

THE INFLUENCE OF REHABILITATION CHARACTERISTICS IN THE INCIDENCE OF PERI-IMPLANT PATHOLOGY: A CASE-CONTROL STUDY

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PURPOSE

To investigate the influence of rehabilitation characteristics in the incidence of peri-implant pathology (P-iP).

MATERIALS AND METHODS

A total of 1350 patients (270 with P-iP matched for age, gender, and time of follow-up with 1080 controls without P-iP) rehabilitated with dental implants were included. The effect of the independent variables [Implant length in millimeters (IL); implant diameter in millimeters; implant surface (IS); presence of cantilevers; implant:crown ratio (ICR), type of abutment (TA); abutment height; fracture of prosthetic components (FPCs); type of prosthetic reconstruction (TPR); type of material used in the prosthesis (TMUP); loosening of prosthetic components (LPCs); and passive misfit (PM) diagnosed within the previous year] was evaluated through bivariate analysis (chi-square), with level of significance of 5%. Crude odds ratios (OR) with 95% confidence intervals and the attributable fraction (AF) were calculated for the independent variables individually identified as factors associated with the incidence of peri-implant pathology.

RESULTS

The following variables were identified as risk factors: machined IS ($p = 0.015$; OR = 1.46), 17° TA ($p = 0.000$; OR = 3.06), completely edentulous TPR ($p = 0.000$; OR = 2.49), TMUP ($p = 0.000$; metal-acrylic OR = 2.29; acrylic OR = 4.90; metal-ceramic OR = 8.43), 1:1 ICR ($p = 0.002$; OR = 1.54), FPC ($p = 0.000$; OR = 3.01), LPC ($p = 0.000$; OR = 4.15), and PM ($p = 0.002$; OR = 20.36). The attributable fraction rendered the following theoretical potential reductions in the

cases if the exposure to the variables was removed: IS (31.5%), TA (67.3%), TMUP (5.4% to 73.3%), ICR (35%), FPC (66.8%), LPC (73.8%), and PM (95.1%).

CONCLUSIONS

Within the limitations of this study, machined implant surfaces, 17° abutments, completely edentulous reconstructions, the type of metal used in the prosthesis, 1:1 implant:crown ratio, fracture of prosthetic components, loosening of prosthetic components, and passive misfit emerged as risk factors for the incidence of P-iP. Eliminating the exposure to these variables would, in theory, result in a significant reduction in the incidence of P-iP.