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A Comparative Microleakage Study of Retrograd Filling Materials

Selçuk ERKUT¹, R. Cem TANYEL¹, Nurullah KEKLIKÖĞLU², Sami YILDIRIM¹, Ahmet Bülent KATİBOĞLU¹

¹Department of Oral Surgery, School of Dentistry, İstanbul University, İstanbul- Turkey

²Department of Histology, Faculty of Dentistry, İstanbul University, İstanbul- Turkey

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 [Authors](#)



medsci@tubitak.gov.tr

Abstract: The aim of the retrograde filling in apical resection operation is to obtain an effective and hermetic apical sealing. According to the development of technology many materials are now used in apical resection operations for retrograde fillings. An in vitro dye leakage study was performed to test the sealing ability of IRM, MTA, amalgam and zinc-phosphate cement materials. Forty single rooted extracted human teeth were used in this study. After cleaning and shaping, all the roots were obturated with zinc-phosphate cement and gutta-percha. Teeth were randomly divided into four groups. After root-end resections of the teeth in all groups, 3 mm depth of retrograde class I cavities were performed in 3 groups with micro-handpiece preparations. Retrofillings of each group were performed with IRM, MTA and silver amalgam. Methylene blue was used to determine the apical leakage. After sectioning the roots longitudinally linear dye penetration in denting and cement was measured with a caliper under stereomicroscope and the results were statistically analyzed.

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Key Words: Retrograde filling, IRM, MTA, amalgam, zinc-phosphate cement

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