

Long-term follow-up of immediately loaded implants in completely edentulous jaws

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Aim: To evaluate up to 4 years implant survival, radiographical bone-to-implant contact level and prosthetic complications of immediately functionally loaded implants restored with provisional prostheses.

Material and methods: Full medical records including dental radiographs of in total 798 implants (Osseotite implants Biomet 3i, Palm Beach, FL, USA) installed in 83 patients were retrospectively examined. All patients were restored with semi-permanent provisional acrylic restorations within 3 days of surgery. Bone-to-implant contact, implant losses and prosthetic complications were registered.

Results: In total 42 implants were sleeping and not included in the bone-to-implant evaluation. In the maxilla implant failure was 11/343 (3.2%) and mean bone loss was after 1, 2, 3, 4 years resp. 1.4 mm, 1.6 mm, 1.7 mm, 1.9 mm. In the mandible implant failure is 5/414 (1.2%) and mean bone loss was after 1, 2, 3, 4 years resp. 1.2, 1.5, 1.4, 1.5 mm. Wilcoxon signed rank test, performed on implant level, indicated statistically significant bone loss until 4 years after loading in both jaws. On 25% of the implants prosthetic material damage, fractures and regular technical repairs were needed but this did not affect implant survival.

Conclusion: The implants functioned very well under immediate loading as reflected by failure rates below 3% in both jaws. Acceptable mean bone values were scored according to the success criteria described by Albrektsson and Isidor (1994). The excessive rate of prosthetic complications are probably due to the fact that the provisional prosthesis was kept unchanged for reasons of cost reduction. The acrylic material is more prone to damage and a cost-benefit analysis on long-term is needed before this prosthetic protocol can be advocated for general use.

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