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Accuracy of flapless implant placement in implant supported overdenture with 3D printed surgical guide

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Objective: The aim of the study was to evaluate the accuracy of surgical templates for guided implant surgery using 3D printing in construction of implant supported over denture.

Patients & Methods: 24 patients were examined for implant placement. Each implant site was planned virtually and a 3D printed surgical guide was made. The implant had been installed using the surgical guide. Postoperative CBCT was performed and the images were superimposed on the virtual planning images. The amount at the coronal, apical and angular deviation was calculated.

Results: Mean angular deviation of the implants placed in partially and completely edentulous patients 4.1 ± 0.1 and 3.3 ± 0.78 degrees, respectively. The mean deviation coronally was 1.5 ± 0.3 and 1.1 ± 0.5 mm in partially and completely edentulous patients, respectively. While the deviation at the apical portion showed a mean 2.1 ± 0.3 and 2.2 ± 0.5 mm in implants placed in partially and completely edentulous patients.

Conclusion: A high accuracy in implant placement can be achieved using 3D printed surgical guide.

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