Spectrophotometric Analysis of Coronal Discoloration Induced by CEM Cement Compared with White MTA and Calcium Hydroxide

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Abstract

Purpose
Propose was to investigate the discoloration potential of CEM cement, White MTA (WMTA) and Calcium hydroxide, used in pulp chamber.

Methods
The color measurement was performed using spectrophotometer (VITA Easyshade Advance), at the following intervals: Before (T0) and after placement of the filling (T1), after 1 week (T2), 1 month(T3), 3 months (T4), 5 months (T5) and after removing the material from the boxes (T6). Color change (ΔE) values were calculated using sample Kolmogorov-Smirnov test to determine the normal distribution followed by ANOVA, repeated measured ANOVA and post-hoc Tukey’s tests to determine statistical significances.

Results
All materials led to clinically perceptible crown discoloration after 1 week. The highest ΔE value in all color measurement intervals, up to 5th month, was for the WMTA group. Discoloration induced by CEM cement was not significantly different from Ca(OH)2 or the control groups (p> 0.05).

Conclusions
Pertaining to the lower color changing potential of CEM cement compared to WMTA, this material lseems suitable for using in aesthetic zones.