

Effects of Angulated and Non-Angulated Mini-Implants Abutment Supporting Mandibular Overdenture on Peri-Implant Bone Height

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Background: Mini-implants have been successfully used when there is a little bone to support complete dentures, using of mini-implants abutment is the key solution for stable and retentive overdentures.

Objective: To compare peri-implant bone height post angulated or non-angulated mini-implants insertion.

Design: A Randomized Two-Arm Parallel Study.

Setting: Faculty of Dentistry, Al-Azhar University-Assiut Branch, Egypt.

Method: The study was performed from October 2012 to December 2014. Twenty patients were included in the study based on two criteria (1) free from any systemic diseases and (2) their lower flat ridges resorbed with ill-fitted lower dentures. The patients were divided into two groups. The first group received lower overdenture with non-angulated abutment while the second group received lower overdenture with angulated abutment. The bone height for each subject was evaluated with panoramic X-ray after 6, 12, 18 and 24 months. The data were analyzed using SPSS program.

Result: Twenty edentulous patients participated in this study. They were homogenous in their personal characteristics. Their education levels varied between primary and secondary levels. Insignificant differences in age, education level and gender were found ($p > 0.05$).

The differences between the two groups were highly significant. Mean bone height was found to be significantly higher in Group 1 than in Group 2 ($p = 0.03$). The paired sample t-test showed a significant improvement in bone height in the non-angulated group ($p = 0.03$) and insignificant increase in the angulated group ($p = 0.14$).

Conclusion: Lower overdenture mini-implant with non-angulated abutment is better for edentulous patients compared to angulated abutment in term of bone height.