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Original Articles

Relationships between Dental Roots and Surrounding Tissues for Orthodontic Miniscrew Installation

Kyung-Seok Hu^a, Min-Kyu Kang^b, Tae-Won Kim^c, Kyung-Ho Kim^d, and Hee-Jin Kim^e

Abstract

Objective: To elucidate relationships between the dental roots and surrounding tissues in order to prevent complications after placement of a miniscrew.

Materials and Methods: Twenty human mandibles and maxillas were used for this study. In the 200 sections of each mandible and maxilla, nine items were measured to investigate the relationships between the dental roots.

Results: The interroot distance increased from anterior to posterior teeth and from the cervical line to the root apex in both the maxilla and the mandible. In the maxilla, the greatest interroot distance was between the second premolar and the first molar. In the mandible, the greatest interroot distance was between the first and second molars. The maxillary buccolingual bone width exceeded 10 mm from 7 mm (between canine and first premolar), 5 mm (between second premolar and first molar), and 4 mm (between first and second molars) above the cervical line. The mandibular buccolingual bone width exceeded 10 mm from 7 mm (between second premolar and first molar) and 4 mm (between first and second molars) below the cervical line.

Conclusions: The safest zone for placement of a miniscrew in the maxilla was between the second premolar and the first molar, from 6 to 8 mm from the cervical line. The safest zone for placement of a miniscrew in the mandible was between the first and second molars, less than 5 mm from the cervical line.

Keywords: [Dental root](#), [Interroot distance](#), [Miniscrew](#), [Complication](#)

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^a Assistant Professor, Division of Anatomy and Developmental Biology, Department of Oral Biology, Oral Science Research Center, BK21 Project, Human Identification Research Center, Yonsei University, College of Dentistry, Seoul, Korea

^b Research Assistant, Division of Anatomy and Developmental Biology, Department of Oral Biology, Oral Science Research Center, BK21 Project, Yonsei University, College of Dentistry, Seoul, Korea

^c Adjunct Professor, Division of Anatomy and Developmental Biology, Department of Oral Biology, Oral Science Research Center, BK21 Project, Yonsei University, College of Dentistry, Seoul, Korea

^d Professor, Department of Orthodontics, Yonsei University, College of Dentistry, Seoul, Korea

^e Associate Professor, Division of Anatomy and Developmental Biology, Department of Oral Biology, Oral Science Research Center, BK21 Project, Human Identification Research Center, Yonsei University, College of Dentistry, Seoul, Korea



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