Prevalence, extent and severity of peri-implantitis

Akademisk avhandling

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av

Christer Fransson

Leg. tandläkare

Fakultetsopponent:

Professor Stefan Renvert, sektionen för hälsa och samhälle
Högskolan i Kristianstad
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II. Fransson, C., Wennström, J., Berglundh, T. (2008) Clinical characteristics at implants with a history of progressive bone loss. *Clinical Oral Implants Research* **19**: 142-147.

III. Fransson, C., Wennström, J., Tomasi, C., Berglundh, T. (2009) Extent of peri-implantitis-associated bone loss. *Journal of Clinical Periodontology* **36**: 357-363.

IV. Fransson, C., Tomasi, C., Sundén Pikner, S., Gröndahl, K., Wennström, J., Leyland, A.H., Berglundh, T. Severity and pattern of peri-implantitis-associated bone loss. Submitted to *Journal of Clinical Periodontology*.

UNIVERSITY OF GOTHENBURG

Abstract

Prevalence, extent and severity of peri-implantitis

Christer Fransson
Department of Periodontology, Institute of Odontology, the Sahlgrenska Academy at University of Gothenburg, Box 450, 405 30 Göteborg, Sweden.

Peri-implantitis is a disorder that affects the tissues surrounding a functional implant. Peri-implantitis can lead to implant loss and impaired function. There is limited information regarding the prevalence of peri-implantitis. In addition the extent of the disease and pattern of bone loss are poorly described.

The objective of the present series of studies was to assess the prevalence of subjects exhibiting progressive bone loss at implants supporting fixed prosthesis (Study I) and to examine the clinical characteristics at implants with radiographic evidence of progressive bone loss (Study II). Furthermore, the extent, severity and pattern of peri-implantitis-associated bone loss were evaluated (Study III and Study IV).

Bone-level assessments were performed in intra-oral radiographs and the clinical conditions of the peri-implant tissues were examined. A multilevel *growth curve* model was used to analyze the pattern of bone loss.

It was demonstrated that 28% of subjects had one or more implants with progressive bone loss. The individuals in this group carried a significantly larger number of implants than the subjects in whom no implants with progressive loss were detected (6.0 vs. 4.8). Out of the total 3413 implants included in the study 12.4 percent demonstrated progressive bone loss (Study I).
Clinical signs of pathology were more frequent at implants with than without progressive bone loss. Smokers had larger numbers of affected implants than non-smokers and the proportion of affected implants that exhibited pus and PPD ≥ 6 mm was higher in smokers than in non-smokers. The findings of pus, recession and PPD ≥ 6mm at an implant in a smoking subject had a 69% accuracy in identifying history of progressive bone loss (Study II).
About 40% of the implants in each affected subject had peri-implantitis. The proportion of such implants varied between 30 and 52% in different jaw positions. The most common position was the lower front region. (Study III).
The average bone loss after the first year of function at the affected implants was 1.65 mm and 32% of the implants demonstrated bone loss ≥ 2 mm. The bone loss showed a non-linear pattern and the rate of bone loss increased over time (Study IV).

Key words: bone loss, complications, dental implants, implant position, human, multilevel analyses, peri-implantitis, radiographs, smoking.

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