

Scissor Bite Correction by Bite Plane

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Introduction

Scissor bite is a rather rare orthodontic anomaly, where the palatal surface of the upper molars rest laterally from the buccal surface of the mandibular molars. Scissors-bite is characterized by labial eruption of the upper molar and/or lingual tipping of the lower molar and is caused by an arch-length discrepancy in the posterior region. The upper molars are positioned outward or the lower molars are positioned inward. When the mouth is closed the molars miss each other and overlap with no contact.

Features in scissor bite-

- Facial profile-The scissor bite has no significant influence on the facial profile.
- Airway-The scissor bite is not known to reduced airway.
- Chewing function-The chewing function is bad since the molars make no contact with each other.
- Jaw joints-Patients may experience a clicking or pain in the jaw joints since the jaw is usually forced to function in a deviated position during the chewing process.

ABSTRACT:

This article reports the successful treatment method of scissors-bite correction using bite-plane. A female patient, 16 years and 3 months old, had a chief complaint of improper occlusion and crowding of anterior teeth. The patient was given the diagnosis of Angle Class I malocclusion incisor crowding and scissor bite on the right side. Treatment was done with a bite plane and 0.022 MBT appliance. Because of the bite-plane effect, the upper and lower molars were separated in occlusion, and the scissors-bite was corrected effectively within a short time.

Key words: Scissors-bite, Bite-plane

- Teeth wear-Molar wear is unlikely since the molars do not come in contact with each other.

Scissors-bite is observed most frequently in the upper and lower second molars. Several treatment procedures have been proposed to treat scissors-bite in the molars: intermaxillary cross-elastic,¹ multi-bracket appliance, transpalatal arch appliance (TPA) with intra-maxillary elastic,^{2,3} and lingual arch appliance with intra-maxillary elastic.⁴ However, these generate extrusive forces on the second molars in both jaws and might induce an undesirable decrease in overbite, clockwise rotation of the mandible, and premature contact. In addition, treatment results might depend on patient cooperation if intermaxillary elastic is used.

Recently, dental implants,^{5,6} miniplates, and screws have been used as skeletal anchorage. Skeletal anchorage provides stationary anchorage for various tooth movements without the need for active patient compliance and with no undesirable side effects. Titanium miniscrews especially have gradually gained acceptance for stationary anchorage because they provide clinical advantages such as minimal anatomic limitations on placement, lower medical costs, and simpler placement with less invasive surgery. In this report, we demonstrate a simple and fast method that can be used to correct a molar scissors-bite with the use of a bite-plane.

Clinical case

A female patient, 16 years and 3 months of age, consulted with a chief complaint of improper occlusion and irregular teeth. She had a convex profile and a symmetric frontal view. She gives history of surgical treatment for the cleft lip (Figure 1). On clinical examination, both canine and molar relationships were Class I on both sides, but a scissors-bite of the posterior arch on the right side was observed. Overbite was 6.5 mm and overjet was 1.1 mm. The dental midline was deviated to right by 3 mm. On cast analysis, the arch-length discrepancy was 2.2 mm in the maxilla and 8.3 mm in the mandible.

The patient was given the diagnosis of Angle Class I malocclusion, with a skeletal Class I jaw base relationship, lip protrusion, moderate anterior teeth crowding, and a scissors-bite of the right side.

Treatment objectives were to correct incisor crowding, obtain a good facial profile, achieve

acceptable occlusion with a good functional Class I occlusion, and eliminate the scissors-bite. Bite plane was used for the correction of scissor bite. (Figure 2). After achieving acceptable occlusion, fixed appliance treatment with 0.022 MBT prescriptions were done for achieving the treatment objectives (Figure 3). Post treatment results were good and stable (Figure 4)..

Discussion

In the present case, anchorage was required to improve adequately the scissors-bite. The scissors-bite in the present case might have been caused by buccal inclination and over-eruption of the upper right molars. The bite planes contacted the incisal edge of the lower incisors in occlusion, and the upper and lower molars were separated immediately. The bite-plane effect might be useful for correcting the molar scissors-bite because it helps the palatal inclined movement of the upper molar by reducing occlusal contact between the upper and lower molars. In addition, the effect contributes to avoidance of breakage of the elastic running through the occlusal surface through contact with the buccal cross-bite. As a result, complete treatment of a scissors-bite in the present case was achieved in 5 months.

Conclusion

Sound diagnosis and biomechanics enhances the efficiency of molar scissors-bite correction. Disadvantages like discomfort, gingival irritation, patient cooperation, molar extrusion, can be eliminated with the use of bite plane in scissor bite correction.

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Figure 1: Pre-treatment extraoral and intraoral photographs

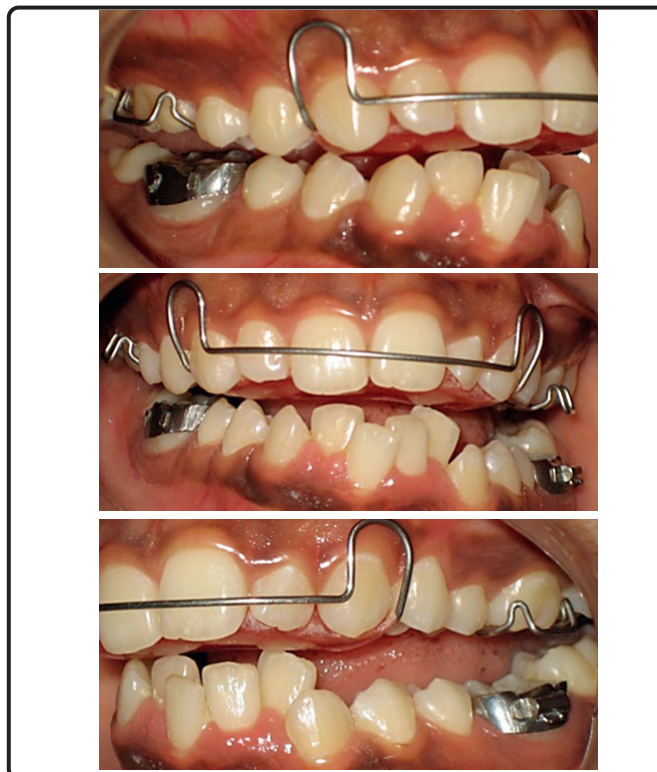


Figure 2: With bite-plane



Figure 3: After scissor bite correction



Figure 4: Post-treatment extraoral and intraoral photographs