



Immediate, immediate-delayed (6 weeks) and delayed (4 months) post-extractive single implants: 4-month post-loading data from a randomised controlled trial

ABSTRACT

The aim of this study was to compare the clinical outcome of single implants placed immediately after tooth extraction with an immediate approach (70 patients), an immediate-delayed placement approach (implants placed 6 weeks after tooth extraction - 70 patients), and with a delayed placement approach (implants placed after 4 months of extraction and socket healing - 70 patients). After implant placement and the measurement of the gap between the bony wall and the neck of the implant with a periodontal probe, the operator reconstructed all poorly preserved sockets and partially preserved sockets in the aesthetic areas with a bone substitute. The bone substitute used was a sticky paste made of 600 to 1000 µm pre-hydrated collagenated cortico-cancellous granules of porcine origin, properly mixed with collagen gel in a sterile syringe (OsteoBiol® mp3®, Tecnos®, Giaveno, Italy). The grafted area was then covered with a resorbable membrane derived from equine pericardium (OsteoBiol® Evolution, Tecnos®). The membrane was trimmed and adapted to cover the entire socket and at least 2 mm of the surrounding crestal bone, and fixed using titanium tacks.

Implants inserted with at least 25 Ncm torque were left to heal unloaded for 4 months, whereas those inserted with less than 25 Ncm were left to heal unloaded for 6 months. Temporary crowns were delivered and were to be replaced by definitive ones after 4 months. Outcome measures were crown and implant failures, complications, peri-implant marginal bone level changes, aesthetics and patient satisfaction.

No statistically significant differences for failures, complications and patient satisfaction were observed when placing single implants immediately, 6 weeks or 4 months after tooth extraction; nevertheless failures and complications were more frequent for immediate and immediate-delayed placed implants. Bone level changes were similar between the different procedures, but the aesthetics showed better results for immediate and immediate-delayed implants.

CONCLUSIONS

When interpreting the results of this study, the Authors recommend to take into consideration that immediate and immediate-delayed post-extractive implant sites were augmented. As they underline, *“it is known that site preservation procedures are able to preserve the dimension of the site better compared to when these procedures are not implemented. The immediate or early placement of the implant in a post-extractive site might also contribute and partly preserve the width and height of the surrounding tissues. In order to better understand these mechanisms, more trials with larger sample sizes are needed”*.

ALVEOLAR REGENERATION

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P Felice¹
G Zucchelli¹
G Cannizzaro²
C Barausse¹
M Diazzi³
A Trullenque-Eriksson^{4,5}
M Esposito⁶

1 | Department of Biomedical and Neuromotor Sciences, Unit of Periodontology and Implantology, University of Bologna, Bologna, Italy
2 | Private Practice, Pavia, Italy
3 | Private Practice, Bologna, Italy
4 | Folkhälsan Syste, Trollhättan, Sweden
5 | Institute of Dentistry, Barts, The London School of Medicine and Dentistry, Queen Mary University of London, London, UK
6 | Department of Biomaterials, The Sahlgrenska Academy at Göteborg University, Göteborg, Sweden

ORIGINAL ARTICLE
European Journal of Oral Implantology
2016;9(3):233-247

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