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Immediate implant placement utilizing vestibular socket therapy versus early implant placement with contour augmentation for rehabilitation of compromised extraction sockets in the esthetic zone: A randomized controlled clinical trial

ABSTRACT

After tooth extraction, especially in aesthetic areas, it is not rare to have a compromised socket which makes immediate or early implant rehabilitation an important challenge for the clinician, due to severe alveolar bone reabsorption. In order to manage these clinical cases and minimize hard and soft tissues loss, the contour augmentation technique has been proposed, featuring a staged early implant placement protocol and guided bone regeneration. Despite the demonstrated good results, this technique requires multiple surgical interventions and a longer treatment duration. This is why the Authors of this randomized controlled trial compared the vestibular socket therapy (VST) to the contour augmentation technique in the management of mid-facial soft tissue changes (primary outcome), mesial and distal papillae dimensions, horizontal soft tissue changes and labial bone plate thickness at apical, middle and coronal levels (secondary outcomes) over 1-year. Forty patients needing a with single maxillary tooth rehabilitation in the aesthetic zone were enrolled and randomized into two groups; VST (test; n=20 patients), or contour augmentation (control; n=20 patients). In the VST group, guided bone regeneration (GBR) was performed together with immediate implant placement, and a flexible cortical membrane of 0.6 mm thickness (OsteoBiol® *Lamina*®, Tecnoss®, Giaveno, Italy) was inserted and positioned 1 mm apical to the soft tissue margin and secured using two tacks. In the contour augmentation group, the extraction socket was filled with a collagen plug and left for a period of 4–8 weeks till soft tissue healing. At the second-stage intervention, an implant was inserted, with grafting of the bone defect.
Both techniques showed a high implant survival rate and increased bone thickness after 12 months. Moreover, VST showed significantly fewer mid-facial soft tissue changes and mesial papilla changes.

CONCLUSIONS

Based on the results, VST could represent an innovative technique for implant placement in the maxillary aesthetic zone. Within the limitations of the present study, the Authors concluded that *"VST could represent a clinically viable technique for implant placement in compromised fresh extraction sockets in the aesthetic maxillary region. (…) VST showed significantly less vertical and horizontal soft-tissue changes, a potential with great interest in the aesthetic zone. VST is less invasive and requires only one surgical step and less treatment time than contour augmentation technique"*.

ALVEOLAR REGENERATION

266

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