

Influence of implant length on implant primary and secondary stability

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Abstract

Introduction: Implant stability can be measured at the moment of implant placement or once the osseointegration process is in progress. Many factors should be considered, including bone quality, osteotomy preparation, implant design, implant surface enhancement, and implant length and diameter. Objective: Determine the influence of implant length on primary and secondary stability in type II and type III bones using resonance frequency analysis method. Methods: A prospective study was conducted in the department of Oral maxillofacial Implantology at the School of Dentistry of the University of Chile between April 2006 and June 2007. 38 screw type implants were placed in the maxilla and mandible, in type II and type III bones. 21 implants had an average contact area of 237 mm² including 2 sizes (3.75mm and a length of 13mm and 15mm) and 17 implants had an average contact area of 129 mm² (diameter of 3.75mm and a length of 7mm). Implant primary stability was measured by the Implant Stability Quotient value. Resonance frequency measurements were recorded using Osstell™ Mentor. Secondary implant stability was recorded between 4 to 6 months after the implant placement. Results: For implants with an average contact area of 237 mm² the stability 1 average value was 71,37 and the stability 2 average value was 66,6. For implants with an average contact area of 129 mm² the stability 1 average value was 67,47 and the stability 2 average value was 68,08. Conclusion: Implant length does not influence primary and secondary stability in type II and type III bones. © 2022, Editorial Ciencias Medicas. All rights reserved.

Author keywords

dental implants; implant length; primary stability