



Our Research is Your Success...

November  
2013

Published in:

# JOURNAL OF Periodontology

”

## Simplified Drilling Technique Does Not Decrease Dental Implant Osseointegration: A Preliminary Report \*

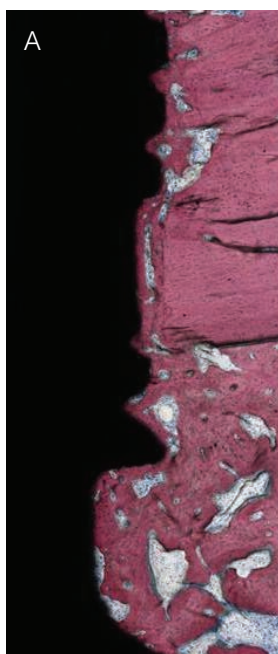
Ryo Jimbo, Gabriela Giro, Charles Marin, Rodrigo Granato, Marcelo Suzuki,  
Nick Tovar, Thomas Lilin, Malvin Janal and Paulo G. Coelho

\* Ryo Jimbo, Gabriela Giro, Charles Marin, Rodrigo Granato, Marcelo Suzuki, Nick Tovar, Thomas Lilin, Malvin Janal and Paulo G. Coelho. Simplified Drilling Technique Does Not Decrease Dental Implant Osseointegration: A Preliminary Report. J Periodontol 2013;84:1599-1605. Doi: 10.1902/jop.2012.120565



<sup>1</sup>Ryo Jimbo  
<sup>2</sup>Gabriela Giro  
<sup>3</sup>Charles Marin  
<sup>3</sup>Rodrigo Granato  
<sup>4</sup>Marcelo Suzuki  
<sup>2</sup>Nick Tovar  
<sup>5</sup>Thomas Lilin  
<sup>6</sup>Malvin Janal  
<sup>2</sup>Paulo G. Coelho

## “Simplified Drilling Technique Does Not Decrease Dental Implant Osseointegration: A Preliminary Report”



Histologic image from the current study, where no histomorphologic differences were observed between groups at 1, 3, and 5 weeks in vivo. A) 1 week.

### Authors' affiliations

<sup>1</sup>Department of Prosthodontics, Faculty of Odontology, Malmö University, Malmö, Sweden.

<sup>2</sup>Department of Biomaterials and Biomimetics, New York University, New York, NY.

<sup>3</sup>Department of Dentistry, Federal University of Santa Catarina, Florianópolis, SC, Brazil.

<sup>4</sup>Department of Prosthodontics, Tufts University School of Dental Medicine, Boston, MA.

<sup>5</sup>Department of Experimental Research, National Veterinary School of Alfort, Maisons-Alfort, France.

<sup>6</sup>Department of Epidemiology and Health Promotion, New York University.

## SUMMARY.

### Background

To date, some experimental studies have addressed the effect of bone drilling technique and sequence on dental implant osseointegration. In the present study, the authors hypothesize that there would be no differences in osseointegration when reducing the number of drills for osteotomy compared to the conventional drilling protocols.

### Methods

Seventy-two implants (diameters 3.75 mm and 4.2 mm;  $n = 36$  for each diameter) were bilaterally placed in the tibia of 18 beagles for 1, 3, and 5 weeks. Half of the implants of each diameter were placed using a simplified drilling procedure (pilot and final drill), and the other half were placed using a conventional drilling procedure (all drills in sequence). The retrieved samples were subjected to histologic and histomorphometric evaluation.

### Results

Histology showed that new bone formed around the implant, and inflammation or bone resorption was not evident for both groups. Histomorphometrically, the simplified group presented significantly higher bone-to-implant contact and bone area fraction occupancy compared to the conventional group after 1 week; however, no differences were detected at 3 and 5 weeks.

### Conclusions

Bone responses to the implant with the simplified protocol can be comparable to the conventional protocol.