

Comprehensive approach to simultaneous molar intrusion and canine retraction in the treatment of Class II anterior open bite using miniscrew anchorage

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Introduction: Anterior open bite is one of the most difficult malocclusions to correct in orthodontic treatment. Molar intrusion using miniscrew anchorage has been developed as a new strategy for open bite correction; however, this procedure still has an important concern about prolonged treatment duration in the patient with anteroposterior discrepancy due to the separate step-by-step movement of anterior and posterior teeth.

Objective: This article illustrates a comprehensive orthodontic approach for dentoalveolar open bite correction of an adult patient, by using miniscrew.

Case report: A woman 19 years and 5 months of age had chief complaints of difficulty chewing with the anterior teeth and maxillary incisor protrusion. An open bite of -2.0 mm caused by slight elongation of the maxillary molars was found. The patient was diagnosed with Angle Class II malocclusion with anterior open bite due to the vertical elongation of maxillary molars. After extraction of the maxillary first premolars, concurrent movements of molar intrusion and canine retraction were initiated with the combined use of sectional archwires, elastic chains and miniscrews.

Results: At 4 months after the procedure, positive overbite was achieved subsequent to the intrusion of maxillary molars by 1.5 mm and without undesirable side effects. Class I canine relation was also achieved at the same time. The total active treatment period was 21 months. The resultant occlusion and satisfactory facial profile were maintained after 54 months of retention.

Conclusion: The presented treatment shows the potential to shorten the treatment duration and to contribute to the long-term stability for open bite correction.

Keywords: Open bite. Orthodontic anchorage procedures. Angle Class II. Tooth movement technique.

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