Diagnostic considerations for Class II treatment with TADs

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Establishment of proper anchorage must be one of the most important keys to achieve successful results in treating Class II patients. In this decade, emergence of temporary anchorage devices (TADs) has completely changed the treatment strategy, providing sufficient anchorage without patient compliance.\(^1\)\(^2\) In this lecture, I would like to introduce effective usage of TADs in Class II treatment and discuss the diagnostic considerations.

Usage of TADs in Class II patients can be classified into two categories. One is the alternative use of traditional anchorage devices for extraction cases. By utilizing TADs, patients could get better results without uncomfortable extraoral appliances.\(^3\) Furthermore, we can choose the extraction site according to the condition of the tooth, not to the strength of the anchorage unit.

Another one, use of TADs makes it possible to distalize the maxillary dentition simply, and expands application of non-extraction treatment. Even with the interradicular screws, the maxillary molars could be distalized by 3 mm on average.\(^4\) Interestingly, the mandibular plane angle was not increased during the distalization. Moreover, our recent study demonstrated newly bone formation on the maxillary sinus induced by mechanical stress, suggests the maxillary distal tooth movement might be a safe procedure in the view of bone physiology.\(^5\) On the other hand, not all the Class II patients could be treated without extraction. It might be closely related with the discrepancies between the tooth materials and jaw bones, especially in the mandible.

Not only the sagittal but also the vertical discrepancies could be improved with TADs. Patients with severe gummy smile have been treated with an orthognathic surgery because absolute incisor intrusion was considered difficult.\(^6\) Meanwhile, the recent development of TADs makes it considerably possible to intrude the incisors without any undesirable counteractions.\(^7\) The most evolutionary change in Class II treatment with TADs must be the treatment of anterior openbite.\(^8\)\(^-\)\(^10\) Absolute molar intrusions and the succeeding mandibular counter-clockwise rotation are quite effective to increase reduced overbite. As a result, the patients could be treated without surgery even though they have a negative overbite of less than -5 mm.

Conclusively, TADs enhance the quality of Class II treatment with simple mechanics.
References