Abstract

This prospective clinical study compares different implant-abutment designs by evaluating x-ray measurements at different treatment times. To ensure comparable clinical situations only implants in healthy patients with sufficient bone at the implant site were included. All implants have been restored with cemented single crowns. In all cases the antagonist is either a natural tooth or a fixed prosthesis.

X-rays of Camlog Screw Line implants (Camlog Biotechnologies AG, Winsheim, Germany) with the PromatXF-surface (CSLP), AstraTech Implants (AstraTech Dental, Västerås, Sweden) with OsseoSpeedTM-surface (ATOS) and biotite (CSLP) implants with osseo connect surface (ocs) (biodent medical, Senden, Germany) in combination with the platform switched SKY esthetic line abutments (BSEA) have been analysed. In total 54 implants (22 CSLP, 19 ATOS, 13 BSEA) have been inserted and after a subgingival healing period of 3 to 6 months they have been restored with cemented metal ceramic single crowns.

The following material has been used to process the X-rays: Gendex Oralix Imaging Plates Size 2 with the dimension 31 x 41mm (Gendex Dentsply). The Imaging Plates have been processed with DenOptix (Dentsply International, Gendex X-ray Division, Des Plaines, Illinois, USA). Bitewing holder KWIK-BITE (Hawe Neos) for the different areas in the mouth. The imaging plates have been processed with the X-ray monitor Medion MD 9323 AJ.

Methods and Materials

Results

The documented bone resorption around each implant has been calculated by subtraction of the measured bone levels at the different treatment times. If different values for mesial and distal bone resorption have been found, then always the higher value has been used. All measurements, evaluations and calibrations as well as the surgical and prosthetic procedures were done by the first author.

The statistical analysis has been done with SPSS-program. The significance of the results has been proven with ONEWAY ANOVA analysis on p<0.01 or p<0.05 for the different implant systems after Bonferroni.


Conclusions

This study shows that the design of the implant-abutment-complex has an influence on the periimplant bone reaction. The effect of the micro textured implant-collar-design seems to have an important role for the bone attachment. According to the results of this study the platform switch has also a very positive effect on the bone attachment independent from the implant-abutment-connection.

References


