

O080

Can We Repolish Discolored Single-Shaded Composite Resins With Different Wheel-Polishers?

L. Sebnem Turkun¹, Cankut Canevi¹, Hayal Boyacioglu²

¹Restorative Dentistry, Ege University School of Dentistry, Izmir, Turkey, ²Statistics, Ege University, Faculty of Science, Izmir, Turkey

Objectives To evaluate the color restitution of single-shaded composite resins immersed in a coffee solution and repolished with different wheel systems.

Methods Twenty-four-disc samples of 8x2mm (n=120) were prepared in plastic molds for Omnichroma (OMN; Tokuyama, Japan), Zenchroma (ZEN; President, Germany), Essentia Universal (EU; GC, Japan), Charisma Diamond One (CDO; Kulzer, Germany) and NeoSpectra (NS; Dentsply, Germany). One side of the samples was left unpolished (Mylar strip) while the others were randomly polished with Twist-Dia (TWD) or Nova-Twist (NOV) for 30 sec. Specimens were immersed in a coffee solution for seven days. Color measurements according to CIEL*a*b* system were performed with a spectrophotometer (Vita Easyshade, Vident, Brea, USA) at baseline, after seven days, and after repolishing. The color change (ΔE^*) values were evaluated by T-test, Multivariate ANOVA, and Dunnett-t post-hoc tests ($p < 0.05$).

Results The coffee discolorations that occurred were above the clinically acceptable level of $\Delta E = 2$ in all groups. Regardless of the materials and the polishing systems used, Mylar strip groups were the more discolored ones. In TWD groups, CDO was the most discolored group ($\Delta E = 6.45$) while OMN ($\Delta E = 2.96$) and ZEN ($\Delta E = 3.06$) were the less ($p = 0.000$). In NOV polished materials, EU ($\Delta E = 5.85$) and CDO ($\Delta E = 5.68$) were similarly the most discolored groups ($p < 0.05$) while NS, OMN, and ZEN were the less (respectively 3.48; 3.70; 3.79). After repolishing, regardless of the polishing systems used, CDO could not reach the level of $\Delta E = 2$ ($p < 0.05$) while the other groups had values far below.

The type of polishing system used affected the ΔE values after storage in coffee for CDO ($p = 0.015$), OMN ($p = 0.000$), and ZEN ($p = 0.011$). Compared to TWD groups, NOV groups were less discolored in CDO and NS while more in EU, OMN, and ZEN.

Conclusions Color changes after coffee immersion were perceptible in all single-shaded composite resins but repolishing could reconstitute the color at a level of less than $\Delta E = 2$.

O081

Surgical Results of Immature Third Molar Autotransplantation Using Printed Replicas.

Miks Lejnieks^{1,2}, Ilze Akota¹, Gundega Jakobson³, Laura Neimane^{3,2}, Oskars Radzins^{3,2}

¹Maxillofacial surgery, Riga Stradins University, Babite, Latvia, ²Baltic Biomaterials Centre of Excellence, Riga, Latvia, ³Riga Stradins University, Riga, Latvia

Objectives The aim of the study was to compare surgical results of immature third molar autotransplantation without and with use of 3- dimensional printed donor tooth replicas. The replica was expected to decrease the total surgery time and the number of attempts of fitting the donor tooth to the recipient site.

Methods All surgeries were done in RSU SI. Planning and replica printing for surgeries were supported by BBCE. The replica was created based on the cone-beam computed tomography data of the patient and subsequently 3- dimensional printed. Two groups of immature third molar autotransplantation were formed, one conventional (group A) and one using a printed donor tooth replicas (group B).

Total surgery time from the first incision to the last suture, donor tooth extra- alveolar time and the number of donor tooth fitting attempts were monitored.

Results Group A consisted of 22 patients, (6 males, 18 females, mean age 17.81, range 13-22).

The average total surgery time was 65.91 minutes, donor tooth extra-alveolar time was 63.63 seconds, and the average number of fitting attempts was 2.00.

Group B consisted of 19 patients, (8 males, 11 females, mean age 16.10, range 14-19).

The average total surgery time was 45.00 minutes, donor tooth extra-alveolar time was 61.32 seconds, and the average number of fitting attempts was 1.53.

Conclusions The use of a replica made the procedure less traumatic, reduced average total surgery time by 20.91 minutes, the donor extra-alveolar time by 2.31 seconds, and the number of fitting attempts of the donor tooth by 0.47.

ACKNOWLEDGMENTS: The authors acknowledge financial support from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 857287

