Tommaso Grandi, Paolo Guazzi, Rawad Samarani, Giovanni Grandi

Immediate provisionalisation of single post-extractive implants versus implants placed in healed sites in the anterior maxilla: 1-year results from a multicentre controlled cohort study

Tommaso Grandi, DDS
Department of Integrated Activities of Specialized Head-Neck Surgery, University of Modena and Reggio Emilia, Modena, Italy

Paolo Guazzi, DDS
Private practice, Modena, Italy

Rawad Samarani, DCD, DES
Assistant, Department of Periodontology, Saint-Joseph University, Beirut, Lebanon

Giovanni Grandi, MDS
University of Modena and Reggio Emilia, Modena, Italy

Correspondence to:
Tommaso Grandi
Via Rua Muro 96
41121 Modena, Italy
Tel: 00393337095223
Email: tommy.gr@tiscali.it

Key words *delayed implants, immediate loading, post-extractive, single-tooth replacement*

Purpose: The purpose of the study was to compare the clinical and aesthetic outcome of single post-extractive implants versus implants placed in a preserved socket after 4 months of healing in the anterior maxilla. All of the implants were immediately non-occlusally loaded.
Materials and methods: A total of 50 patients were treated in the two groups of study. The Delayed Group had a maxillary tooth (premolar, canine, lateral or central incisor) removed, with immediate socket grafting, followed by implant placement and provisionalisation 4 months later. The Immediate Group had immediate implant placement and provisionalisation. Outcome measures were implant failures, biological and biomechanical complications, peri-implant radiographic bone level changes, and gingival aesthetics.
Results: At the 12-month follow-up, two implants failed in the Immediate Group (8%) versus one in the Delayed Group (4%), with a comparable rate of implant failure ($P = 0.55$). No complications occurred for either group. The 12-month peri-implant bone resorption was similar in both groups ($P = 0.23$): 0.71 mm (95% CI 0.45, 0.97) in the Immediate Group versus 0.60 mm (95% CI 0.38, 0.82) in the Delayed Group. The mean difference in bone resorption was 0.13 mm (95% CI -0.21, 0.47). An ideal gingival marginal level was reached most frequently in the Delayed Group (83.3% versus 52.1%, $P = 0.04$). Rates of full closure of the papilla were similar between the two groups (82.6% for the Immediate Group versus 62.5% for the Delayed Group, $P = 0.12$).
Conclusions: Given the limitation that this was not a randomised controlled trial, there were no differences in complications or crestal bone response at immediate post-extractive implants when compared to delayed implants. A delayed protocol might be considered in the aesthetic zone due to the gingival recession that occurs after post-extractive implant placement.

Conflict-of-interest statement: *Dr Tommaso Grandi and Dr Paolo Guazzi serve as consultants for JDentalCare. This study was completely self-financed and no funding was sought or obtained, not even in the form of free materials.*

Introduction

Immediate loading/temporisation of implants finds its main indication in the anterior maxilla where the demand is dictated by the patient's aesthetic and psychological needs. The current state of knowledge suggests that immediate loading *per se* does not prevent successful osseointegration, provided that micromovement at the bone–implant interface is closely monitored[1]. To contain micromovement, it