

Letter to Editor: Coronal Microleakage of the Resilon and Gutta-Percha Obturation Materials with Epiphany SE Sealer: An In-Vitro Study

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Dear Editor,

We read with great interest the article entitled "Coronal Microleakage of the Resilon and Gutta-Percha Obturation Materials with Epiphany SE Sealer: An In-vitro Study" by Al-Maswary AA et al., which has been published in your esteemed journal (Journal of Clinical and Diagnostic Research, 2016 May, Vol-10(5): ZC39-ZC42) [1]. We want to share few of our thoughts regarding this study. It was a good study comparing the coronal leakage of Resilon and gutta-percha with Epiphany SE sealer using the dye penetration method. The results of this study indicated that a complete seal was not obtained with any of the tested specimens. One of the reasons attributed for this leakage was incomplete infiltration of resin into the demineralized dentin, as a result of difficulty in achieving the ideal ratio between the degree of the dentin demineralization and the ability of resin infiltration [2] which has been mentioned by the authors in the discussion. However, this could have been explained further by addressing the fact that the chelating agent (17% EDTA) employed in this study might have led to the collapse of demineralized collagen matrices left in the root canal walls which impeded sealer infiltration. This is in accordance with Garcia-Godoy F et al., [2] who reported that both EDTA and MTAD caused a collapse of the dentin matrix structure which prevented sealer infiltration and interferes with the formation of high quality hybrid layer bonding. In addition, the raw material of Resilon i.e., polycaprolactone is biodegradable under microbial attack [3]. An enzyme lipase is released by these microorganisms, which is capable of cleaving the ester bonds of polycaprolactone, making it more susceptible to alkaline and enzymatic hydrolysis [4]. These factors are also to be

taken into account while employing Resilon/Epiphany (SE) sealer in clinical practice where the human oral cavity is comprised of a wide variety of microbial flora. Also, this study employed dye penetration methodology for assessment of coronal microleakage. However, the validity of dye leakage studies has been questioned because of the possible effect of entrapped air on ingress of the dye solution [5]. Spangberg L et al., demonstrated that dyes such as methylene blue and crystal violet could not penetrate into an entire artificial void by passive diffusion alone and also reported that the voids could be filled with dye by applying vacuum during this method, thereby inferring that dye leakage studies can be conducted under vacuum pressure [6]. Hence, the authors can attempt further similar studies, keeping in mind the above mentioned parameters for the better appreciation of the results.

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