

INTISARI

Resin komposit telah banyak digunakan karena bersifat adhesif serta mempunyai sifat estetik dan fisiko-kimia yang baik, namun resin komposit tersebut juga dapat mengalami *shrinkage* yang memungkinkan terjadinya kebocoran tepi. Jenis resin komposit yang saat ini banyak diminati yaitu resin komposit *packable* dan *bulk-fill*. Tujuan penelitian mengetahui perbedaan kebocoran tepi antara resin komposit *bulk fill* dengan *packable* pada kavitas kelas I.

Penelitian eksperimental laboratoris dengan rancangan post test only group design dilakukan pada delapan buah gigi premolar post ekstraksi. Delapan buah gigi tersebut dibagi dua kelompok: empat gigi diaplikasikan resin komposit *bulk-fill nano hybrid*, dan empat lainnya diaplikasikan *packable microhybrid* dengan kedalaman 4 mm. Spesimen direndam dalam saliva buatan pH 6,8 suhu 37°C selama 24 jam, selanjutnya direndam dalam 2 wadah waterbath dengan suhu 55° dan 5° berulang-ulang secara bergantian selama 25 kali, perendaman dilakukan dalam waktu 1 menit. Spesimen direndam dalam larutan *metilen blue* 2% selama 24 jam, kemudian dibelah dengan isomet secara vertikal dari bukal-palatal. Kebocoran tepi diperiksa dengan mikroskop methalografi pada pembesaran 30x dan dianalisis dengan *independent sample t-test*.

Hasil penelitian menunjukkan tingkat kebocoran tepi pada resin komposit *bulk-fill* 0,650 mm sedangkan pada resin komposit *packable* 1,975 mm. Uji *independent sample t-test* menghasilkan nilai $p=0,014$ ($p<0,05$) menunjukkan bahwa tingkat kebocoran tepi pada resin komposit *packable micro hybrid* lebih banyak daripada resin komposit *bulk-fill*.

Kesimpulan dari penelitian ini adalah terdapat perbedaan kebocoran tepi yang signifikan pada restorasi resin komposit tipe *bulk fill* dengan *packable* pada kavitas kelas I.

Kata kunci: Resin Komposit *Bulk-Fill Nano Hybrid, Packable Micro Hybrid, Kebocoran Tepi.*

ABSTRACT

Resin composites has been widely used because of its adhesively and it also has aesthetic properties and good physico-chemical. However, during polymerization shrinkage could occur allow to become. microleakage. Type of composite resin which mostly used nowadays packable resin composites and bulk-fill. The purpose of this study was to observe the differences about microleakage between bulk-fill resin composite and packable composite resin in cavity class I.

An experimental laboratory research with post test only group design that was done in eight premolar teeth without caries and fracture. Eight pieces teeth were divided into two groups: four teeth applied with bulk-fill nano-hybrid resin composite, and four others applied with packable micro hybrid with depth 4 mm. The specimens were stored in artificial saliva with pH 6.8 at 37°C for 24 hours, followed by immersion in a second container water bath with temperature of 55°C and 5°C alternately repeated for 25 times, immersion was done in 1 minute. Specimens immersed in 2% methylene blue solution for 24 hours, then cleaved with isomet vertically from the buccal to palatal. Microleakage was checked with methalography microscope at 30x magnification and analyzed by independent sample t-test.

The results showed the average level of microleakage in bulk-fill resin composite was 0.650 mm while in the packable resin composites was 1,975 mm. Independent sample t-test resulted in $p = 0.014$ ($p < 0.05$) showed that the rate of microleakage at packable resin composite was more than in micro hybrid bulk-fill one.

From this study it could be concluded that there was a difference of the microleakage between packable resin composite and bulk fill types in cavity class I restoration.

Keywords: *Nano Hybrid Bulk-Fill, Micro Hybrid Packable Composite Resin, Microleakage.*