

عنوان مقاله:

Dimensional accuracy of three impression materials by one-step and two-step impression techniques: An in vitro study

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خلاصه مقاله:

Introduction: An accurate impression is essential to create a well-fitted dental prosthesis. This study aimed to compare the dimensional accuracy of three elastomeric materials using one-step and two-step impression techniques. **Methods:** In this study, 20 impressions were fabricated for each Vinyl siloxane ether (Identium), condensation silicone (Speedex), and additional silicone (Panasil) impression materials by the one-step and two-step impression techniques using perforated metal trays. The one-step impression technique was simultaneously performed with heavy body/light-body materials. In the two-step impression technique, acrylic copings with 2-mm thickness were placed on the abutments to obtain similar spacing for the light-body material. The dimensional accuracy of different impression materials and techniques were measured using distance differences of the stone dies from the master cast; subsequently, the results were compared with the reference model. Data were analyzed using a one-way analysis of variance and Dunnett's tests ($\alpha=0.05$). **Results:** All impression materials demonstrated an acceptable clinical accuracy. Identium (Vinyl siloxane ether) displayed the most accuracy in both the one-step and two-step impression techniques ($P > 0.05$). The best accuracy for Panasil (additional silicone) was found to be the two-step impression technique ($P > 0.05$), and the best accuracy for Speedex (condensation silicone) was reported as the one-step impression technique ($P > 0.05$). Furthermore, the one-step impression technique was highly accurate in diameter dimension, as compared to the two-step impression technique. **Conclusion:** As evidenced by the results, the accuracy of impression is affected by the impression materials. Moreover, Identium (Vinyl siloxane ether) demonstrated the most accuracy in both one-step and two-step impression techniques.

کلمات کلیدی:

Dental Impression Materials, Dental Impression Technique, Silicone, Dimensional Accuracy

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