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**Radiographic Comparative Analysis of Crestal Bone Loss After the
 Implant Placement by Conventional Flap Method with One-Stage and
 Two-Stage Surgery and Flapless Method with One-Stage Surgery:
 An In-Vivo Study**

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Abstract:

To evaluate and compared the crestal bone loss around the implant placed with conventional flap method with one-stage and two-stage surgery and flapless method with one-stage surgery in baseline 1 month, 3 months and 6 months followed by early loading.

Material and methods: An in- vivo study was undertaken to evaluate the crestal bone loss on mesial and distal aspect of the 15 implants placed, 5 implants in each groups using conventional flap method with one-stage and two-stage surgery and flapless method with one-stage surgery approach with early loading protocol. The change in heights of crestal bone was then measured on standardized digital periapical radiographs taken at baseline, 1 month, 3 months and 6 months. Statistical Analysis Used: Student's unpaired t- test.

Results: There was a statistically significant difference observed between the groups at 1 month for mesial and distally positioned implants as determined by one-way ANOVA ($F = 6.5, p = 0.012$). The inter group comparisons at 3 and 6 months were not statistically significant. At 1 and 3 months, the results show that conventional flap method showed higher crestal bone loss at mesial and distal positions compared to flapless method. But the results were not statistically significant ($p > 0.05$).

Conclusions: Considering the limitation of the six-month period study, reduction of crestal bone height around the implants placed with flapless surgery was not statistically significant, while the reduction of crestal bone height around the implants placed using with-flap surgery was statistically significant. However after 6 months the flapless surgery showed greater bone loss in the mesial and distal aspect as compared to the flap (one-stage and two-stage surgery). Hence tissue punch or flapless technique provides time saving more comfort to the patient and less surgical intervention, it must be done keeping in mind the delayed bone loss. Various factors like the prosthetically guided placement, pre planning & biomechanical factors, loading protocol must be adequately ensured. More research is needed for the final conclusion.

Keywords-conventional flap, flapless, tissue punch, one-stage surgery, two-stage surgery, implant, marginal bone.

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