

論 文 要 旨

Evaluation of maxillary central incisors on the noncleft and cleft sides in patients with unilateral cleft lip and palate-Part 1: Relationship between root length and orthodontic tooth movement

〔 片側性唇顎口蓋裂を伴う患者における健側と顎裂側の
上顎中切歯の評価：歯根長と矯正学的歯の移動との関連 〕

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ABSTRACT

Objectives: To measure the root lengths of maxillary central incisors (U1) and evaluate the relationship among U1 root length, tooth movement, and type of treatment appliance in patients with unilateral cleft lip and palate over a long-term follow-up period.

Materials and methods: Occlusal radiographs of 30 patients with unilateral cleft lip and palate, acquired less than 6 months before secondary alveolar bone grafting (SBG, T1) and after edgewise treatment (T2), were measured for U1 root length (R1 and R2, root lengths at T1 and T2, respectively). Frontal and lateral cephalometric radiographs acquired at eruption of U1 (T0), T1, and T2 were evaluated to determine the inclination and position of U1.

Results: The average values of R1 and R2 on the cleft side were significantly lower than those on the noncleft side. Frontal cephalometric analysis revealed that the horizontal distance of the root apex from the median vertical line at T0 on the cleft side was significantly smaller than that on the noncleft side and was correlated with short U1 root length on the cleft side. On the other hand, R1 in patients treated with maxillary protraction appliances between T0 and T1 was significantly shorter than that in patients without maxillary protraction appliances. However, none of the changes in cephalometric measurements were correlated with root length.

Conclusions: In patients with unilateral cleft lip and palate, the short root length of cleft-adjacent central incisors might be associated with the horizontal position of the root apex. In addition, orthodontic treatment with a maxillary protraction appliance before secondary alveolar bone grafting might be associated with short U1 root length.