

ABSTRACT OF DISSERTATION

Title	Radiographic investigation of the marginal bone loss on dental implants: a retrospective cohort study (歯科インプラント周囲の骨吸収に関する臨床疫学研究)
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<p>Background: During functional loading, the design of the implant may have an effect on the response of marginal bone.</p> <p>Objectives: The purpose of this study was to report the prevalence of peri-implantitis, and to compare radiographic parameters around Brånemark and Replace Select dental implants and evaluate whether disparities in the morphologic features of these two indistinct implant systems, particularly their abutment-implant attachment, had an influence on the health of surrounding tissues and marginal bone loss (MBL).</p> <p>Materials and Methods: Collection of data was done at the Department of Fixed Prosthodontics, the Department of Maxillo-Facial Prosthodontics, and Oral Implant Center of Tokushima University Hospital, in Tokushima, Japan; between March 2003 and followed until January 2017. Patients who have been treated with the Replace Select internal type implant and the Brånemark variety were selected as cohort. Marginal bone level measurements were evaluated via periapical and panoramic radiographs taken at regular follow-up visit. These dimensions were calculated, starting from the orientation mark at the implant abutment interface to the bottommost perceived contact area of marginal bone with the aforementioned implant system. The change in the level of bone was estimated by calculating the variation involving an initial reference value and the follow-up values.</p> <p>Results: An average loss of bone at 0.65 ± 1.51 mm (range 7.89 to 2.21 mm) in the Replace Select group was observed, while in the Brånemark group 0.7 ± 1.32 mm (range 8.6 to 2.6 mm) was observed. Spearman rank correlation exhibited a statistically significant positive correlation between progress of bone loss around</p>	

dental implant and interval from implantation in the Brånemark group, whereas in the Replace Select group it was not significant. The Brånemark group exhibited significant ($P = 0.0269$) negative correlation of MBL and its diameters, whereas the Replace Select group did not exhibit such correlation.

Conclusion: Within the limits of this study, it can be concluded that deviations in the morphologic attributes of these two diverse implant systems had an influence on the health of surrounding tissues and MBL. The Brånemark implants showed a significant increase in MBL ($> 1.8\text{mm}$) as the time of placement elapses. This marked MBL is greater in females than males, in posterior than in anterior, and in the narrow platform implants than the regular platform implants or the wide platform implants. On the other hand, results suggest that this bone loss is greater in the mandible than the maxilla, in single-unit implant crowns than multiple implant restorations in the Replace Select group.