

Immediate loading with complete implant-supported restorations in an edentulous heavy smoker: histologic and histomorphometric analyses.

Romanos GE, Johansson CB.

Department of Implant Dentistry, New York University College of Dentistry, New York, New York 10010, USA. gr42@nyu.edu

Abstract

The clinical case presented is that of an edentulous female patient, a heavy smoker, who received implant-supported complete restorations in the maxilla and mandible using the immediate loading concept according to the Ankylos implant system. The patient received 12 commercially pure titanium (grade 2) Ankylos implants, 6 in the maxilla and 6 in the mandible. The implants were loaded immediately after surgery with temporary acrylic resin prostheses fabricated chairside using a prefabricated customized splint. The definitive ceramometal restorations were seated 4 months after surgery. Clinical and radiologic evaluation at 7 months after implant placement indicated functional bone anchorage of all implants, despite the patient being a smoker and having poor bone quality. The patient died 7 months after implant placement because of lung cancer; however, there was no known disease at the time of implant placement. After her death, the implants with the surrounding tissues were removed en bloc and examined histologically and histomorphometrically using undecalcified cut and ground sections. All implants were osseointegrated to some extent and surrounded by lamellar bone. However, around the upper, nonthreaded parts of the implants, much of the bone had been resorbed. In this region, fibrous connective tissue was in close contact with the titanium surface. Epithelial proliferation with pocket formation could not be observed in any of the implants. The histomorphometric evaluation of bone-implant contact in threads demonstrated a mean of approximately 51% of the available surface and a mean bone volume of approximately 52%, with a tendency toward greater contact and volume around the implants in the maxilla. If the nonthreaded cylindrical portions of the implants were included, mean bone-implant contact was 46% and mean bone volume was 47%.

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