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Comparative Evaluation of Marginal Accuracy In CAD\CAM Milled, Laser Sintered And Cast Metal Copings With Varying Degree of Convergence Angle of Abutments - An In Vitro Study

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1. ABSTRACT

1.1 AIM:- Purpose of this study was to evaluate and compare the marginal accuracy of coping on abutments with 6° and 12° of convergence angle using restorations fabricated by CAD/CAM technology, DMLS technology and conventional casting technology.

1.2 MATERIALS & METHODS:- Sixty copings were fabricated using standardized procedure on a custom design stainless steel die of first pre-molar with varying degree of convergence and will be divided into 6 groups according to degree of convergence and method of fabrication. After this sample has been taken for evaluation under the scanning electron microscope. Descriptive analysis was performed using mean, standard deviation, and median, while the Mann-whitney test was performed to determine whether the marginal discrepancies were significantly different between each group (significance level $p < 0.05$).


1.3 RESULTS:-

Within the all groups with 6° and 12° of convergence highest mean marginal discrepancy was showed with 12° conventional cast copings ($152.01 \pm 73.76\mu\text{m}$) and Lowest mean marginal discrepancy was showed with 12° CAD/CAM zirconia copings ($36.92 \pm 15.44\mu\text{m}$).

1.4 CONCLUSION:-

Least mean marginal discrepancy was showed by CAD/CAM zirconia copings with 12° of convergence angle.

Keywords- marginal accuracy; DMLS; CAD CAM Zirconia; conventional casting; convergence angel.

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