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[PDF (368K)] [References]

## Influence of Mandibular Fixation Method on Stability of the Maxillary Occlusal Plane after Occlusal Plane Alteration

Akira Yosano<sup>1)</sup>, Akira Katakura<sup>1)</sup>, Takashi Takaki<sup>1)</sup> and Takahiko Shibahara<sup>1)</sup>

1) Department of Oral and Maxillofacial Surgery, Tokyo Dental College

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Abstract: In this study, we investigated how method of mandibular fixation influenced longterm postoperative stability of the maxilla in Class III cases. In particular, we investigated change in the maxillary occlusal plane after Occlusal Plane Alteration. Therefore, we focused on change in the palatal plane to evaluate stability of the maxillary occlusal plane, as the position of the palatal plane affects the maxillary occlusal plane. This study included 16 patients diagnosed with mandibular protrusion. Alteration of the occlusal plane was achieved by clockwise rotation of the maxilla by Le Fort I osteotomy and mandibular setback was performed by bilateral sagittal split ramus osteotomy. We analyzed and examined lateral cephalometric radiographs taken at 1 month, 3 months, 6 months, and 1 year after surgery. Stability achieved by two methods of mandibular fixation was compared. In one group of patients (group S) titanium screws were used, and in the other group (group P) titanium-locking mini-plates were used. No significant displacement was recognized in group S, whereas an approximately 0.7mm upward vertical displacement was recognized in the anterior nasal spine in group P. As a result, not only the angle of the palatal plane and S-N plane, but also occlusal plane angle in group P showed a greater decrease than that in group S. The results suggest that fixing the mandible with screws yielded greater stability of the maxilla and maxillary occlusal plane than fixing the mandible with titanium plates.

Key words: Occlusal plane alteration, Stability, Class III case, Mandibular fixation

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