

COMPARISON OF THE AMOUNT OF VOID IN DIFFERENT TYPES OF RESIN CEMENT UNDER SCANNING ELECTRON MICROSCOPE

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Abstract

Objective The research aimed to compare the amount and diameter of voids in resin cements at different areas under different film thicknesses.

Materials and method The research studied the voids in different types of resin cements at 200 micrometer and 400 micrometer film thicknesses which included: 1. Maxcem Elite, 2. RelyX Unicem 3. Superbond C&B. The samples were examined under a scanning electron microscope at 350X magnification.

Results Maxcem Elite, RelyX Unicem, and Superbond C&B had significant difference in the amount of void formation ($p < 0.05$). The resin cement with the most amount of void was Maxcem Elite, followed by RelyX Unicem, and Superbond C&B respectively. Maxcem Elite and RelyX Unicem had large amount of small voids. Superbond C&B usually had large, interconnected voids. There was a significant difference in the amount of void formation at the center and the periphery of the specimens ($p < 0.05$). However this research showed that there was no significant difference in the amount of voids under different film thicknesses of the resin cements.

Conclusion Different types of resin cements had different amount of void formation. Film thickness and areas in resin cement did not affect the amount of void formation. Unfilled total-etch resin cement though had less amount of void formation, yet the voids had multiple lobules and were interconnected. Self-etch and self-adhesive resin cements with fillers had smaller voids with greater distance in between.

Keywords: Resin cements; Scanning electron microscope; Void