PG - 77 : EVALUATION OF THE DIMENSIONAL ACCURACY OF THREE VARIOUS IMPRESSION MATERIALS USING MONOPHASE AND PUTTYWASH IMPRESSION TECHNIQUES - AN IN-VITRO STUDY

Vidhya B, Final year postgraduate,
Department of Prosthodontics and Crown & Bridge

Indira Gandhi Institute of Dental Sciences, Puducherry

Background: Elastomeric impression materials used in fixed prosthodontics are expected to yield highly precise impressions with good handling properties. The dimensional accuracy of elastomeric impression material being a crucial property, it is affected more by the impression technique than by the chosen material.

Methodology: According to the standard design specifications, a master cobalt chromium metal die of a mandibular molar was milled using CAD software. The custom trays were fabricated and impressions of the metal die were made using three different elastomers – namely Polyether, VPS ,and VPES (heavy

body, medium body and light body consistencies) and named as group I, II and III respectively under one step and two step impression techniques which was grouped as 1 & 2 for each impression material. N= 10, a total of 60 samples under the groups were studied. The dimensional accuracy was evaluated by superimposing the 3D images of gypsum dies against that of metal master die and the mean deviation values were calculated.

Results: When comparing the accuracy among three materials using one step and step two impression techniques, there was no statistical significant difference among Polyether, VPS and VPES[$p>0.05$].. But Polyether was a statistical significant difference among the two techniques for one step and two step techniques ($p= 0.001$).

Conclusion: Though Polyether showed statistical significant difference among the two techniques but was not clinically significant. Within the limitations of the study it was concluded that the dimensional accuracy of all three impression materials were clinically acceptable under the two techniques.