

Buccal and lingual alveolar bone levels and fixture length before installation of fixtures with various diameters in posterior mandible

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This study compared the difference between buccal and lingual alveolar bone levels in posterior mandible and the proposed potential length of fixture among fixtures with various diameters. Preoperative tomographic images in 105 regions of 98 patients were selected. The difference of alveolar bone levels and the proposed potential length of fixture were measured with templates comprising scales of fixture diameters of 3.75, 4.0, 4.5 and 5.0 mm. The alveolar bone level was measured from superior border of the mandibular canal to alveolar bone crest. A second measurement was performed to calculate the measurement precision. The measurements were compared among the various diameters of fixtures using one-way ANOVA ($\alpha=0.05$). The measurement precision was between 0 and 0.15 mm. The means of the difference between buccal and lingual alveolar bone levels and the means of fixture length of fixture diameters of 3.75, 4.0, 4.5 and 5.0 mm. were 1.58 ± 1.37 , 1.68 ± 1.47 , 1.91 ± 1.65 and 2.1 ± 1.7 mm, respectively, and 13.19 ± 3.369 , 13.03 ± 3.79 , 12.57 ± 3.85 and 12.14 ± 3.85 mm., respectively. The results showed that the difference between buccal and lingual alveolar bone levels and the proposed potential length of fixture were not significantly different among the various diameters.

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