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

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Aim: 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. Post-operative 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 in coronally was 1.5±0.3 and 1.1±0.5mm in partially and completely edentulous patients respectively. While the deviation at the apical portion showed a mean 2.1±0.3 and 2.2±0.5mm 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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