Long-term soft-tissue changes and profile attractiveness in class II subdivision malocclusion treatment with symmetric and asymmetric extractions

Class II subdivision malocclusion treatment with 4-symmetric and 3-asymmetric premolar extractions produce different soft-tissue outcomes. This discrepancy may lead to different final facial appearance and long-term soft-tissue behavior. Thus, this retrospective study aimed to compare the long-term soft-tissue changes and profile attractiveness of Class II malocclusion subdivision patients treated with 4- and 3-premolar extractions. Forty treated patients were divided according to the extraction protocol used into 2 groups: Group 1 comprised patients treated with extractions of 3 premolars, with pre- (T1), posttreatment (T2), and long-term posttreatment (T3) ages of 14.10 (SD=2.51), 17.01 (SD=2.82) and 24.50 (SD=4.38) years, respectively, with mean T2-T3 observational time of 6.90 (SD=1.21) years. Group 2 comprised patients treated with 4-premolar extractions, with pre-, posttreatment, ang long-term posttreatment ages of 13.10 (SD=1.22), 16.80 (SD=2.63) and 23.11 (SD=4.39) years, respectively, with mean T2-T3 observational time of 6.83 (SD=1.08) years. The number of female and male patients was the same in both groups: 13 and 7, respectively. T1-, T2- and T3 headfilms were digitized. Soft-tissue cephalometric tracings were performed at the three stages in the Dolphin Software®, according to the Legan-Burstone soft-tissue analysis. Androgenous silhouettes were created in the Adobe Photoshop® CS6 to T2 and T3 headfilms, and profile attractiveness evaluation was performed by laypeople and orthodontists. Treatment- and long-term posttreatment changes were compared between the groups with T- and Mann-Whitney tests. The influence of treatment protocol and the type of rater, and their interaction, in attractiveness evaluation was assessed with Two-Way-ANOVA tests at the T2 and T3 stages. Intragroup profile attractiveness over time was compared with paired-t tests. Significantly greater lower lip retraction (P=0.038) and mentolabial sulcus depth reduction (P=0.010) were observed in the group 2, with treatment (T2-T1). Intergroup long-term soft-tissue changes were similar. There were similar inter- and intragroup profile attractiveness at both stages, and the type of rater did not influence in the

evaluation. Class II subdivision malocclusion patients treated with 4-symmetric extractions present greater lower lip retrusion and mentolabial sulcus depth reduction than those treated with 3-asymmetric premolar extractions. The posttreatment long-term soft-tissue changes and the profile attractiveness at debonding and in the long-term were similar between the groups.