2318 Effect of Polishing Systems on Surface Loss of Composite Resins

Friday, July 16, 2010: 3 p.m. - 4:15 p.m.
Location: Exhibit Hall (CCIB)
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Objectives: The aim of this study was to determine the surface loss of twelve composite resins polished with three different finishing systems: one based on silicon-impregnated rubber and two based on silicon rubber and aluminum oxide.

Methods: Fifteen samples, 25 x 2 x 2 mm, A2 shade, were prepared for each material as follows: G1 Filtek Z350® (3M/ESPE), G2 TPH3® (Dentsply Caulk), G3 Tetric N Ceram® (Ivoclar/Vivadent), G4 Amelogen® (Ultradent), G5 EsthetXHD® (Dentsply Caulk), G6 Heliomolar® (Ivoclar/Vivadent), G7 ICE® (SDI), G8 Filtek Z100® (3M/ESPE), G9 Brilliant® (Coltène Whaledent), G10 Point 4® (Kerr SDS), G11 Premisa® (Kerr SDS), G12 Grandio® (VOCO). They were prepared using incremental technique and lighcuring each increment for 40 seconds (Curing Light XL3000 (3M) at 550 mW/cm2). Each group was randomly divided into three subgroups of 5 samples depending on the finishing system: J: Jiffy Polisher® (Ultradent), S: Super - Snap® (Shofu) and A Astropol/Astrobrush® (Ivoclar/Vivadent). Samples were stored in distilled water 24 hs at 37° C. Height in each sample was measured in three points before and after polish using a digital micrometer (Mitutoyo Corporation/Japan). Samples were polished for 30 seconds (10 sec per grit), using constant speed and pressure and refrigeration. Results were statistically analyzed using two-way ANOVA at two levels: resin and polishing system, and Tukey test. Results: both resin and polishing system had significant effect (p<0.01). Surface loss obtained (mm) was: G12: 0.035 (0.022), G1: 0.036 (0.0164), G8: 0.036 (0.022), G6: 0.04 (0.022), G2: 0.040 (0.0243), G3: 0.0454 (0.0175), G7: 0.05 (0.028), G10: 0.053; (0.018), G11: 0.0561 (0.0184), G9: 0.062(0.0253), G4: 0.075 (0.019), G5: 0.079 (0.0861). Loss (mm) for each finishing system was: S: 0.0442 (0.0199), A: 0.0464 (0.025), J: 0.0605 (0.0491).

Conclusions: under the experimental conditions of this study, it can be concluded that resins have a different behavior when polished with the evaluated systems. Besides, Jiffy produced the highest surface loss regardless the type of resin.

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