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Tooth Inclination in Elderly with Many Remaining Teeth Observed by 3-D Imaging

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Abstract: Tooth inclination has been discussed many times in terms of esthetics and functionality, but reports related to aging are extremely rare. The purpose of this study was to evaluate tooth inclination in the elderly from the orthodontic point of view. The dental casts of twenty elderly persons with many remaining teeth were digitized with a 3-D laser scanner (VMS-100F,UNISN INC., Osaka, Japan) for reconstruction into 3-D images. Inclination of each tooth was then measured with an analytical software (SURFLACER, UNISN INC. and IMAGEWARE 12, UGS PLM Solutions, MO, USA). The occlusal plane formed by the incisal edge of the central incisor and distal buccal cusp tip of the first molar on either side was used as a reference plane to measure tooth inclination, and the complementary angle as tooth inclination was measured. The average tooth inclinations (degrees) of the maxillary teeth were 8.08 for central incisors, 8.10 for lateral incisors, 4.85 for canines, -6.68 for first premolars, -5.58 for second premolars, -5.15 for first molars, and -5.41 for second molars. The corresponding values for the mandibular teeth were 6.78 for central incisors, 4.87 for lateral incisors, -5.73 for canines, -13.74 for first premolars, -19.21 for second premolars, -23.76 for first molars, and -28.63 for second molars. There was no statistical difference between men and women, except for in the maxillary lateral incisors (p<0.05). Tooth inclination showed a progressive decrease from anterior to posterior. The decrease in the mandibular teeth was more regular than that of the maxillary teeth.

Key words: Tooth inclination, Elderly with many remaining teeth, Dental cast, <u>3-D images</u>, <u>Arch size</u>

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