Pengaruh teknik etsa terhadap penetrasi semen resin ke tubulus dentin pada sementasi pasak fiber = The effect of etching techniques towards resin cement penetration into dentinal tubules on fibre post cementation

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Abstrak

Latar Belakang: Penelitian terakhir melaporkan bahwa kombinasi teknik self ecth dengan penambangan etsa dapat meningkatkan ikatan bahan adhesif pada sementasi fiber post. Namun masih perlu dievaluasi efek ikatan bahan adhesif teknik kombinasi penambahan etsa ini. Tujuan: Penelitian ini bertujuan untuk mengetahui perbedaan penetrasi semen resin ke dalam tubulus dentin pada sementasi fiber post antara teknik etsa dan kombinasi. Metode: tiga puluh dua gigi premolar paska perawatan saluran akar telah dipreparasi preparasi ruang pasak sepanjang 10 mm. Kelompok penelitian pertama menggunakan sistem adhesif self etch, kelompok kedua kombinasi penambahan etsa. Pasak fiber disemen menggunakan semen resin dengan pewarnaan fluorescence rhodamine B 0.1%. Gigi dipotong 2 mm sepertiga tengah akar. Sampel dianalisis dengan confocal laser scanning microscopy. Uji statistik menggunakan uji T Independent dan uji korelasi Pearson. Hasil: Terdapat perbedaan nilai densitas ikatan hibrida dan kedalaman penetrasi resin tags. Nilai densitas ikatan hibrida pada kelompok penelitian kedua lebih tinggi dibanding kelompok pertama dan berbeda bermakna secara statistik. Terdapat korelasi linear posisif kuat yang bermakna secara statistik antara densitas ikatan hibrida dan kedalaman penetrasi resin tags pada kedua kelompok. Kesimpulan: Densitas ikatan hibrida dan kedalaman penetrasi resin tags pada teknik kombinasi penambahan etsa memiliki nilai yang lebih tinggi dibandingkan dengan teknik self etch. Semakin tebal densitas ikatan hibrida maka semakin panjang kedalaman penetrasi resin tags, sehingga meningkatkan kekuatan mekanis semen resin terhadap subsrat gigi.

.....Background: Recently, combination of self-etch and additional etch technique as pre cementation procedures of fiber post restoration was reported to be the best. Although this combination still need to be investigated due to the binding effect between adhesive material and dentine. Objective: To determine the effects of different etching techniques on resin cement penetration into dentinal tubules. Methods: Thirty-two endodontic treated premolars were prepared for 10 mm fibre post. The samples were divided into two research groups, first group was treated with, self-etch only then the second one was treated with combination of self-etch and additional etching. Fibre post cemented using fluorescence rhodamine B 0.1% colored resin cement. Teeth were cut with 2 mm thickness in the middle third of root. The samples were analyzed with confocal laser scanning microscopy. Statistical analysis measurement was evaluated by Independent T test and Pearson correlation test. Result: Different hybrid layer density and penetration length of resin tags between two groups were detected. Statistically different and higher hybrid layer density score on self-etch with additional etching group were identified. Statistically strong linear positive correlation between hybrid layer density and penetration length of resin tags in both groups were also noticed. Conclusion: Hybrid layer density and penetration length of resin tags on self-etch with additional etching showed higher scores. The thicker the hybrid layer density, the longer penetration of resin tags, this phenomenon may increase mechanical strength regarding stronger bind of resin cement to tooth substrate.