

# ***GINGIVAL TISSUE AUGMENTATION FOR PASSIVE PRIMARY WOUND CLOSURE IN ASSOCIATION WITH GUIDED BONE REGENERATION***

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## **ABSTRACT**

**Background:** The focus should be on ways to maintain the natural soft tissue profile and bone contour after tooth extraction. The ideal hard and soft tissues are present at the time of extraction so that without a ridge preservation procedure, large deformities are likely to occur. Guided bone re- generation can be used alone or in association with bone graft to preserve the socket volume after extraction. The fresh extraction sockets offer better opportunities for bone regeneration because of their particularly elevated healing potential, but the lack of primary full flap closure can jeopardize final results.

**Methods:** Forty healthy patients receiving at least one tooth extraction were utilized in this study. Ten fresh sockets (group I) were treated with Cerasorb bone graft and Epi-guide resorbable barrier. Ten fresh sockets (group II) were treated with Cerasorb bone graft and autogenous soft tissue graft to achieve complete socket sealing and primary wound closure. In the third group (group III) ten sockets were treated with Cerasorb and spontaneous in situ gingival augmentation technique to achieve primary wound closure. The extraction sockets of the control group (group IV) were allowed to heal spontaneously without the intervention of bone regeneration technique. The effects of these surgical procedures on both hard and soft tissue were evaluated at 12 months postsurgically.

**Results:** All the extraction sites treated by the socket preservation technique showed minimal changes in height and width dimensions in comparison with the control sites. For example at 12 months post surgically, the means of the net loss of height and width at the second group sites were  $0.6 \pm 0.49$  and  $0.9 \pm 0.7$  respectively. These changes were significantly different from that at control sites where the net loss of height and width were  $2.4 \pm 0.5$  and  $3.1 \pm 0.7$  respectively. Also at the sites of the second group, the use of the primary wound closure (by using the autogenous grafts) resulted in high density indices of the regenerated tissues, while the mean of the bone photo density at the grafted sites was  $91 \pm 3.4$  in comparison with the mean of  $74.7 \pm 8.3$  at the control sites.

The use of autogenous soft tissue grafts to achieve primary wound closure did not disturb the normal relationship of the existing surrounding tissues, the mucogingival junction was unchanged, the vestibular depth was preserved and the potential gingival recession at adjacent sites was avoided.

**Conclusions:** The present study showed that the passive primary wound closure in association with guided bone regeneration could prevent ridge deformities and preserved both the alveolar ridge and soft tissue dimensions. So these techniques eliminated the need for re-entry procedures of ridge augmentation to treat the ridge collapse.

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