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Immediate and Delayed Restoration
of Dental Implants in Patients with a
History of Periodontitis: A Prospective
Evaluation up to 5 Years”*

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ABSTRACT.

Purpose

To evaluate the radiographic crestal bone level changes around immediately restored dental implants up to 5 years after insertion in patients with a history of periodontitis.

Materials and Methods

Patients previously treated for chronic periodontitis who required a fixed full-arch restoration for the maxilla or mandible or a fixed partial restoration in the esthetic zone were treated. Implant surgery included extraction of hopeless teeth, debridement around remaining adjacent teeth, and implant insertion guided by a surgical stent. A prefabricated screw-retained provisional restoration was immediately placed on selected implants. Periapical radiographs were taken at implant placement, 6 and 12 months postsurgery, and annually thereafter. The distance between the alveolar crest and the implant shoulder was measured at the mesial and distal aspects of each implant. Bone changes (BC) and annual rate of bone change (Rate) were calculated for the first year and the following 4 years.

Results

Total BC (mean \pm standard deviation) from baseline to 5 years (BC_{10-15}) was -1.41 ± 0.67 mm. First-year BC (BC_{10-11}) was -1.14 ± 0.86 mm, and BC in years 2 to 5 (BC_{11-15}) was -0.27 ± 0.69 mm. $Rate_{10-11}$ was -0.98 ± 0.79 mm/year and $rate_{11-15}$ was -0.06 ± 0.17 mm/year. Fifty-seven of 61 available implants met the criterion of cumulative bone loss of no more than 1.5 mm for the first year and 0.2 mm/year for the following years. Four implants (7%; 95% confidence interval: 0.4% to 13.6%) failed the criterion.

Conclusion

Dental implants in patients with a history of periodontitis showed radiographic bone changes similar to previous reports in the literature. After the first year, immediately restored implants exhibited crestal bone loss rates similar to those seen for conventionally restored implants.

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