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Marginal adaptation of endo-sequence BC Sealer, MTA fillapex and Pro-Root ES root canal sealers to dentin: A SEM study

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Biography

Baljeet Kumar is Head of Department and Associate Professor of Department of Conservative Dentistry and Endodontics in Punjab Government Dental College and Hospital in Amritsar, Punjab, India. He has done his post-graduation in Conservative Dentistry and Endodontics in 2001. He has 12 years of experience in Rural Dental Healthcare in the Department of Health and Family Welfare and 10 years of experience as lecturer and Asst. Professor. Currently he is working as Associate Professor with Medical Research and Education, India (Conservative Dentistry & Endodontics), teaching under Graduates & Post Graduates. He is the Incharge for the subject of Dental Materials, Head of Department for the subject of Oral Medicine & Radiology, Incharge Information Technology and Human Resources. His main topic of interest is endodontic instrumentation and sealers. He has various publications in state level, national level and international level in Conservative Dentistry and Endodontics. He has published more than 12 papers in reputed national & international journals.

Abstarct

Introduction: Successful root canal therapy requires a hermetic three dimensional obturation of root canal system. The role of sealer is critical for the sealing ability of obturation material and many new root canal sealers have been developed to fill the residual gaps between gutta percha and canal wall.

Objectives: To compare the marginal adaptation of EndoSequence BC sealer, MTA Fillapex & ProRoot ES root canal sealers to dentin by using SEM.

Methods: Sixty extracted teeth were selected, decoronated, instrumented in crown down fashion using protaper rotary file system upto size F3. Samples were divided into three groups: Group I-EndoSequence BC sealer. Group II-MTA Fillapex, Group III-ProRoot ES sealer. Marginal adaptation of sealers to root dentin was evaluated at coronal and apical halves using scanning electron microscopy (SEM). Maximum and minimum marginal gap values (µm) at sealer and dentin interface were recorded and mean was calculated.

Results: On statistical evaluation using one way ANOVA and Kruskall Wallis test followed by Post Hoc test showed no statistically significant difference ($p>0.05$) among the three groups at apical halves of root sections. At coronal halves there was no statistically significant difference between Group II and Group III. However, statistically significant difference was found when Group I was compared with Group II and Group III at coronal halves of root sections.

Conclusion: The current *in vitro* study showed that Endosequence BC sealer along with C point group showed least microgap between root canal sealer and dentin when compared with MTA Fillapex sealer and ProRoot ES sealer groups.

Keywords: Endosequence BC sealer, MTA Fillapex sealer. ProRoot ES; Scanning Electron Microscope; marginal gap value

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