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

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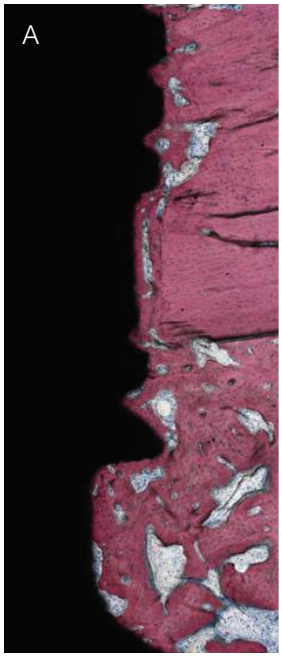
"Simplified Drilling Technique Does Not Decrease Dental Implant Osseointegration: A Preliminary Report"



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.

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 (SEVEN®, MIS Implants Technologies) (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.

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