

## A TECHNIQUE FOR AN ACCELERATED RIGID SPLINTING OF MULTIPLE IMPLANTS FOR IMMEDIATE LOADING

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Different protocols have been developed in case of immediate loading for a full arch replacement. Several reports show that a syncrystallization - welded framework exhibits a more precise fit than a one-piece casting. The intra-oral syncrystallization welding technology can not only create a passive-fitting implant prosthesis, but also pre-fabricate implant components, including titanium bars and attachments, and can be syncrystallization-assembled directly on the master cast. This article describes a technique developed to fabricate an immediately loaded prosthesis using syncrystallization a new component for welding a passive-fitting implant prosthesis. The aim of this article was to describe a technique developed for an accelerated rigid splinting of multiple implants for same-day immediate loading with metal-reinforced provisional restorations using a technique of welding temporary implant abutments with a prefabricated titanium connection tab directly performed in the oral cavity. Between June 2009 and July 2011, immediate loading of threaded implants with a metal-reinforced acrylic resin provisional restoration at stage 1 surgery was evaluated in 22 consecutive patients. A total of 232 implants were placed in selected edentulous patients using the syncrystallization technique. All of the 232 rigidly temporized immediately loaded implants were osseointegrated. An implant success rate of 100% was achieved over a period of 6 months postplacement. No fracture or luting cement failure of the provisional restoration occurred during the observation time. The technique allows for a highly accurate, passively fitting prosthesis in only 6 hours with excellent patient satisfaction.

Although traditional implant supported prostheses is a standard of care for edentulous patients (1-3) an increasing interest has been noticed in immediate loading of implants and esthetic replacement of missing teeth. Different protocols have been developed in case of immediate loading for a full arch replacement. The advantages of an immediately loaded implant-supported prostheses are: reduced surgical and prosthetic visits, improved patient's comfort and delivery of a functional prostheses immediately after surgery (4, 5). On the other hand, the immediate exposure of the implants to occlusal and muscular forces may lead to implant micro movements and finally to an early implant failure (6, 7). However, clinical and experimental animal trials demonstrated that long-term success of removable and fixed prostheses of immediately loaded implants can be achieved. Degidi

et.al (8) demonstrated comparable outcomes of a 7 year follow up study of immediately loaded implants compared to delayed one. A successful rehabilitation of immediate loading implants depends on several factors: accurate presurgical diagnostic, treatment planning, rigid splinting of the implants and fixed provisional restorations that are of utmost importance to prevent the risk of micro movements related to the surrounding bone. It has been suggested that a movement of 30  $\mu\text{m}$  or less has no adverse effect on integration, while a movement of 150  $\mu\text{m}$  or more results on fibro encapsulation to the implant (7, 9, 10). Rigid splinting has shown the ability to keep the stability of the prosthetic restoration and the micromovements below the critical threshold.

Different techniques has been described to increase the immediately lading implant predictability as: bar-

*Key Words: immediate loading, titanium hub, connection tab, intra-oral weld.*

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