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Correction Of Unilateral Scissor Bite and Cingulum bite In Adult Patient

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Abstract

Introduction: Scissor bite and cingulum bite represent transverse and vertical malocclusions that may compromise occlusal function and stability. Effective correction is essential to establish proper interincisal relationships. This case report describes the orthodontic management of an adult patient with unilateral scissor bite accompanied by cingulum bite. The aim of this case report was to present the treatment malocclusion of unilateral scissor bite and cingulum bite in adult patient. **Case Report:** A 23-year-old man patient who presented a skeletal class III and dental class I type 1 malocclusion. Intraoral examination showed scissor bite in 24/35 and 25/36, diastema 22-23, mesial drift 36 and cingulum bite. The patient was treated with 0.022-inc Roth prescription. Leveling and aligment were perfomed to correction scissor bite in 24/35 and 25/36 with open coil spring, lingual button, and using elastic class III in the end of treatment. After a total 26 months of treatment, all brackets were debonded. **Conclusion:** Treatment results achieved the patient's profile and esthetic smile.

Keywords: cingulum bite, scissor bite, malocclusion, orthodontic treatment.

INTRODUCTION

Scissor bite, also known as lingual crossbite, is a form of malocclusion where the buccal cusp of lower teeth occludes with the palatal cusp of upper teeth, which can occur due to buccal tilting of upper teeth or lingual tilting of lower teeth. Transverse discrepancy between dentoalveolar arches has been considered as the main etiology, either excessive growth of maxilla or lack of mandible growth.[1]

Cingulum bite occurs when anterior lower teeth occlusion the cingulum of anterior upper teeth. This maloccusion also called deep bite, which defined as the misalignment in the vertical dimension of teeth and jaws and characterized by excessive overlap of the upper front teeth over the lower front teeth. Numerous factors, including genetics, environmental factors, and behavioral ones, might contribute to deep bite. [2]

For stability in function and retention, its vital that the deep bite incisor relationship be corrected to establish the proper interincisal relationship of overbite to overjet and interincisal angles.[3] This case report showed the treatment of unilateral scissors bite and cingulum bite in adult patient.

DIAGNOSIS AND ETIOLOGY

A 20-year-old man visited the hospital complaining of irregular teeth. Clinical examination showed a skeletal class III and dental class I type 1 malocclusion.

This patient presented class I molar relationship in the right side and class III molar relationship in the left side. Radiographic examination showed all third molars was fully erupted. Cephalometric radiograph and analysis (Table 1.) demostrated a skeletal class III (ANB angle -10). The SNA angle of 85° indicated an

prognatic maxilla compared with cranial base, and the SNB angle of 86° reflected prognatic mandible compared with cranial base

TREATMENT OBJECTIVES

The treatment objectives included leveling and aligning, correcting scissor bite, coreccting cingulum bite, establishing proper overjet and overbite and received class I molar relationship.

TREATMENT PROGRESS

The treatment objectives included leveling and aligning, correcting scissor bite, coreccting cingulum bite, establishing proper overjet and overbite and received class I molar relationship. Roth prescription slot 0.022-inc was bonded to all teeth, while molar bands were bonded to upper and lower first molar. Treatment initiated with bilateral maxillary first premolar extraction and lower third molar extraction. Treatment sequence was performed with sequance of round archwire NiTi 0.012, NiTi 0.014, NiTi 0.016, and following SS 0,018 with elastic class III in left side.

In mandible, scissor bite correction was performed with sequance of round archwire NiTi 0.012, NiTi 0.014, NiTi 0.016, with using open coil spring between 34 and 36. Lingual button was bonded in 35 to place the powerchain between 34 and 36 in lingual. Then, using SS 0,018 with elastic class III in left side to correction and achieve class I molar relationship.

TREATMENT RESULT

After a total 26 months of treatment, all brackets were debonded. A maxillary and mandible clear retainer was delivered to be worn full-time for the 6 months and 12 hours/day for the following time.

Post treatment facial photographs showed improvement in the facial profile (Fig.3) The intraoral photographs showed satisfactory dental alignment, bilateral class I canine relationship and ideal overjet and overbite. Good bucal interdigitation was achieved. Maxilla and mandible alignment was completed and dental midline coincided and matched the facial midline. Facial photographs showed improved lip closure. The cephalometric analysis between pretreatment and posttreatment radiograph in the (Table 1) showed that sagital skeletal relationship still skeletal class III (ANB still -1°).

The chief complaints was resolved, profile corrected, crowding in maxilla and mandible corrected, The scissors-bite in left side and cingulum bite were sufficiently corrected. The patient referred being satisfied with the obtained results.

DISCUSSION

Malocclusions can be treated in several ways according to the characteristics associated with the problem, such as the anteroposterior discrepancy, age and complications of each patient.[4]

Scissor bite is a rare phenomenon in the general population, with an estimated occurrence of 1.5% of the general population, and even fewer cases during the primary dentition period. Untreated scissor bite in younger patients can lead to aberrant jaw growth and the development of facial asymmetry. Furthermore, as a patient ages and growth of the mandible slows, the correction of scissor bite becomes more challenging.[5]

Scissor bite can be the cause or consequence of interference with normal oral function. Thus, the growth of the mandible may be disturbed, resulting in facial asymmetry. The scissor bite can become progressively worse if left untreated as it cannot be corrected spontaneously and the continued growth of the maxillary teeth leads to overeruption and occlusion on the buccal surfaces of the mandibular posterior teeth.[6]

Treatment of scissors bite may involve intermaxillary cross-elastics, full

Fig 1. Pre-treatment facial photograph

Fig 2. Pre-treatment intraoral photograph

fixed appliance, bite turbos, transpalatal arch and/or lower lingual arch. All of these mechanics may induce undesirable side- effects: 1. extrusion of second molars in one or both jaws, 2. undesirable decrease in overbite or even a frank openbite, 3. clockwise rotation of the mandible, and 4. premature occlusal contacts.[7]

Correcting of deepbite is often a

Fig 1. Pre-treatment facial photograph

Fig 4. Post-treatment intraoral radiograph

challenging step in orthodontic treatment. Untreated deepbite can cause increased anterior crowding, maxillary dental flaring, periodontal problems, and temporomandibular joint problems and can interfere with lateral and anterior mandibular movements.[8] Deep bite is a common malocclusion in adolescents and adults. It is characterized by reclining upper front teeth (tilted toward the roof of the mouth), which causes oral and aesthetic problems.[9]

The interincisal angle is believed to play a critical role in the stability of deepbite correction. Berg suggested that the interincisal angle should be less than 140º at the end of treatment for stability of deepbite treatment. According to Houston an approximate interincisal angle of 135º inhibits incisor overeruption and thus has an impact on the stability of deepbite treatment.[8]

type 1 malocclusion in this case only can be treated by camuflage treatment. Because the patient refused to orthognatic surgery. Scissors-bite in left side were sufficiently corrected by leveling and alignment and using lingual button and elastic class III. But unfortunately, the patient's cooperative using the elastic class III was low, resulting the molar relationship in left side not yet achieved.

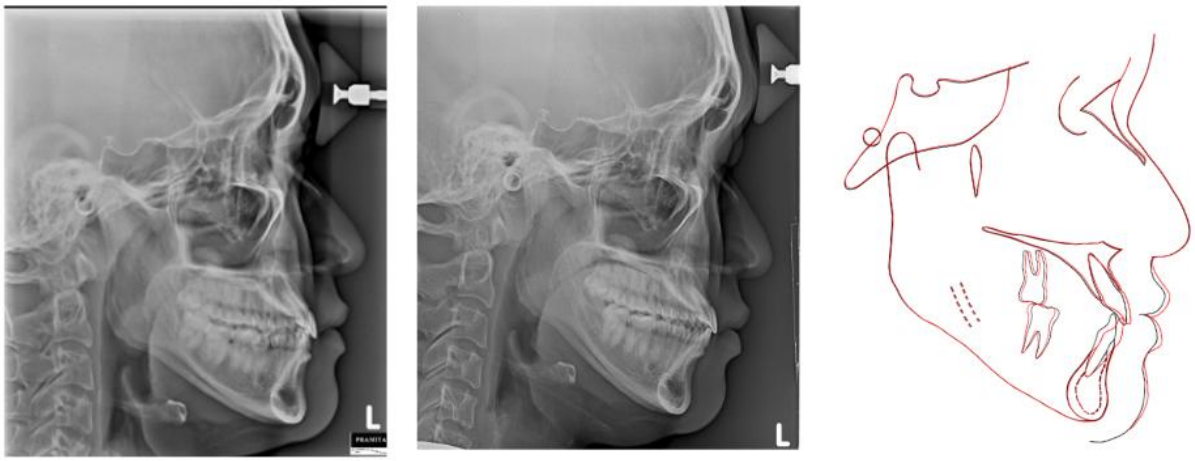

Fig 5. Cephalometric pre- and post-treatment and superimposition.

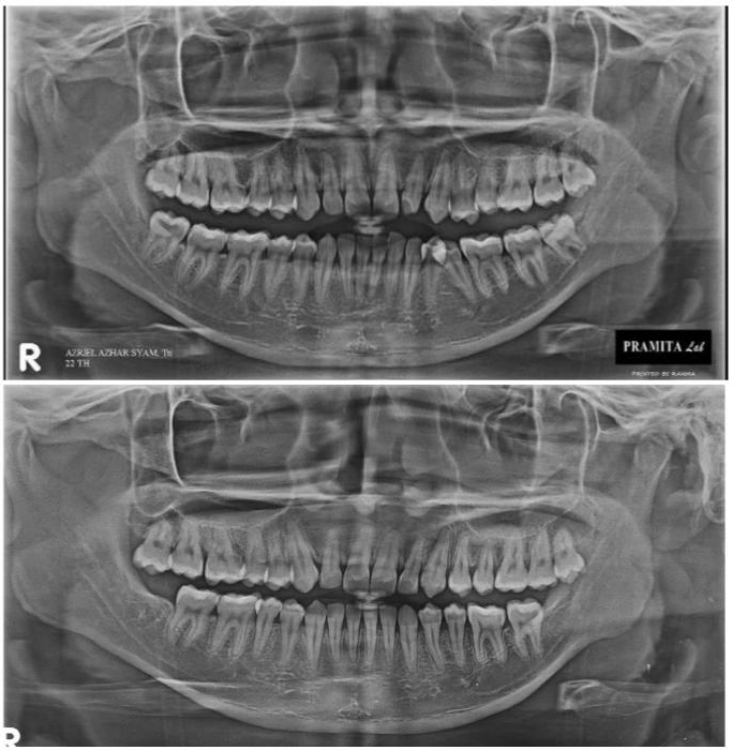

Fig 5. Panoramic radiograph pre- and post-treatment.

Table 1. Cephalometric summary

Parameter	*Norm (mean ± SD)*	*Pre- treatment*	*Post- treatment*
Cephalometric			
SNA (°)	82±2	85	85
SNB (°)	80±2	86	86
ANB (°)	2±2	-1	-1
U1-NA (mm)	4±2	6	8
U1-NA (°)	22	29	32
L1-NB (mm)	4	2	5
L1-NB (°)	25	24	30
Interincisal (°)	131	125	119
E-Line to upper lip (mm)	2-3	3	1
E-Line to lower lip (mm)	1-2	1	1
Nasolabial (°)	102±8	86	85

CONCLUSIONS

Treatment results achieved the patient's profile and esthetic smile.

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