The incidence of marginal bone loss and failure rate of MIS internal hex implants bearing different types of prosthesis.

- A Long-term retrospective analysis.

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The incidence of marginal bone loss and failure rate of MIS internal hex implants bearing different types of prosthesis. - A Long-term retrospective analysis.

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Aim of study
The aim of the study was to retrospectively evaluate the success rate of internal hex implants (MIS implants), installed in a prospective longitudinal study to construct a multiwalled crown with cemented bone-dense and formerly done bone loss and differently proposed predictions (i.e., smoking habits, type of abutments, type of prosthesis, etc.).

Materials and methods
Patients treated at private clinics (PE) with oral implants were included in this patient's age. The study included a full record of their health condition, habits, state of the prosthesis, appliance and their treatment time line. Only patients who had completed more than 30 months of follow-up time were included in this study. Collected data included information on patient's smoking habits, their type of implant, and the prostheses constructed using them (i.e., cemented crown to tooth fixation, etc.). Type of abutments used (implant or abutments), time of implant installation (immediate or early) length of follow-up (months) and number of implants per patient were also used to evaluate the rate of the prosthesis and was used to measure the amount of residual bone loss around each implant. The actual bone loss was calculated using the formula (Fig. 1).

Statistical analysis
Descriptive statistics were used to report the success rates of the implants. Two different approaches were engaged to analyze the correlation between residual bone loss and some of the variables. In one, each patient's mean residual bone loss was used as a unit of analysis, and in the other, the same implant bone loss serves for the analysis. Linear regression and ANOVA were used for testing the difference between expected variables and residual bone loss.

Results
One hundred and sixty implants installed in 48 patients were evaluated, having between thirty months and five years of follow-up time. Five (20%) implants failed and their failure rates were removed prior to the prosthesis phase event. A score was used to rate patients with failure. The rate correlation between residual bone loss and type of implant was found to be correlated with a failure event. The patients' average calculated bone loss was 2.66% having an average of 1.95 teeth exposed. Smoking was the only predictor that was found to be correlated with higher bone loss when data was calculated using the patient as the unit of analysis.

Neither time, nor any of the other variables were found to be correlated with higher bone loss. Patients with a score of 5 were found correlated with lower bone loss (p=0.05).

By evaluating the data with the angle implant serving as the unit of analysis, time of failure (T=0.02), smoking and presence of resorbable were found to be statistically significant predictors of bone loss.

Conclusions
The results of the present study confirm that MIS internal hex implants exhibit an overall success rate of 95% after a long-term follow-up period. By evaluating the data with the patient serving as the unit of analysis, smoking was the only predictor that was found to be statistically significant predictors of bone loss.

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