

# Perbandingan kebocoran mikro antara pengisian saluran akar dengan siler resin epoksi dan polidimetilsiloksan generasi baru pada sepertiga apeks = The comparison of microleakage of obturation with epoxy resin based and new generation polydimethylsiloxane based root canal sealer in one third apical root canal

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## Abstrak

Latar Belakang: Siler yang baik adalah yang memiliki tingkat kebocoran mikro yang rendah Penelitian ini bertujuan untuk menganalisis siler golongan resin SRE dan polidimetilsiloksan generasi baru SPGB

Metode: Tiga puluh dua gigi premolar bawah dibagi dua kelompok sama besar yaitu kelompok SRE dan SPGB Setelah pengisian saluran akar dengan teknik kondensasi lateral sampel diinkubasi 370C 24 jam mahkota dipotong menyisakan bagian akar 15 mm dilapis cat kuku kecuali 1 mm dari apeks lalu direndam dalam tinta India selama 7 X 24 jam Lalu sampel didekalsifikasi dengan asam nitrat 5 didehidrasi berturut turut dengan alkohol 80 90 dan 100 dan dibuat transparan dengan metil salisilat 100 Kedalaman penetrasi tinta dievaluasi dengan mikroskop stereo Skor 1 untuk penetrasi tinta 0 0 5 mm skor 2 untuk penetrasi tinta 0 5 1 mm dan skor 3 untuk penetrasi tinta 1 mm

Hasil: Distribusi proporsi kebocoran terbesar kelompok SRE terdapat pada skor 2 yaitu sebesar 56 3 Sedangkan distribusi proporsi kebocoran terbesar kelompok SPGB terdapat pada skor 1 yaitu sebesar 68 8 Dengan tes Kolmogorov Smirnov terdapat perbedaan bermakna antara kelompok SRE dan SPGB

Kesimpulan: Kebocoran mikro pengisian saluran akar pada sepertiga apeks dengan siler polidimetilsiloksan generasi baru lebih rendah dibandingkan dengan siler resin epoksi

.....Background: An ideal root canal sealer should have good sealing ability The purpose of this study was to analyze the microleakage of obturation using epoxy resin based SRE and new generation polydimethylsiloxane based SPGB as root canal sealer

Methods: Thirty two mandibular first premolars were equally divided into two groups and obturated with lateral condensation technique The sealer used for Group I and Group II were SRE and SPGB respectively After obturation the specimens were incubated 370C 24 h decoronated sealed with nail polish except 1mm from apex immersed in Indian ink for 7 days decalcified with 5 nitric acid solution dehydrated with 80 90 and 100 alcohol consecutively and made transparent by immersing them in 100 methyl salicylate Dye penetration were evaluated under stereomicroscope and givenscore 1 3 Specimen with 0 0 5 mm dye penetration was given score 1 while 0 5 1 mm penetration was given score 2 and 1 mm was given score 3 The results were statistically analyzed with Kolmogorov Smirnov test

Results: The largest proportion distribution in SR group was score 2 56 3 whilst the largest proportion distribution in SPGB group was score 1 68 8 There was a significant difference between the microleakage of epoxy resin based and new generation polydimethylsiloxane based sealer observed from the one third apical leakage

Conclusion: The microleakage of new generation polydimethylsiloxane based sealer is lower than epoxy resin based sealer