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Crestal Bone Remodeling Around Implants Placed Using a Short Drilling Protocol”*

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SUMMARY.

Table. Marginal Bone Remodeling (in mm) Over Time with Standard and Short Drilling Protocols

	Visit (Months)	Mean \pm SD	Minimum	Maximum
Standard protocol	3	0.79 \pm 0.24	0.31	1.21
	6	0.91 \pm 0.36	0.43	1.79
	12	0.94 \pm 0.43	0.50	1.81
Short protocol	3	0.67 \pm 0.35	0.27	1.75
	6	0.87 \pm 0.39	0.40	1.93
	12	0.90 \pm 0.33	0.30	1.85

Purpose

The aim of the study was to examine the influence of a short drilling protocol on peri-implant crestal bone levels.

Materials and methods

Forty implants were placed in the posterior mandibles of 20 patients. The implants (C1 Implants, diameter, 4.2 mm; length, 10 to 11.5 mm) were inserted in pairs: one implant was inserted using the standard drilling protocol (five drills in sequence), while the other was inserted using the short drilling protocol sequence (three drills). All implants received healing abutments and were restored with single-unit restorations after 3 months of healing. Analysis of crestal bone level was based on radiographs taken at insertion and at 3, 6, and 12 months after insertion. The results were analyzed using software Image J 1.46r (National Institutes of Health). Crestal bone level was measured in millimeters at the distal aspect of each implant.

Results

None of the implants in either group was lost during the 12-month follow-up period, and all patients completed the follow-up examination. The drilling time for the insertion of one implant with the short drilling protocol was 1.03 ± 3.63 minutes compared to 1.57 ± 2.88 minutes for the standard protocol. The mean values of crestal bone loss at 12 months were 0.94 ± 0.43 mm for implants placed using the standard protocol and 0.90 ± 0.33 mm for implants placed using the short drilling protocol. No statistically significant differences were noted.

Conclusion

Using the short drilling protocol reduced the surgery time by approximately 50% and did not affect crestal bone remodeling during the first year postinsertion.

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