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Effect of chloroform, eucalyptol and orange oil solvents on the microhardness of human root dentin

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This study aimed to assess the effect of chloroform; eucalyptol and orange oil solvents on the micro hardness of human root dentin. Sixty-eight single-rooted single-canal extracted human premolar teeth were used. Tooth crowns were separated from the roots at the cemento-enamel junction (CEJ). Roots were buccolingually sectioned into mesial and distal halves. Specimens were randomly divided into 5 groups, with 20 teeth in each solvent group and 4 teeth in each control group. Primary micro hardness of specimens was measured using Vickers micro hardness tester. Specimens were exposed to solvents for 15 minutes and were subjected to micro hardness testing again. Data were recorded and analyzed using repeated measure ANOVA. No significant difference was found in dentin micro hardness before and after exposure to solvents in any of the orange oil, eucalyptol, chloroform or saline groups ($P=0.727$). None of the experimental groups showed any significant difference in terms of dentin micro hardness reduction ($P=0.99$) and had no significant difference with the negative control group. This study showed that chloroform, eucalyptol and orange oil as gutta-percha solvents did not decrease the micro hardness of root dentin. Thus, none of the mentioned solvents has any superiority over the others in terms of affecting dentin properties.

Biography

Alaleh Hashemi obtained her DDS degree from University of Tehran. She has always had a passion to serve the underprivileged population in improving dental hygiene needs due to the limited access available in Iran. She voluntarily worked at Vardavard day clinic charity center in Tehran, Iran. Additionally, her hunger for knowledge has driven her research in the effects substances have on dental hardness leading to the publication of "Effect of Chloroform, Eucalyptol and Orange Oil Solvents on the micro hardness of Human Root Dentin" in 2015.

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