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Original Articles

Surgical Accuracy of Maxillary Repositioning According to Type of Surgical Movement in Two-Jaw Surgery

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Abstract

Objective: To compare the surgical accuracy of the maxillary repositioning according to the maxillary surgical movement type (SMT) in two-jaw orthognathic surgery (TJOS).

Materials and Methods: The samples consisted of 52 Korean young adult patients with skeletal Class III malocclusion treated with TJOS by one surgeon. Lateral cephalograms were taken 1 month before (T0) and 1 day after surgery (T1). The samples were allocated into maxillary advancement (MA), total setback (MS), impaction (MI), and elongation (ME) according to SMT. The distance from the upper incisor tip and the mesiobuccal cusp tip of the upper first molar to the horizontal and vertical reference lines at T0 and T1 were measured. Any discrepancy between the surgical treatment objective (STO) and the surgical result less than 1 mm was regarded as accurate. The accuracy rate (AR [number of the accurate sample/number of the sample] ×1000) and the surgical achievement ratio (SAR [amount of movement in surgical result/amount of movement in STO] ×100) were calculated. Analysis variance (ANOVA) and crosstab analyses were used for statistical analysis.

Results: Although the MS (69.2%) and MI (69.0%) showed a lower AR than the MA (87.5%) and ME (83.3%), there was no significant difference in the distribution of accurate and inaccurate samples among the groups. The mean discrepancy between the STO and the surgical result was less than 1 mm in all groups. Although the ME (93.54%) showed a tendency of undercorrection and the MS (107.10%) and MI (105.42%) a tendency of overcorrection, there was no significant difference in SAR among the groups.

Conclusions: If the surgical plan and procedure is done with caution, the MS and MI can be regarded as just as accurate a procedure as the MA and ME.

Keywords: [Surgical accuracy](#), [Maxillary repositioning](#), [Surgical movement type](#), [Two-jaw surgery](#)

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