Material and Methods

• In this retrospective study, the charts of patients who had received implants between years 2000 and 2011 were reviewed.
• Data from patients who had received at least one Brånemark System (Mk III or Mk IV) implant with a TiUnite surface were selected, de-identified, and used for statistical analysis.
• The implant survival rate was calculated on implant- and patient-level.
• The marginal bone remodeling was calculated for paired radiographs. Radiographs taken at implant insertion were used as a baseline for bone remodeling calculations.
• For each implant, two marginal bone level values were recorded: one at insertion, and one at last follow-up. Thus 4 follow-up cohorts were established: baseline to 4-6 years, baseline to 6-8 years, baseline to 8-10 years, and baseline to 10-13 years of follow-up.
• De-identified radiographs were analyzed by an independent radiologist in Gothenburg (Sweden). For statistical analysis, the radiographs were clustered into time intervals.
• The marginal bone remodeling was calculated for paired radiographs. Radiographs taken at implant insertion were used as a baseline for bone remodeling calculations.
• For each implant, two marginal bone level values were recorded: one at insertion, and one at last follow-up. Thus 4 follow-up cohorts were established: baseline to 4-6 years, baseline to 6-8 years, baseline to 8-10 years, and baseline to 10-13 years of follow-up.
• Descriptive statistics were used to evaluate bone remodeling for each cohort.

Results

• Overall, data for 195 Brånemark System implants with an oxidized surface (96.4% Mk III, 3.6% Mk IV) placed in 60 patients were included in the analysis. The mean follow-up period was 7.5 years (range 0.6–12.1 years).
• 33.3% of the implants were used for single tooth restorations, 60% were used for partial restorations, and 6.7% were used for full arch restorations.
• Implants were placed in either a one-stage (n=180) or a two-stage (n=17) surgical procedure.
• 12 implants were loaded immediately after 2 years of function and the remaining 183 implants were loaded after a healing phase of 3-6 months.
• The implant survival rate after up to 12 years of function was 99.0% on implant level and 96.7% on patient level.
• Implant stability was excellent in 99.5% of the cases.
• As of last follow-up, no plaque was present at 66 implants (33.8%).
• The mean marginal bone remodeling remained low for all time intervals (Table 1).

Conclusions

The results from this long-term retrospective investigation show that Brånemark System implants with TiUnite surface are a safe and reliable option with high implant survival rates and low bone remodeling.

References


Table 1: Marginal bone remodeling.

<table>
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<td>(Baseline to 4-6 years follow-up)</td>
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<td>(Baseline to 8-10 years follow-up)</td>
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<td>Median</td>
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