



Case Report

ISSN: 2581-3218

IJDR 2021; 6(1): 4-6

Received: 08-02-2021

Accepted: 26-03-2021

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www.dentistryscience.com

Modified TPA for scissor bite correction: A Case Report

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Abstract

Unilateral scissor bite condition is less prevalent and is often accompanied by cant of occlusion and varying degrees of facial asymmetry. Such discrepancy when accompanied with skeletal etiological factor is difficult to treat. This article presents two case reports to demonstrate simple, efficient and non-invasive camouflage technique to correct unilateral scissor bite of adult patients.

Keywords: Unilateral scissor bite, TPA, J- hook, Acrylic bite block.

INTRODUCTION

A Scissor Bite is a condition in which the mandibular arch is contained within the maxillary arch, caused by a relatively large maxillary dental arch compared with its mandibular counterpart [1]. Scissor bite may be unilateral or bilateral and accompanied by discrepancies in facial symmetry, difficulties in lateral excursive movements owing to excessive buccal eruption of maxillary posterior teeth and lingual tipping of mandibular posterior teeth [2]. Scissor Bite correction therefore remains a challenge for the clinician. Numerous treatment modalities for scissor bite correction in the posteriors have been suggested: multi-bracket appliance, intermaxillary cross-elastics, lingual arch with intra- maxillary elastic(s) and Trans Palatal Arch (TPA) with intra-maxillary elastics. This condition may be observed in concurrence with a vertical growth pattern, or anterior open bite. Treatment approach/mechanics need to be based on individuality of the problem presented [3].

Two Case Reports portray the aforementioned through exhaustive documentation.

CASE REPORT

Case 1: A 33-year-old adult female patient reported to the Department of Orthodontics and Dentofacial Orthopedics with the chief complaint of improper bite. Patient was diagnosed with skeletal Class II maxillomandibular relationship having orthognathic maxilla and retrognathic mandible, average to horizontal growth pattern, retruded chin, Angle's Class II subdivision on left side, maxillary right 1st and 2nd premolars in scissor bite, proclined incisors with spacing, 1.5 mm of Curve of Spee and Cant of Occlusion is present. The face is asymmetric with convex profile and potentially competent lips. Postero-Anterior cephalogram confirmed the skeletal asymmetry due to short ramal height in right side (figure 1).

A surgical plan was suggested to patient. Since, the patient was not willing for surgery, a camouflage treatment was opted to correct the scissor bite present on right side. The upper 1st molars were banded bilaterally followed by which a removable Transpalatal Arch (TPA) fabricated from 19 gauge stainless steel wire was inserted into the lingual sheath welded on the palatal aspect of molar bands. A wire extension in the form of J- hook was soldered on TPA. Traction force was applied by using E-chain attached from the Begg's bracket bonded on the labial aspect of 1st and 2nd right premolar to the J- hook. The E- chain was stabilized by using composite on the upper premolars. An acrylic bite block extending on the posterior teeth

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was cemented on the upper left side for disocclusion (figure 2). Simultaneous palatal tipping and intrusion of both the premolars in the right side was achieved after two and a half months, correcting the scissor bite condition (figure 3).



Figure 1: Preoperative extraoral and intraoral photographs

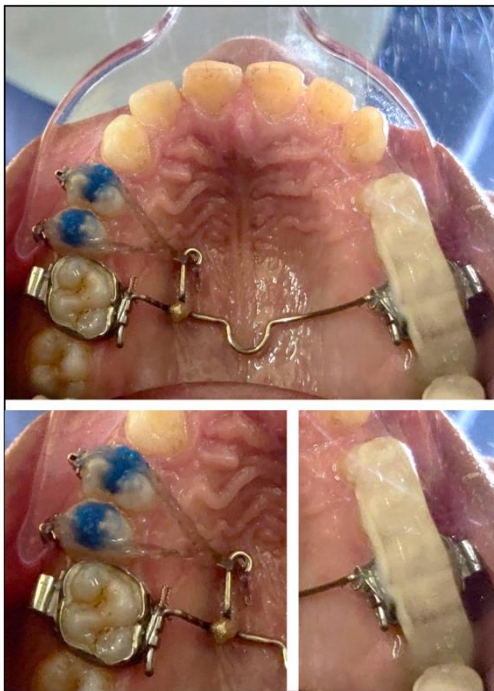


Figure 2: Soldered J- hook on TPA



Figure 3: Postoperative extraoral and intraoral photograph

Case 2: A 24-year-old adult male patient reported to the Department of Orthodontics and Dentofacial Orthopedic with chief complaint of crowding in upper and lower front teeth region. Patient was diagnosed with skeletal class II maxillomandibular relationship, Angle's class I molar and canine relationship bilaterally, crowding of upper and lower anterior teeth with increased overbite, single tooth scissor bite in 17-47 (figure 4). Bonding of upper arch from 1st molar to its antimere on other side was done. A TPA with soldered J- hook facing distally was placed on upper 1st molars through which traction was applied by using E-chain from the J- hook to the Begg's bracket bonded on 17. Palatal movement of 17 was achieved and was brought into proper arch form.



Figure 4: Preoperative and Postoperative occlusal view

DISCUSSION

In scissor bite condition it is often seen that one tooth or teeth are displaced lingually or buccally with reference to its antagonist tooth or teeth. Combination of increased inter- maxillary width and a narrow alveolar process in mandible cause complete scissor bite, known as Brodie Bite [4,5]. Unilateral scissor bite in the posterior segments often leads to a deviated path of closure due to one tooth or more owing to the premature contacts. It can lead to unfavourable teeth positions and

change in the alveolar bone contour during development. Correcting such problems may require disocclusion of the occlusal plane by using bite plates which cause transient limitation in a function like chewing. There are various biomechanical approach to correct a scissor bite condition. The modalities include cross elastics, multi bracket appliance but the limiting factors comprising of patient compliance. Other adjunctive includes surgical correction incorporating accelerated orthodontics by performing Periodontally Accelerated Osteogenic Orthodontics (PAOO) surgery [6-8]. Increased cost restricts the option available to manage the case [9-11].

Considering the camouflage option, simultaneous intrusion and palatal crown tipping of maxillary teeth was achieved by using modified TPA and the lower arch form was maintained using a rigid archwire in both the cases [12].

CONCLUSION

The present article demonstrates the modification of TPA by incorporating a soldered J-hook unilaterally and attaching E-chain to apply force. It is novel method to correct scissor bite which involves both transverse and vertical problem within a short period of time in a simple manner.

Financial Support

Nil.

Conflict of Interest

The author declares no conflict of interest.

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