

Martin Freilich, D.D.S

Title

OSTEOPOROSIS AND BONE AUGMENTATION/IMPLANT OUTCOMES:
AN OBSERVATIONAL STUDY

Background:

The purpose of this “best practice” study was to generate an estimate of the success of dental implant placement and bone augmentation in women with normal to osteoporotic bone density.

Methods:

The 86 women in this analysis represent the first participants to have reached nine-month post-operative follow-up from a total of 116 participants enrolled in this ongoing descriptive, “best clinical practice” descriptive study. Implant placement with bone augmentation was performed for all patients across the spectrum of bone health. Outcome assessments include success over time, soft tissue inflammation, prosthetic outcomes, resonance frequency analysis (RFA) and bone volume assessment with ConeBeamCT radiography.

Results:

71% of participants were osteopenic/osteoporotic. All implants were in function at 9 months with 78% demonstrating minimal change in bone levels. Overall, successful bone augmentation was observed for 100% of cases. Mean RFA of 65.8 ± 10.8 at implant placement improved to 74.9 ± 8.6 ($p < 0.05$) at 8 weeks post-surgery demonstrating early integration. There was a significant inverse relationship between sCTX (bone resorption turnover marker is decreased) at 8 weeks and ISQ (which is increased) at 8 weeks for those provided a particulate graft or expansion procedure and who had a history of oral bisphosphonate exposure ($\rho = -.53$, $p = .01$). For those in the particulate graft or expansion group with normal bone health, there was a significant correlation between P1NP (low turnover) at 8 weeks and decreased loss of bone height at the buccal aspect of the implant at 9 months ($\rho = -.58$, $p = .048$).

Conclusion: Bone augmentation and implant placement is highly successful in the short term for postmenopausal women across all levels of bone health.

Clinical Implications: “Standard of care” bone augmentation procedures should be successful for patients diagnosed with osteoporosis and osteopenia, but longer-term assessments are needed to confirm positive outcomes for this ever-increasing population

Biography:

MARTIN FREILICH, D.D.S.

Dr. Freilich is a Professor in the Department of Reconstructive Sciences at the University of Connecticut School of Dental Medicine. He has been actively treating patients,

teaching and conducting research since joining the University in 1985. He is responsible for supervising pre-prosthetic / implant surgery in the division of Prosthodontics. He also serves as the principal investigator of a research program developing an implant system to guide new vertical bone growth; and serves as the principal investigator of a large NIH funded clinical trial studying the relationship between osteoporosis and bone augmentation in the jaws. Dr. Freilich has written many scientific articles, review articles and book chapters. In addition to his receipt of patents related to dental biomaterials, he has patents related to the regeneration of bone and implant dentistry.

Appointment

Professor in the Department of Reconstructive Sciences, University of Connecticut School of Dental Medicine

Education

DDS Georgetown University School of Dentistry
Specialty Certificates in Prosthodontics and Periodontics from the Medical College of Georgia

Fellowship

International Team for Implantology
Associate Fellow Academy of Prosthodontics

Awards

Kaiser-Permanente Award for Outstanding Clinical Teacher, 1990
Kaiser-Permanente Award for Excellence in Clinical Teaching, 1991
Kaiser-Permanente Award for Outstanding Clinical Teacher, 2002

Academy of Prosthodontics 2015

"OSTEOPOROSIS AND BONE AUGMENTATION/IMPLANT OUTCOMES: AN OBSERVATIONAL STUDY"

The objective of this presentation is to describe a clinical study evaluating the success of implant placement and bone augmentation in post menopausal women. This talk will describe the following:

- 1) Prior knowledge of systemic bone compromise and implant placement
- 2) The relationship between markers of bone turnover and surgical outcomes
- 3) The use of CBCT to evaluate implant placement and bone augmentation