IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 20, Issue 10 Ser.3 (October. 2021), PP 05-07
www.iosrjournals.org

A Case Report On correction Of Tongue Thrusting Habit Using Fixed Palatal Crib Appliance.

Dr. Rupali Shrivastava[1*]
Post Graduate. Dept. Of Pedodontics And Preventive Dentistry. K D Dental College And Hospital, Mathura, Uttar Pradesh.

Dr. Sonal Gupta[2]
Head Of Department, Dept. Of Pedodontics And Preventive Dentistry. K D Dental College And Hospital, Mathura, Uttar Pradesh.

Dr. Poornima Tripathi[3]
Post Graduate, Dept. Of Pedodontics And Preventive Dentistry, K D Dental College And Hospital, Mathura, Uttar Pradesh.
Corresponding Author: Dr. Rupali Shrivastava

Abstract- *The presence of any abnormal oral habits may affect the form and function of orofacial structures. Tongue thrusting is one of the most common oral habits which results in the development of anterior open bite. Hence, this case report deals with the management of tongue thrusting habit in an 8-year-old patient which was intervened using fixed palatal crib appliance.*

Keywords *- Tongue thrusting habit, Anterior open bite, Palatal crib.*

Date of Submission: 25-09-2021 Date of Acceptance: 08-10-2021

I. Introduction

Proffit and Mason defined tongue-thrusting habit as the protrusion of the tongue against or in between the anterior dentition with excessive circumoral muscle activity during swallowing. They also stated that one or more of the following conditions should exist to define the thrust: first, the tongue should move forward to contact the lower lip during swallowing. Secondly, the forward movement of the tongue between the anterior teeth during speech may be observed. Finally, a forward positioning of the tongue with the tip of the tongue positioned between or against the anterior teeth at rest.[1]

The main etiologic factor of tongue thrusting habit as proposed by Fletcher are,genetic or heredity factor,learnedbehaviour (habit),infections,feeding practices.[2-6]

The various features associated with the habit arepresence of anterior open bite, proclined and spaced anterior, incompetent lips, anterior and posterior cross bites, abnormal mentalis muscle activity. Spontaneous correction of the dental changes occurs if the habit ceases before the age of 5 years and thus do not require any treatment.[7,8]

The treatment approaches for these habits should be carried out in the following stages;[9]

1. Direct counselling of the patient
2. Reminder therapy
3. Rewards concept
4. Orthodontic appliance treatment.

The present case report describes the management of the abnormal tongue thrusting habit in an8-year-old female patient using a conventional habit breaking appliance with 6months of follow up.

II. Case Report

An8-year-old female patient reported to the department of Pedodontics and Preventive dentistry with chief complaint of pain and swelling in her upper left back tooth region for one week. After the radiographical investigations she was diagnosed with chronic periapical abscess with root resorption i.r.t 65.Patient was advised to go for extraction for the same.

Taking into consideration the holistic approach of treatment, the incompetent lips and anterior open bite came to notice. On further examination, she was reported with a habit of protruding tongue towards anterior

teeth and lower lip bitingfor 2-3 years. The patient was trained for various myofunctional therapy exercises which included lip exercise, button pull exercise, ballooning exercise, and drinking out of a straw exercise but all these methods failed to provide a well appreciableresult, thus a fixed appliance therapy was planned.

Accordingly, the first permanent molars were banded and an upper and lower alginate impressions were taken. A palatal crib was fabricated using 0.9mm stainless steel wire and joints of the crib was soldered to the respective bands. In the next appointment the appliance cementation was done using GIC type I cement.

The subsequent follow-up was done at 1 week,1 month, 3 months and 6 months respectively.

There were observable changes in anterior opening bite reduction at the end of 3 months and 6 months with initial anterior open bite of 5mm, reduced to 0.5mm.

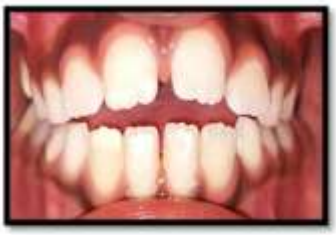

Fig 1: Preoperative image showing anterior open bite

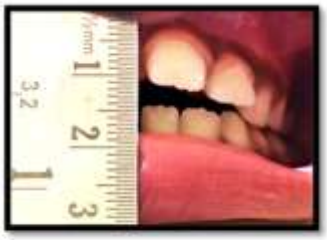

Fig 2: Presence of 5mm of anterior open bite

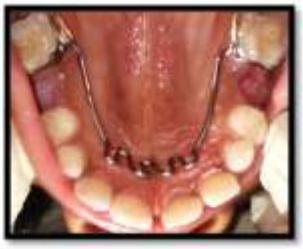

Fig 3: Intraoperative image showing Fixed palatal crib

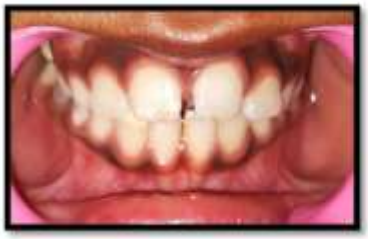

Fig 4: Postoperative image with follow up at 1 month

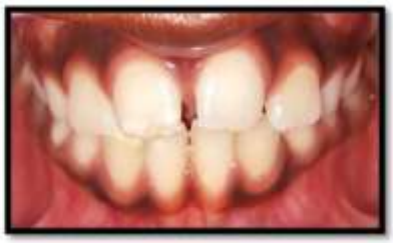

Fig 5: Postoperative image with follow up at 3 months

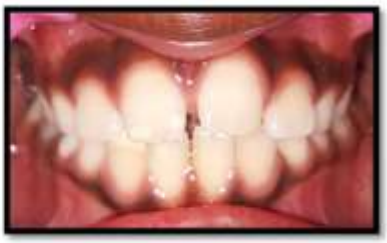

Fig 6: Postoperative image with follow up at 6 months

III. Discussion

Tongue thrust is an oral habit pattern related to thepersistence of an infantile swallow pattern during childhood andadolescence and thereby produces an open bite and protrusionof the anterior tooth segment.[10]

It has always been considered as a complication in the diagnosis and prognosis of orthodontic treatment. Management of tongue thrust depends on the age of the patient, presence or absence of associated manifestation, speech defect, and type of malocclusion. According to Rosa M et al, no treatment should be performed to correct minimal (1-3mm) anterior open bite in mixed dentition while in the present case it is 5mm.[11]

Patient can be trained with myofunctional exercise, use of pre-orthodontic trainer initially and later speech and mechanotherapy can be planned. If necessary surgical treatment for correction of malocclusion can be done.[12]

The most importantconsideration for the correction of the tongue thrusting habitis to redirect the tongue's resting position. So, to effectivelymanage this, the fixed palatal crib is a good treatmentmodality. Thus, both the crib design and duration of thetreatment are two important considerations for success.[13]If the palatal crib is worn for less than 6 months there are chances of failure in redirecting tongue while treating anterior open bite cases as reported by Subtelny and Sakuda.[14]

According to Shwetha G et al, appliances consisting of cribs in the anterior region are found to be very effective as reminders as well as physical restrainers.[15]

In the present case, the patient had tongue thrusting and also reported abnormal tongue position. To plan an appropriate treatment, it is important to understand the aetiology that includes psychological, physiological, anatomical and planning for behaviour eradication for the positive outcomes.

In accordance to Shah S et al, counselling of the patient, orofacial myofunctional therapy, appliance therapy and reminder therapy have proved to be helpful in successful management of tongue thrusting

habit.[16]Hence,we planned to counsel the patient first however there was no change in the habit. Therefore, fixed palatal appliance was given to break the occurrence.

IV. Conclusion

Abnormal tongue posture in the presence of anterior open bite must be examined and addressed with appropriate understanding. Early interventions avoid the development of severe skeletal malocclusions during growth and development. It is always recommended to start first with least invasive methods like counselling, demonstration of various myofunctional exercises before using any habit breaking appliances. Some children need additional help to stop the habit so in this case fixed palatal crib appliance was fabricated which gave us successful clinical outcome with 6 months follow up.

References

[1]. Proffit, W. R., & Mason, R. M. Myofunctional therapy for tongue thrusting:Background and recommendations. Journal of the American Dental Association 1975; 90(2): 403-411.
[2]. Traisman AS, Traisman HS. Thumb and finger-sucking: A study of 2,650 infants and children. J Pediatr 1958;52:566-72.
[3]. Kharbanda OP, Sidhu SS, Sundaram K, Shukla DK. Oral habits in school going children of Delhi: A prevalence study. J IndianSoc Pedod Prev Dent 2003; 21:120-4.
[4]. Lley WJ. A clinical appraisal of tongue thrusting. Am J Orthod1969; 55:640-50.
[5]. Pannbacker M, Hanson M. Comment on Hanson's "Tongue Thrust: A Point of View". J Speech Hear Disord 1976; 41:559.
[6]. Shankar G. Tongue thrust habit – A review. Ann Essences Dent 2009;1(2):14-23.
[7]. Proffit WR, Fields HW. Contemporary Orthodontics, 3rd ed. USA: Mosby2000: 129-35.
[8]. Warren JJ, Bishara SE, Steinbock KL, Yonezu T, Nowak AJ. Effects of oral habits' duration on dental characteristics in the primary dentition. J Am Dent Assoc 2001;132(12):1685-93.
[9]. Maguire JA. The evaluation and treatment of pediatric oral habits. Dent Clin North Am 2000;44(3):659-69.
[10]. Tulley WJ. A critical appraisal of tongue-thrusting. Am J Orthod1969; 55:640-50.
[11]. Rosa M, Quinzi V, Marzo G. Pediatric orthodontics Part 1: Anterior open bite in the mixed dentition. European Journal of Pediatric Dentistry 2019; 20(1) :80-82.
[12]. Shrestha BK, Orthodontic Treatment of Anterior Dental Open Bite withDrawbridge Effect: A Case Report. Orthodontic Journal of Nepal 2013;3(1):69-72.
[13]. Flak ML. Neuromuscular facilitation for the control of tongue thrust swallowing. Philedelphia. Harper and Row; 1987.
[14]. Subtelny JD, Sakuda M. Open bite: Diagnosis and Treatment. Am J Orthod1964;50(5):337- 58.
[15]. Shwetha G., Ashmitha K. Shetty, Usha R.and Pushpalatha C. Modified Palatal Crib Appliance for Habit Correction: A Case Report. Journal of Dental and Oro- facial Research 2017; 13(2): 61-65.
[16]. Shah S, Nankar M, Bendgude V, Shetty B. Orofacial Myofunctional therapy in tongue thrust habit: A narrative review. Int J Clin Pediatr Dent 2021; 14(2): 298-303.

Dr. Rupali Shrivastava. "A Case Report Oncorrection Of Tongue Thrusting Habit Using Fixed Palatal Crib Appliance." *IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*, 20(10), 2021, pp. 05-07.