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A CT Scan and the Panoramic X-Ray in Pre-Operative Implant Assessment: A Vivo Study

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Abstract:

Aims: To compare the evaluation in determining the accuracy and feasibility of the panoramic radiography (OPG- orthopantomogram) with computed tomography (CT, Dentascan) for rehabilitation of partially edentulous posterior maxilla with implants.

Settings and Design: In vivo- comparative study.

Material and Methods: A total of 20 implant patients were selected with partially edentulous maxillary posterior ridge. Using a radiographic stent (3×3 mm square), an OPG and Dentascan was implemented. A linear and mesio-distal radiographic evaluation were performed using a built-in software tool and percentage radiographic distortion for each measurement was also calculated (without considering magnification factor).

Statistical analysis: The inferential statistics such as t-test and one-way ANOVA was applied to find out the significant association between and within the variables.

Results: The mean difference of linear radiographic evaluation and mesio-distal radiographic evaluation were found to be statistically very highly significant at P 0.000. The linear and mesio-distal radiographic distortion for each measurement was not found to be statistically significant at P 0.408.

Conclusions: OPG can be used for a primary and early diagnostic and treatment planning as aid for the implant placement while Dentascan as a golden standard can be used in final placement. The sites intended for implant placement would also be referenced and highlighted with radiographic markers and surgical stents. This will allow for precise magnification and location of implant sites.

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