



THE EFFECT OF SURFACE FINISHING ON TRANSLUCENCY AND COLOR STABILITY OF POLYMER-INFILTRATED CERAMIC NETWORK MATERIAL

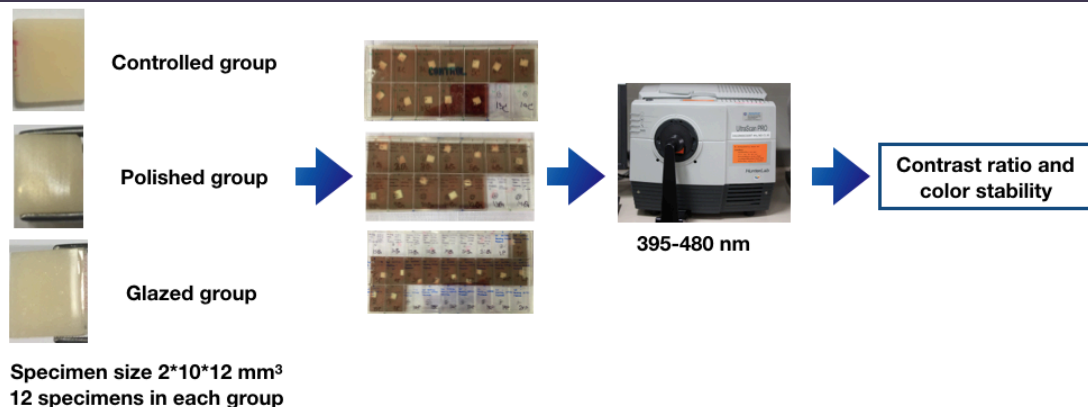
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Abstract

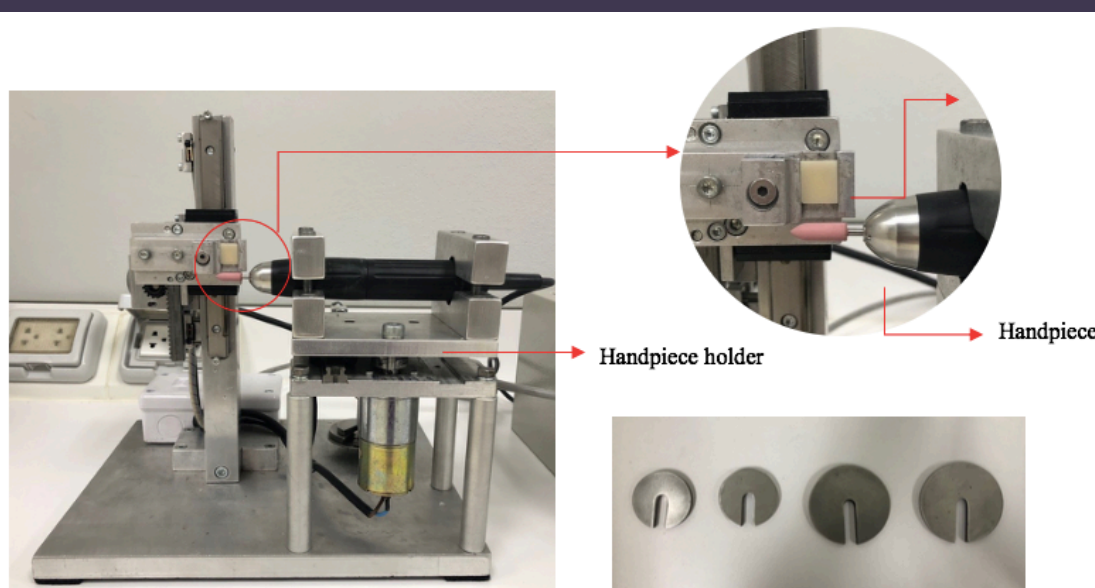
Statement of the problem: Translucency and color stability play the important role in the esthetic dental restoration. Surface finishing of the restorative material may affect these properties. There has been a little studies concerning the effect of glazing and polishing on the translucency and color stability of newly developed polymer infiltrated ceramic network

Objective: To compare the translucency (contrast ratio) and color difference (ΔE) of PICN specimen with different surface treatment

Material and Method : 36 rectangular shaped 10x12x2 mm³ PICN specimens for contrast ratio and color stability from vita Enamic block. They were divided to three groups; controlled group, polished and glazed group. The polishing process was performed by Customized polishing machine and Vita Enamic polishing set technical. They were immersed in red wine for 28 days, then measure CR , ΔE

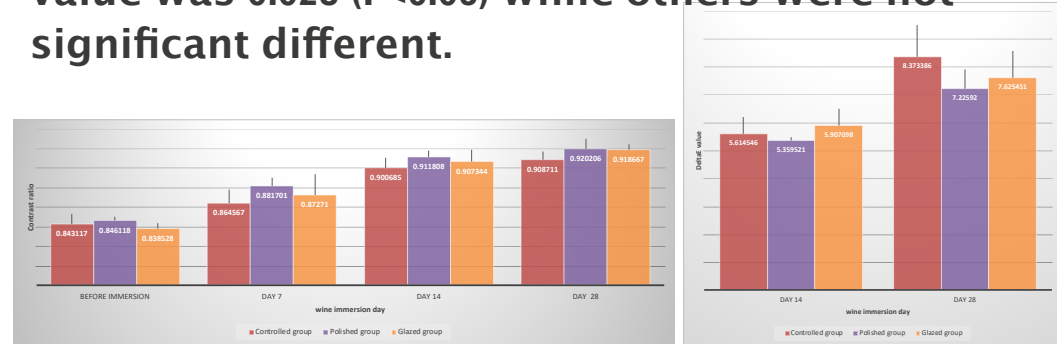


Customize polishing machine



Result:

The CR values were increased by the wine-immersion time in all specimen groups . The couple of control-polished group were significantly different among the day 14 and 28 after immersion specimens in wine and the couple of control-glazed group were statistically significant different in the day 28 after immersion in wine. Similarly, The ΔE^* value were statistically significant difference among control and polished groups in the day28 after immersion specimen in wine compared to the day before the specimen was immersed in wine because the p-value was 0.028 (P<0.05) while others were not significant different.



Discussion:

- Our experiment has shown that the change in color gradually increases as the period of time the specimen is immersed in red wine increase ,This is similar to other experiment.
- The contrast ratios of our experiment in the polishing group and in the glazed group was a decrease in translucency after the specimens were immersed in red wine. Other experiments using PICN also show a similar pattern.
- After comparing between polished and glazed group, there were no significant difference in color stability (delta E) or contrast ratio in our experiment. This result is the same as previous study.
- The delta E and contrast ratio value of the controlled group to be only slightly different from the polished and glazed group because we use polishing every group with silicon carbide paper from 400-1,200 grits, resulting the control group to have certain smoothness to start off with.

Conclusion : color stability and contrast ratio of polished group and glazed group were no significant different at 14 days and 28 days after immersion in red wine.



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