and 15.3 months in single crowns, and more dramatic data were reported with even higher veneer failure rates of 41% to 53% after 12 and 13 months in implant-supported zirconia-based FDPs. However, no zirconia framework fractures were recorded in the two different types of restoration.[3] In the present study, four zirconia core fractures, five delaminations, and four chippings were found, often in combination with parafunctional habits. No correlations were found between mechanical failures and screw-retained or cement-retained restorations. In eight cases of failure, the antagonist tooth was restored with a ceramic-based implant not involved in the mechanical breakdown. A recent 5-year randomized controlled trial on single implants that compared zirconia and titanium abutments supporting zirconia and metal-ceramic crowns, respectively, showed no clinical differences between the two groups for estimated survival or technical and biologic complications.[5]

Conclusions

Currently, the short- to medium-term follow-up results of zirconia-based restorations supported by implants are promising, but there are limited clinical data. Failures were limited and occurred primarily in patients with parafunctions. More clinical data, including randomized controlled trials, are needed to assess the suitability of zirconia-based restorations instead of metal in implant dentistry.

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The authors reported no conflicts of interest related to this study.

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Literature Abstract

Predictors of alveolar process remodeling following ridge preservation in high-risk patients

The aim of this study was to evaluate the remodeling of alveolar bone in its horizontal dimension after a ridge-preservation procedure was carried out in patients with either incomplete buccal bone wall or thin- scalloped gingiva or both. Forty-two adult patients were included in the study and all were in need of a single implant in the anterior maxilla. All patients selected had incomplete buccal bone wall and/or including thin- scalloped gingival biotype. Teeth were atraumatically extracted and collagen-enriched bovine xenograft blocks were fashioned and fitted into the alveolus without usage of a membrane. Comparisons of the baseline versus 4 month post-operative measurements of the buccopalatal dimension of the alveolar process were made on occlusal digital slides superimposed over each other. The change was expressed as a percentage of baseline measurements. Mean alveolar process remodeling was 14%, signifying that shrinkage had occurred in all cases, however, all patients did not require any additional bone augmentation during subsequent implant placement. Central incisors and canines, teeth with abscesses, and buccal bone loss were found to be significant predictors for alveolar volume loss during remodeling. The authors acknowledged that this study faced certain limitations with regards to accuracy of measurements using superimposed clinical slides without histologic evidence and not being a randomized controlled trial. The results showed that volume loss occurs to an acceptable extent after ridge preservation and, in addition, tooth location, presence of infection, and buccal bone loss are significant predictors of remodeling.

Cosyn J, Cleymaet R, De Bruyn H. *Clin Implant Dent Relat Res* 2014 July 17. doi: 10.1111/cid.12249. **References:** 28. **Reprints:** Prof Jan Cosyn, Faculty of Medicine and Health Sciences, Dental School, Department of Periodontology and Oral Implantology, University of Ghent, De Pintelaan 185, Ghent B-9000, Belgium. Email: jan.cosyn@ugent.be—*Debbie P.M. Hong, Singapore*