Prospective Evaluation of Synchronized Threaded, Grit-blasted and Acid-etched Root-analog Implants

Introduction

The FRALITI-2 Synchro Stepped Screw represents a further development of the FRALITI-2 conventional stepped screw and has been available since its introduction in 1999. Its synchronized thread design and sharper thread profile offers improved self-drilling performance in dense cortical bone and less torque for seating with higher primary stability. The surface morphology of the FRALITI-2 Synchro implant can be divided into four sections: the top has a mechanized offer to allow for bony ingrowth; the middle section has a solely acid-etched microstructure for connective tissue attachment. The implant/ring section is provided with a grit-blasted and acid-etched FRADENT DPS (Deep Profile Surface). Long term studies from Gehre et al. and Kunzmann et al. revealed cumulative survival rates for all FRALITI-2 screw implants of 97% and for their prosthetic restorations of 96%. The purpose of this prospective study was to report the clinical experience and results of using the FRALITI-2 Synchro Stepped Screw for single-tooth replacement and partially edentulous jaws. In addition, the incidence and the types of prosthetic complications encountered were also subjected to assessment.

Methods

The survival rate of FRALITI-2 Synchro Screws for single-tooth replacement and implant-supported bridges and related restorative procedures were evaluated. 13 partially edentulous men (7) and women (6), (10 to 72 years old [mean 39 years]) were recorded for this 25-month period. All patients were provided with implant-supported single-tooth- or bridge restorations. A total of 27 FRALITI-2 Synchro implants (FRADENT GmbH, Mannheim) were placed in the mandible and maxilla of 15 patients. Ecology of bone loss was evaluated. Radiographs, pocket depths, plaque and bleeding indices of adjacent teeth were taken pre- and post-op. Bone quality, quantity and detect status were recorded and classified. All data of patients treated between March 1999 and February 2001 are presented.

Results / Conclusions

In average, 180 days (min 105/ max 525) were recorded between implant insertion and prosthetic delivery. Different prosthetic and occlusal materials (Gold ceram/ gold & ceramic) were used and evaluated according to the type of prosthesis. No implants failed or were removed prior to abutment connection, resulting in an overall survival rate of 100% within 22 months. Periodontal and radiographic measures demonstrate negligible loss of attachment or bone surrounding the implants up to 14 months after abutment connection. No abutment loosening or other prosthetic complications have been detected. FRALITI-2 prosthetic components compensate axial divergences in the maxilla and the internal hexagonal implant-abutment connection considerably reduces the problem of screw loosening.

Related Medical Concerns

Implant Specifications and Time Frames for Treatment

Implant Site Specifications and Pre-operative Situation

Occlusion and Prosthetics

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References


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