

Author: [ADVANCED](#)

Volume Page

Keyword: [TOP](#) > [Available Issues](#) > [Table of Contents](#) > [Abstract](#)

ONLINE ISSN : 1881-1361

PRINT ISSN : 0287-4547

Dental Materials Journal

Vol. 28 (2009) , No. 4 p.477-486

[\[PDF \(4795K\)\]](#) [\[References\]](#)**Application of α -tricalcium phosphate coatings on titanium subperiosteal orthodontic implants reduces the time for absolute anchorage: a study using rabbit femora**[Ken NIWA](#)¹⁾, [Kiyotaka OGAWA](#)¹⁾, [Ken MIYAZAWA](#)¹⁾, [Taiju AOKI](#)¹⁾, [Tatsushi KAWAI](#)²⁾ and [Shigemi GOTO](#)¹⁾

1) Department of Orthodontics, School of Dentistry, Aichi-Gakuin University

2) Department Dental Materials Science, School of Dentistry, Aichi-Gakuin University

(Received October 8, 2008)

(Accepted February 2, 2009)

Abstract:

We are currently developing a small perforated titanium subperiosteal implant specifically for orthodontic therapy, which can be placed anywhere on the bone surface. In the present study, we coated this implant with hydroxyapatite (HA) or α -tricalcium phosphate (α -TCP) in an attempt to shorten the initial stabilization period relative to the few months that is usually required. The coated implants were placed beneath the periosteum in rabbit femora. The implants were observed by radiographically and histologically, and measured the tensile strength of the bone-implant interface.

Two weeks after placement, the volume of new bone formed in the perforations of the implant was significantly greater for the α -TCP-coated implants than for the HA-coated implants.

Our findings indicate that new bone is formed faster in the surrounding area with α -TCP- and HA-coated subperiosteal implants than with uncoated implants, and that α -TCP is a particularly effective stimulator of new bone formation.

Key words:[Orthodontics](#), [Subperiosteal implant](#), [\$\alpha\$ -tricalcium phosphate](#)[\[PDF \(4795K\)\]](#) [\[References\]](#)

To cite this article:

Ken NIWA, Kiyotaka OGAWA, Ken MIYAZAWA, Taiju AOKI, Tatsushi KAWAI and Shigemi GOTO. Application of α -tricalcium phosphate coatings on titanium subperiosteal orthodontic implants reduces the time for absolute anchorage: a study using rabbit femora . Dent. Mater. J. 2009; 28: 477-486 .

doi:10.4012/dmj.28.477

JOI JST.JSTAGE/dmj/28.477

Copyright (c) 2009 The Japanese Society for Dental Materials and Devices



[Japan Science and Technology Information Aggregator, Electronic](#)

