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In the present retrospective study periimplant bone loss of 57 patients (173 implants) was examined on orthopantomograms using digital software. Measurements of bone level performed twice mesial and distal of all implants immediately after insertion and after restauration with various superstructures. The observation period for the second measurement was between 18 and 78 month. The results of the radiographic evaluation demonstrated that bone loss was significantly affected on different superstructures.

Single-implant restorations revealed significantly less bone loss compared to bridge and bar reconstructions. Implants restored with bar reconstructions demonstrated higher bone loss as bridge reconstructions. Nevertheless, this difference was not statistically significant.

The difference between total bone loss and bone loss at the implant surface are dependent on the insertion depth of the implants. Regarding bone loss at the implant, no significant difference between subcrestal and equicrestal insertion was observed. In contrast, total bone loss was significantly affected by implant depth.

Moreover, a correlation between higher implant diameter and less bone loss was detected whereas no correlation between bone loss was not significantly affected by plaque or gingivitis. A slow progressive bone loss at all implants was demonstrated during the study.