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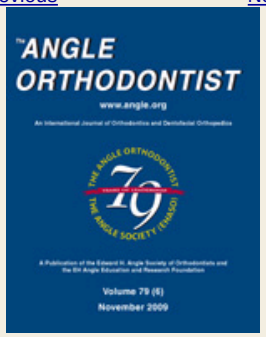

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Yoon-Goo Kang, Ji-Young Kim, Young-Jun Lee, Kyu-Rhim Chung, Young-Guk Park (*2009*) Stability of Mini-Screws Invading the Dental Roots and Their Impact on the Paradental Tissues in Beagles. The Angle Orthodontist: Vol. 79, No. 2, pp. 248-255.

Original Articles

Stability of Mini-Screws Invading the Dental Roots and Their Impact on the Paradental Tissues in Beagles

Yoon-Goo Kang[a], Ji-Young Kim[a], Young-Jun Lee[b], Kyu-Rhim Chung[c], and Young-Guk Park[d]

Abstract

Objective: To examine the stability of mini-screws that invade a dental root by measuring the retention period/failure rate, and to illustrate their effects on paradental tissues.

Materials and Methods: Three adult male beagle dogs received 48 orthodontic mini-screws. Half of the mini-screws were implanted to invade the roots, and the rest were placed in the middle of the alveolar bone. Half of the mini-screws were loaded immediately. The retention period of the mini-screws was documented. The dogs were euthanized after 8 weeks, and tissue samples were examined histologically.

Results: The failure rate of the mini-screws that invaded the roots was 79.2%, and that of the mini-screws in the middle of the alveolar bone was 8.3%. The application of force had little effect on the failed mini-screws. Moderately injured roots were repaired with osteoid and/or cementoid tissues with normal periodontal ligaments, followed by recovery of the original configuration.

Conclusion: Orthodontic mini-screws had a higher failure rate when placed to invade the dental roots. However, minimally damaged dental roots do not adversely affect the healing process. (*Angle Orthod.* 2009:79;)

Keywords: Mini-screw, Root damage, Root healing

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