

Perbandingan kebocoran mikro sepertiga apeks pada pengisian saluran akar dengan semen resin epoksi dan MTA = The comparison of microleakage of obturation with epoxy resin based and mineral trioxide aggregate based root canal sealer in one third apical root canal

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Abstrak

Latar Belakang: Kebocoran mikro dipengaruhi oleh jenis semen saluran akar.

Tujuan: menganalisis tingkat kebocoran mikro pengisian saluran akar menggunakan semen resin epoksi (SRE) dan Mineral Trioxide Aggregate (SMTA).

Metode: Tiga puluh dua gigi premolar bawah, dibagi dua kelompok sama besar, yaitu kelompok SRE dan SMTA. Setelah pengisian saluran akar, sampel diinkubasi (37°C, 24 jam), kemudian direndam dalam tinta India selama 7 X 24 jam. Sampel didekalsifikasi sampai dengan transparan. Kedalaman penetrasi tinta dievaluasi dengan mikroskop stereo. Skor 1 untuk penetrasi tinta 0-0,5 mm, skor 2 untuk penetrasi tinta 0,51-1 mm, dan skor 3 untuk penetrasi tinta >1 mm.

Hasil: Distribusi proporsi kebocoran terbesar kelompok SRE terdapat pada skor 1, yaitu sebesar 37,5%. Sedangkan distribusi proporsi kebocoran terbesar kelompok SMTA terdapat pada skor 1, yaitu sebesar 21,9%. Tidak terdapat perbedaan bermakna antara kelompok SRE dan SMTA.

Kesimpulan: Semen resin epoksi dan semen MTA memiliki tingkat kebocoran yang sama.

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Background: The microleakage affected by type of root canal sealer.

Purpose: to analyze the microleakage of obturation using epoxy resin-based (SRE) and mineral trioxide aggregate-based (SMTA) as root canal sealer.

Methods: Thirty two mandibular first premolars were equally divided into two groups. They were SRE group and SMTA group. After obturation, the specimens were incubated (37°C, 24 h), immersed in Indian ink for 7 days, decalcified, dehydrated, and made transparent. Dye penetration were evaluated under stereomicroscope and given score 1-3. Specimen with 0-0,5 mm dye penetration was given score 1, while 0,51-1 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 SRE group was score 1 (37,5%), whilst the largest proportion distribution in SMTA group was score 1 (21,9%). There was no significant difference between the microleakage of epoxy resin-based and mineral trioxide aggregate-based sealer, observed from the one-third apical leakage.

Conclusion: The microleakage of mineral trioxide aggregate based sealer and epoxy resin-based sealer was relatively similar.