and intervention are significant in order to prevent long-term consequences on dental and speech articulation deficits. A comprehensive understanding of the nature of tongue thrusting and its effects is mandatory for clinicians to develop effective treatment protocols that address both the habit itself and the complications associated with it.

The following sequential phases are implemented for the therapeutic interventionsrequired for the cessation of habit [3]

1. Targeted counselling for the patient
2. Reminder therapy for the cessation of the habit
3. Reward based reinforcement therapy for encouragement
4. Orthodontic appliance therapy for the interception of the habit.

This clinical case report elucidates the treatment of the aberrant tongue thrusting habit in an8-year-old female patient by utilizing a conventional customised habit breaking appliance –fixed palatal cribwith the follow up period of fivemonths. The therapeutic efficacy was evaluated at the end of five months.

Case report

Afemale patient aged 8 years presented to the Department of Pediatric Dentistry with the complaint of pain and localized swelling in the upper right back tooth region for past one week. Investigations using radiograph suggested secondary caries with chronic periapical abscess in relation to 55.Patient was advised to go for re-pulpectomy over the stainless steel crown for the same. On comprehensive evaluation, the child had a noticeable anterior open bite andincompetent lips were also identified. On clinical assessment, it was found that she had a habitual forward positioning oftongue against the anterior teeth.A fixed palatal crib was planned due to excessive anterior open bite.

Accordingly, the first permanent molars were affixed and upper and lower alginate impressionswere taken. Fabrication of a customised palatal crib was done. Stainless steel wire of 0.19 mm was used and the framework was securely soldered to the bands on either side. Cementation of the appliance was done using GIC type I cement in the subsequent appointment. The periodic recall was done at3rd month and 5th month respectively which revealed the transformation progress.At 5 months; anterior open bite was reduced from 8 mm to3 mm.

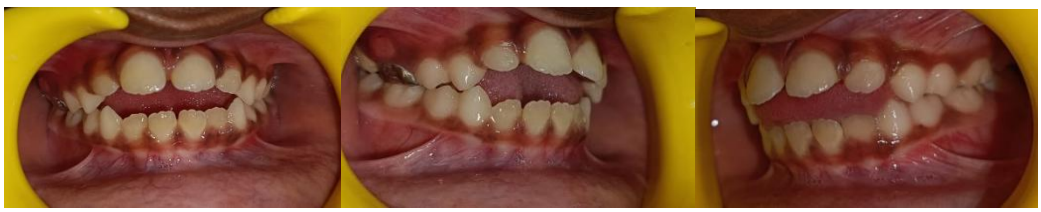

FIGURE 1: Preoperative images showing anterior open bite due to tongue thrusting habit (Frontal and lateral view)

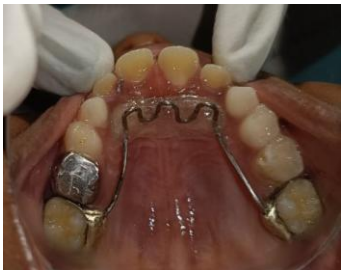

FIGURE 2: Intraoperative image showing palatal crib

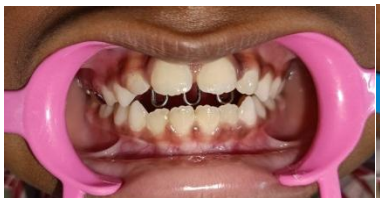

FIGURE 3: Periodic recall at 3rd month

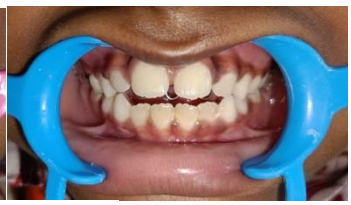

FIGURE 4: Periodic recall at 5th month

Discussion

Tongue thrust is an abnormal oral habit pattern produces an anterior open bite and protrusionof the incisors, thereby complicating the orthodontic diagnosis and prognosis. Treatment strategy depends on the patient's age, phonetic articulation defects and malocclusion type. Rosa M,Quinzi V, Marzo G[4] suggested no intervention required if the anterior open bite is minimal that is about 1-3mm during the mixed dentition period. Here in this case, anterior open bite is about 8 mm. Themain goalis to redirect the tongue's resting position. The fixed palatal crib was opted for this case to effectively manage thetongue thrusting habit. Success depends on two significant considerations such as the crib design and duration of thetreatment .The palatal crib has to be worn for a period of 6 months to be successful according to Subtenly and Sakuda[5].

In this clinical case, the patient presented with tongue thrusting habit and an aberrant tongue position. To formulate an optimal treatment strategy, comprehensive analysis of etiological factors is significant which includes psychological, physiological and anatomical variants along with behavioural modifications. Shah S et al[6] study suggested that targeted patient counselling, appliance and reminder therapeutic management has demonstrated the success of the intervention. Patient was counselled regarding the tongue thrusting habit and its consequences.Therefore, a fixed palatal appliance was provided for habit cessation as an interceptive measure.The appliance was worn for a period of 5 months.The patient's inability to persist with the treatment has impeded the ability to achieve the full therapeutic benefits anticipated from the palatal crib appliance intervention corroborating Subtenly and Sakuda's study.

Conclusion

Atypical tongue posture and anterior open bite must be thoroughly evaluated and understanding the etiological factors is significant. Early and targeted interventions prevent the development of severe malocclusions in the adulthood and also avoid complex orthodontic treatment at the later stages. It is advisable to begin initially with non-invasive methods like patient counselling, functional therapy or exercises prior to the usage of habit breaking appliances. In certain cases,

an additional intervention may be required, so in this present clinical case, a customised fixed palatal crib appliance was fabricated and the clinical outcome was favourable after a 5 month follow up.

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