

References

2020

References Articles Published
About Products Of IMICRYL



IMICRYL[®]



References Articles Published About Nova Compo B Plus (Bonding /Adhesive)

1. Muhammet Kerim Ayar¹ | Fatih Erdemir² Bonding performance of universal adhesives to er,cr:YSGG laser-irradiated enamel .2017 Apr;80(4):387-393. doi: 10.1002/jemt.22807. Epub 2016 Nov 23
2. Ayar MmK¹, Erdermir F². Bonding strength of universal adhesives to Er,Cr:YSGG Laser-Irradiated Dentin.Niger J Clin Pract. 2018 Jan;21(1):93-98.
3. Larissa Blarer & Mutlu Özcan (2018) Adhesion of dual-polymerized luting cement on superficial and deep dentin using different one-step self-etch mild adhesive systems, *Journal of Adhesion Science and Technology*, 32:23, 2604-2616, DOI: 10.1080/01694243.2018.1494399, University of Zürich, Zürich, Switzerland
4. Atalayin C¹, Tezel H², Ergucu Z², Unlu N³, Armagan G⁴, Dagci T⁵, Kose T⁶. The improvement of biocompatibility of adhesives : The effects of resveratrol on biocompatibility and dentin micro-tensile bond strengths of self-etch adhesives.Clin Oral Investig. 2018 Nov 10., DOI: 10.1007/s00784-018-2745-y
5. Muhammed Kerim Ayar , Benefits of Self-Etch Adhesives Active Application with Rotary Brush to Enamel January 2019Vojnosanitetski pregled. Military-medical and pharmaceutical review

References Articles Published About Biofactor MTA (Mineral Trioxide aggregate)

6. Makbule Bilge Akbulut , * Durmus Alperen Bozkurt , Arslan Terlemez , Melek Akman The push-out bond strength of BIOfactor mineral trioxide aggregate, a novel root repair material. Restor Dent Endod. 2019 Feb;44(1):e5.
7. Burak BULDUR, Fatih OZNURHAN, Mevlut KAYABASI, Feride SAHIN .Shear Bond Strength Of Two Calcium Silicate-Based Cements To Compomer . Cumhuriyet Dental Journal: 2018; 21(1)

References Articles Published About References Articles Published About Nova Compo SF (Self Adhesive Flowable Composite)

8. Seda Can¹, Firdevs Kahvecioğlu², Hamdi Acar³, Mustafa Ülker⁴ . Effect of a natural collagen cross-linker on dentin bond strengths of self-adhering flowable composites. Selcuk Dent J, 2016; 3: 63-68
9. Necla Demir,¹ Firdevs Kahvecioğlu,² Muhammet Karcı,^{1*} Hayriye Esra Ülker,³ Nuray Günaydın⁴ In vitro evaluation of the cytotoxicity of different self-adhesive resin cements Acta Odontol Turc 2018;35(2):44-8.
10. M Karcı, N Demir, MG Subaşı¹, M Gökkaya Shear Bond Strength of a Novel Porcelain Repair System for Different Computer-aided Design/Computer-assisted Manufacturing Ceramic Materials. Niger J Clin Pract. 2018 Apr;21(4):507-513. doi: 10.4103/njcp.njcp_127_17.

References Articles Published About Nova Compomer (Compomers)

11. Özge-Erken Güngör 1, Yıldırım Erdoğan 2, Ahmet Yalçın-Güngör 3, Hüseyin Alkış 4 Comparative evaluation of shear bond strength of three flowable compomers on enamel of primary teeth: An in-vitro study. J Clin Exp Dent. 2016;8(3):e322-6.
12. Gungor OE1, Erdogan Y2, Güngör AY3, Alkis H4. In vitro evaluation of microleakage of class V cavities restored with new flowable compomers on the primary teeth. Int J Artif Organs. 2016 May 16;39(3):132-5

References Articles Published About Nova Compo N (Nano Universal Composite)

13. Ali Rıza Cetin, Ahmet Ercan Hataysal, Murat Selim Botsali Depth of cure and hardness of a new composite versus bulk-fill composites, Journal of Research in Medical and Dental Science 2019, Volume 7, Issue 5, Page No: 53-59 Copyright CC BY-NC 4.0

References Articles Published About Glass Ionomer Cements

14. Mustafa Altunsoy1, Evren Ok2, Ebru Küçükyılmaz3, Başak Bölükbaşı3", Mehmet Selim Bilgin4 Comparison of the shear bond strength of different glass ionomer cements to compomer and composite. Selcuk Dental Journal, 2015; 2: 71- 75
15. Osman Sami Ağlarıcı1, Gökçe Garip2, Evren Ok3, Mustafa Altunsoy2 Evaluation of radio-opacity of different base materials using digital phosphor plate. Selcuk Dental Journal, 2015; 1: 7-12
16. Cantekin K1, Delikan E1, Cetin S1. In vitro bond strength and fatigue stress test evaluation of different adhesive cements used for fixed space maintainer cementation. Eur J Dent. 2014 Jul;8(3):314-9
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F) Glass Ionomer Cements

14. Mustafa Altunsoy1, Evren Ok2, Ebru Küçükyılmaz3, Başak Bölükbaşı3", Mehmet Selim Bilgin4 Comparison of the shear bond strength of different glass ionomer cements to compomer and composite. Selcuk Dental Journal, 2015; 2: 71- 75
15. Osman Sami Ağlarıcı1, Gökçe Garip2, Evren Ok3, Mustafa Altunsoy2 Evaluation of radio-opacity of different base materials using digital phosphor plate. Selcuk Dental Journal, 2015; 1: 7-12
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1.

Muhammet Kerim Ayar1 | Fatih Erdemir2 Bonding performance of universal adhesives to Er,Cr:YSGG laser-irradiated enamel .2017 Apr;80(4):387-393. doi: 10.1002/jemt.22807. Epub 2016 Nov 23

The aim of this study was to compare the shear bond strength (SBS) of universal adhesives (Single Bond Universal; Nova Compo-B Plus) applied to Er,Cr:YSGG laser-irradiated enamel with SBS of the same adhesives applied in self-etch and acid-etching modes, respectively. Crown segments of sixty bovine incisors were embedded into standardized acrylic blocks. Flattened enamel surfaces were prepared. Specimens were divided into six groups according to universal adhesives and application modes randomly (n = 10), as follows: Single Bond Universal/acid-etching mode; NovaCompo-B Plus/acid-etching mode; Single Bond Universal/self-etching mode; Nova Compo-B Plus/self-etching mode; and Single Bond Universal/Er,Cr:YSGG Laser-etching mode; Nova Compo-B Plus/Er,Cr:YSGG Laser-etching mode. After surface treatments, universal adhesives were applied onto surfaces. SBS was determined after storage in water for 24 h using a universal testing machine with a crosshead speed of 0.5 mm min⁻¹

2.

Ayar MmK1, Erdermir F2. Bonding strength of universal adhesives to Er,Cr:YSGG Laser-Irradiated Dentin.Niger J Clin Pract. 2018 Jan;21(1):93-98., doi: 10.4103/1119-3077.224792.

OBJECTIVES

Universal adhesives have been recently introduced for use as self-etch or etch-and-rinse adhesives depending on the dental substrate and clinical condition. However, their bonding effectiveness to laser-irradiated dentin is still not well known. Therefore, the aim of this study was to compare the shear bond strength (SBS) of two universal adhesives (Single Bond Universal, Nova Compo-B Plus) applied following laser-etching with SBS of the same adhesives applied in self-etch and acid-etch modes, respectively.

MATERIALS AND METHODS

Sixty bovine incisors were used to obtain the flattened dentin surfaces. Specimens were divided into two groups according to universal adhesives. Each universal adhesive was applied with one of the following modes, self-etch, acid-etch, or laser-etch (n = 10). Er,Cr:YSGG laser was used for laser-etching with 1.5 W-20 Hz parameters. After adhesive applications and composite buildups, SBS was determined after storage in water for 24 h using a universal testing machine with a crosshead speed of 0.5 mm/min. Failure modes were evaluated using a stereomicroscope. Data were analyzed using two-way of analyses of variances (ANOVA) (P = 0.05).

RESULTS

Two-way ANOVA revealed that adhesive had no effect on SBS (P > 0.05), but application mode significantly influenced SBS (P < 0.001). Laser-etch significantly increased SBS for NCP when compared to self-etch mode, whereas laser-etch provided similar SBS with self-etch mode for SBU.

3.

Larissa Blarer & Mutlu Özcan (2018) Adhesion of dual-polymerized luting cement on superficial and deep dentin using different one-step self-etch mild adhesive systems, *Journal of Adhesion Science and Technology*, 32:23, 2604-2616, DOI: 10.1080/01694243.2018.1494399, University of Zürich, Zürich, Switzerland

This study evaluated adhesion of dual-polymerized resin cement to superficial dentin (SD) and deep dentin (DD) using one-step self-etch adhesives at varying pH. After smear layer was created on third molars (N = 60, n = 15 per group), adhesive resins, 1- Clearfil S3 Bond Plus-CBP (Kuraray) (pH: 2.3), 2- Bisco All Bond Universal-BAU (Bisco) (pH: 3.2), 3- Single Bond Universal Adhesive-SBU (3M ESPE) (pH: 2.7), 4- Nova Compo-B Plus-NCBP (Imicryl) (pH: 2.5–3), were applied on SD and DD. Resin cement (Variolink II, Ivoclar Vivadent) was adhered incrementally on the SD surfaces using polyethylene molds and photo-polymerized for 40 s from 5 directions (output: 1200 mw/cm²). After macroshear and microshear test, in order to achieve DD specimens, SD were removed 1 mm in the pulp direction and the same bonding and test procedures were performed. The specimens were kept at 37 °C for 24 h. The adhesion tests were conducted in the Universal Testing Machine and failure types were analyzed. The data were analyzed using Univariate ANOVA, Tukey`s, Kruskal-Wallis and Mann-Whitney tests ($\alpha = .05$). Test method, dentin level and the adhesive resin significantly affected the results (MPa) ($p < .05$). After macroshear test, more incidences of cohesive failures in DD were observed with NCBP Plus. On SD, NCBP presented the highest results followed by BAU using macroshear test. On DD, NCBP presented the highest results followed by SBU. Not only the pH but the chemical composition affected adhesion especially to SD while in DD, the difference between the adhesive resins was less significant.

A4.

Atalayin C1, Tezel H2, Ergucu Z2, Unlu N3, Armagan G4, Dagci T5, Kose T6. The improvement of biocompatibility of adhesives : The effects of resveratrol on biocompatibility and dentin micro-tensile bond strengths of self-etch adhesives. *Clin Oral Investig*. 2018 Nov 10., DOI: 10.1007/s00784-018-2745-y

OBJECTIVE:

The aim of this in vitro study is to evaluate the effects of resveratrol (RES) addition on the cytotoxicity and microtensile bond strength (μ TBS) of different adhesives.

MATERIALS AND METHODS:

Five self-etching adhesives (G-aenial Bond-GC, Optibond All in One-Kerr, Gluma Self Etch-Kulzer, Clearfil S3Bond-Kuraray, and Nova Compo-B Plus-Imicryl) were tested. They were applied to L-929 cell culture by the extract method. In the test groups, 0.5 μ M RES (Sigma-Aldrich) was added into the medium. Cell viability was assessed by MTT assay after 24 h. Human extracted third molars were used for μ TBS test (n = 7). The adhesives with or without 0.5 μ M RES addition were applied on dentin surfaces. A composite build-up was constructed. Then, the specimens were sectioned into multiple beams with the non-trimming version of the microtensile test and subjected to microtensile forces. Statistical analysis was performed using ANOVA and post hoc Tukey test ($p < 0.05$).

RESULTS:

The extracts of all adhesives decreased the cell viability. However, RES addition increased the cell viability in all groups ($p < 0.05$). RES addition did not cause any decrease in μ TBS values of the adhesives compared to baseline. Optibond All in One showed the highest μ TBS after RES addition. It was followed by Clerafil S3 Bond and Nova Compo-B Plus. No difference was determined between the Optibond All in One and Clearfil S3 Bond. There was difference between Optibond All in One and Nova Compo-B Plus ($p < 0.05$).



5.

Muhammed Kerim Ayar , Benefits of Self-Etch Adhesives Active Application with Rotary Brush to Enamel January 2019 Vojnosanitetski pregled. Military-medical and pharmaceutical review

Background/Aim. The aim of this study was to evaluate application of a universal adhesive in a self-etch mode and a self-etch adhesive using a rotary brush active application technique by microshear bond strength (μ SBS) test. **Methods.** The crown parts of 20 bovine teeth were separated from their roots, embedded in acrylic blocks and enamel surfaces were prepared. The prepared crowns were divided into four groups according to the adhesive system tested (1) Nova Compo-B Plus, and (2) Optibond All-in-one, and application technique (1) manual active application and (2) rotary brush active application. Bonded samples were immersed in distilled water for 24-h before bond strength testing by μ SBS test at 1.0 mm / min. Data were analyzed using non-parametric tests ($p = 0.05$).

When both adhesives were applied by rotary brush active application technique, they showed significantly higher enamel bonding strength compared to the manual active application technique.

Conclusion

Application of self-etch adhesives to enamel with a rotary brush active application technique can increase initial resin-enamel bond strength compared to the manual active application.

Results

Findings of μ SBS test was summarized in Table 2. When all adhesives were applied by rotary brush active application technique, they showed significantly higher enamel bonding strength compared to the manual active application technique ($p < 0.05$; Table 2). Nova Combo B-Plus adhesive gave significantly higher bonding strength than the Optibond All-in-one adhesive in both application techniques

6.

Makbule Bilge Akbulut , * Durmus Alperen Bozkurt , Arslan Terlemez , Melek Akman The push-out bond strength of BIOfactor mineral trioxide aggregate, a novel root repair material. Restor Dent Endod. 2019 Feb;44(1):e5.

Objectives

The aim of this in vitro study was to evaluate the push-out bond strength of a novel calcium silicate-based root repair material-BIOfactor MTA to root canal dentin in comparison with white MTA-Angelus (Angelus) and Biodentine (Septodont).

Materials and Methods

The coronal parts of 12 central incisors were removed and the roots were embedded in acrylic resin blocks. Midroot dentin of each sample was horizontally sectioned into 1.1 mm slices and 3 slices were obtained from each root. Three canal-like standardized holes having 1 mm in diameter were created parallel to the root canal on each dentin slice with a diamond bur. The holes were filled with MTA-Angelus, Biodentine, or BIOfactor MTA. Wet gauze was placed over the specimens and samples were stored in an incubator at 37°C for 7 days to allow complete setting. Then samples were subjected to the push-out test method using a universal test machine with the loading speed of 1 mm/min. Data was statistically analyzed using Friedman test and post hoc Wilcoxon signed rank test with Bonferroni correction.

Results

There were no significant differences among the push-out bond strength values of MTA-Angelus, Biodentine, and BIOfactor MTA ($p > 0.017$). Most of the specimens exhibited cohesive failure in all groups, with the highest rate found in Biodentine group.

Conclusions

Based on the results of this study, MTA-Angelus, Biodentine, and BIOfactor MTA showed similar resistances to the push-out testing.

7.

Burak BULDUR, Fatih OZNURHAN, Mevlut KAYABASI, Feride SAHIN .Shear Bond Strength Of Two Calcium Silicate-Based Cements To Compomer . Cumhuriyet Dental Journal: 2018; 21(1)

Objectives:

The purposes of this in vitro study was to compare the bond strength of Biodentine® and Imicryl MTA to a compomer material, and to examine the effect of the setting time on the bond strength.

Materials and Methods:

A total of 100 acrylic blocks with a hole (4 mm in diameter and 2 mm in height) were prepared. Acrylic blocks were randomly divided into two main groups according to cement type to be applied, Biodentine® or Imicryl MTA (n = 50). The specimens of each main group were then divided into 5 subgroups, which were randomized relative to different setting times. (12 minutes, 24 hours, 48 hours, 72 hours, and 96 hours) (n = 10). The samples were filled completely with Biodentine® or Imicryl MTA according to the manufacturer's instructions. Compomer was placed in this transparent tube with the help of a hand plugger and light cured for 40 seconds with the LED device (Elipar™, 3M ESPE, MN, USA) to polymerize the compomer. The acrylic molds were fixed to a universal test machine and shear bond strength (SBS) test was made under shear force at a cross-speed of 1 mm/min. Data were analyzed by a two-way ANOVA and Tukey's post-hoc test (p=0.05).

Results:

While, Biodentine® had significantly higher SBS values than Imicryl MTA at 12m setting time (p<0.05), there was no difference between Biodentine® and Imicryl MTA among other setting periods (p>0.05). Regardless of cements tested, there were similar SBS values among pairwise comparisons between setting time groups (p>0.05).

Conclusions:

There were higher SBS values of Biodentine® to compomer than Imicryl MTA in all setting time groups, the only statistical significance existed in 12 min group.

8.

Seda Can¹, Firdevs Kahvecioğlu², Hamdi Acar³, Mustafa Ülker⁴ . Effect of a natural collagen cross-linker on dentin bond strengths of self-adhering flowable composites. Selcuk Dent J, 2016; 3: 63-68

Background

The aim of this in vitro study was to investigate the effects of a proanthocyanidin-rich extract (grape seed extract) on the dentin shear bond strength of self-adhering flowable composites [Vertise Flow, Kerr; Fusio Liquid Dentin, Pentron; NovaCompo SF, Imicryl]

Methods

Ninety extracted caries free human third molar teeth were used. Cusps of teeth were removed and flat occlusal dentin surfaces were prepared. Dentin surfaces ground with #600-grit SiC paper. The samples were randomly divided into 6 groups (n=15). Dentin surfaces of experimental groups were treated with 20% grape seed extract for 1 min before bonding the composites. Composites were applied by cylindrical shaped plastic matrixes and light cured. For shear bond testing, force was applied at a cross head speed of 1 mm/minute to each specimen at the interface between the tooth and composite until failure occurred. The data were analyzed by One-Way ANOVA and Tukey's HSD Post-hoc tests.

Results

For Nova Compo SF and Vertise Flow, statistically there were no difference between the dentin bond strengths of grape seed extract treated groups and control groups (p>0.05). However, grape seed extract treatment decrease the dentin bond strength of Fusio Liquid Dentin (p<0.05).

Conclusion

Grape seed extract (20%) that is used as a collagen cross-linker did not increase the dentin bond strength of self-adhering flowable composites. Moreover, grape seed treatment adversely affected the dentin bond strength of Fusio Liquid Dentin



9.

Necla Demir,¹ Firdevs Kahvecioğlu,² Muhammet Karcı,^{1*} Hayriye Esra Ülker,³ Nuray Günaydın⁴
In vitro evaluation of the cytotoxicity of different self-adhesive resin cements *Acta Odontol Turc*
2018;*35*(2):44-8.

OBJECTIVE

The aim of this in vitro study was to evaluate the cytotoxicity of three different self-adhesive resin cements.

MATERIALS AND METHOD

Standardized test samples (2×5 mm) of adhesive resin cements ICEM (Heraeus Kulzer, Hanau, Germany), Nova Resin (Imicryl, Konya, Turkey) and Clearfil SA Cement (Kuraray, Okuyama, Japan) were prepared according to the manufacturers' instructions. Bovine dental pulp-derived cells (Clonal SV40) were seeded into the wells of a 96 well-plate, and incubated in MEM Alpha (Gibco Invitrogen) supplemented with 20% fetal bovine serum, 5% penicillin/streptomycin, 1% geneticin in a humidified atmosphere of 5% CO₂. The test samples were immersed in the growth medium for 24 h and the extracts were applied onto the cells. A group of cells was immersed in the growth medium that was not exposed to the test materials, and was assigned as negative control. The cell viability was determined by enzyme activity tests at the end of a 24 h treatment period. The data were statistically analyzed using one-way ANOVA.

RESULTS

There was no statistically significant difference between the cell viability of the negative control group and ICEM, Clearfil SA and Nova Resin Cement groups ($p > 0.05$). There was also no statistically significant difference among the self-adhesive resin cement groups ($p > 0.05$).

CONCLUSION

In this in vitro study, self-adhesive resin cements were found to have no significant cytotoxic effects on two dimensional dental bovine pulp cells.

10.

M Karcı, N Demir, MG Subaşı¹, M Gökkaya Shear Bond Strength of a Novel Porcelain Repair System for Different Computer-aided Design/Computer-assisted Manufacturing Ceramic Materials. *Niger J Clin Pract.* 2018 Apr;*21*(4):507-513. doi: 10.4103/njcp.njcp_127_17.

OBJECTIVES

The purpose of this study was to compare the shear bond strength of a novel repair system, Nova Compo SF with Ceramic Repair, Ivoclar, to computer-aided design/computer-assisted manufacturing (CAD/CAM) restorative materials (IPS e.max CAD and Empress CAD).

MATERIALS AND METHODS

The specimens of each CAD/CAM restorative material were randomly divided into two subgroups of nine specimens, using one of two repair systems. All specimens were etched with hydrofluoric acid and rinsed under a water spray for 10 s, then air-dried for 10 s. Next, repair systems were applied according to the manufacturer's instructions. All specimens were stored in distilled water at 37°C for 24 h and then additionally aged for 5000 thermal cycles. A shear bond strength test was performed using a universal testing machine. Each fracture type was examined under a stereomicroscope at ×12.5 magnification. A two-way ANOVA test was used to detect significant differences between the CAD/CAM restorative materials and the composite repair systems. Subgroup analyses were performed using Tukey's honest significant difference.

RESULTS

No statistically significant differences were observed between the repair systems ($P = 0.9$). The bond strength values from Empress CAD were statistically higher than those from e.max CAD ($P < 0.05$).

CONCLUSIONS

Within limitations, SuperFlow may be an alternative to the ceramic repair materials we routinely used in the clinic. Empress CAD can be preferable to e.max CAD in terms of esthetically suitable clinical indications.

11.

Özge-Erken Güngör 1, Yıldırım Erdoğan 2, Ahmet Yalçın-Güngör 3, Hüseyin Alkış 4 Comparative evaluation of shear bond strength of three flowable compomers on enamel of primary teeth: An in-vitro study. *J Clin Exp Dent.* 2016;8(3):e322-6.

Abstract Background

The aim of the present study was to determine Shear bond strength (SBS) of different flowable compomers on the enamel surface of primary teeth. The null hypothesis to be tested was that none of the flowable compomer would differ significantly from the other two with respect to SBS. As a result, the tested materials that have the easiest application on child patient is preferred.

Material and Methods

Sixty newly extracted non carious primary molars were selected. The buccal surface was cleaned and polished to obtain a flat enamel surface. The specimens were randomly divided into three groups of 20 teeth each, based on the flowable compomers applied, as follows: group I: Dyract Flow® (Dentsply, Konstanz, Germany); group II: Twinky Star Flow® (Voco, Cuxhaven, Germany); and group III: R&D Series Nova Compo-mer Flow® (Imicryl, Konya, Turkey).

Results

SBS in group II (6.78 ± 0.45 MPa) were significantly lower than groups I and III (8.30 ± 0.29 and 8.43 ± 0.66 MPa, respectively) ($P < .001$). No significant difference was found between groups I and III ($P < .05$).

Conclusions

Significant differences existed between the SBS of the groups. Therefore, the null hypothesis was rejected. Flowable compomers can provide adequate SBS with self-etching system at restoration of primary teeth. Thus, successful restorations in pediatric patients can be done in a practical way.

12.

Gungor OE1, Erdogan Y2, Güngör AY3, Alkis H4. In vitro evaluation of microleakage of class V cavities restored with new flowable compomers on the primary teeth. *Int J Artif Organs.* 2016 May 16;39(3):132-5

INTRODUCTION

The aim of the study was to evaluate the in vitro microleakage of new flowable compomers in the class V cavities of primary teeth.

METHODS

Thirty freshly extracted, non-cariou, primary molars without visible defects were used in this study. Class V cavities ($n = 60$), with the occlusal and cervical margins located in the enamel, were prepared on the buccal and lingual surfaces. The samples were randomly divided into 3 groups of 20 each. Group 1: restored with Twinky Star Flow (Voco, Cuxhaven, Germany), Group 2: restored with Dyract Flow (Dentsply, Konstanz, Germany) and Group 3: restored with R&D Series Nova Compomer Flow (Imicryl, Konya, Turkey) according to the manufacturer's instructions. After a thermocycling regimen of 1000 cycles between 5°C and 55°C , the samples were isolated, immersed in 0.5% basic fuchsin solution for 24 h at 37°C and sectioned longitudinally in a buccolingual direction. The sections were evaluated for values of microleakage with a stereomicroscope.

RESULTS

All materials showed microleakage but no statistically significant difference was observed among the groups ($p > 0.05$). The highest microleakage score was observed in group II (1.65 ± 0.49) and group I (1.75 ± 0.44) at occlusal and gingival margins, respectively.



13.

Ali Rıza Cetin, Ahmet Ercan Hataysal, Murat Selim Botsali Depth of cure and hardness of a new composite versus bulk-fill composites, *Journal of Research in Medical and Dental Science* 2019, Volume 7, Issue 5, Page No: 53-59 Copyright CC BY-NC 4.0

Aim or purpose

To compare the depth of cure of new composite with bulk fill resin composites through using Vickers hardness profiles (VHN).

Materials and methods

New composite and four bulk fill composite materials were examined: Tetric EvoCeram® Bulk Fill, X-tra base, CompoN, Filtek Posterior Bulk Fill, SonicFill™. Eight specimens of each material type were prepared in teflon molds which contained a slot of dimensions (10 mm × 4 mm × 2 mm), and a top plate. The molds were irradiated from one end. All specimens were stored at 37°C for 24 h, before measurement. The Vickers hardness was measured as a function of depth of material, at 1 mm intervals. Data were analyzed by one-way ANOVA using Tukey post hoc tests ($p = 0.05$).

Results

The maximum VHN ranged from 46.7 to 68.1, whilst the 80% of max.VHN ranged from 37.4 to 54.5. The depth corresponding to 80% of maximum VHN ranged from 5.5 to 7 mm. This was taken as the depth of cure.

Conclusions

New composite can be cured to an acceptable post-cure depth as Bulk fill resin composites, according to the manufacturers' claims. X-tra base had the greatest depth of cure among the composites examined.

14.

Mustafa Altunsoy¹, Evren Ok², Ebru Küçükyılmaz³, Başak Bölükbaşı³, Mehmet Selim Bilgin⁴ Comparison of the shear bond strength of different glass ionomer cements to compomer and composite. *Selcuk Dental Journal*, 2015; 2: 71- 75

Background

The aim of this study was to compare the shear bond strength (SBS) of four different glass ionomer cements to compomer and composite.

Methods

Eighty cylindrical acrylic blocks with a hole (3 mm in diameter and 2 mm in height) were prepared. The acrylic blocks were divided into 4 groups and filled with glass ionomer cements (Ionoseal, Ketac Molar, Equia, and Imicryl). Single step self-etch adhesive were applied to surface of glass ionomer cement and polymerized. Each group divided into 2 subgroups ($n=10$). Compomer and composite were applied over glass ionomer cements by means of a plastic cylinder with a height and diameter each of 2 mm and polymerized with LED according to the manufacturer's recommendations, from the side of the cylinder. SBS was tested for failure using a knife-edge blade in a universal testing machine. The data were analyzed using Two-Way Analysis of Variance (ANOVA) and Tukey test ($p=0.05$).

Results

Ionoseal showed significantly higher SBS to compomer and composite than other glass ionomers ($p<0,05$). There was no statistically differences between SBS of Ketac Molar, Imicryl, and Equia to compomer and composite ($p>0,05$).

Conclusion

Ionoseal showed higher SBS to composite and compomer than Ketac Molar, Equia, and Imicryl.

15.

Osman Sami Ağlarıcı¹, Gökçe Garip², Evren Ok³, Mustafa Altunsoy² Evaluation of radio-opacity of different base materials using digital phosphor plate. *Selcuk Dental Journal*, 2015; 1: 7-12

Background

The radiopacity of cavity base materials has been considered as an important requirement, improving the radiographic diagnosis. The advantages of radiopacity over radiolucent materials are the easy detection of recurrent dental caries and observation of the radiographic interface between the materials and tooth surfaces. This study aims to investigate the radiopacity of glass ionomer cements (GICs) and flowable resin composites (FRCs) using a digital phosphor plate, comparing them to the dental tissues (enamel-dentine), expressed as equivalent thickness of aluminum.

Methods

Three disk-shaped specimens, 10 mm in diameter and 1 mm in thickness were prepared for each material. Specimens of enamel and dentine with the same thickness were obtained as a control. After setting of the base materials, specimens were placed on a phosphor plate together with aluminum step-wedge (1 to 16 mm in thickness) and were exposed using a dental x-ray unit. Three measurements of radiographic density were obtained from each image of each item assessed (base material, enamel, dentin, each step of the aluminum step-wedge) and the mean of these values was calculated. Radiopacity values were later calculated as equivalents of aluminum thickness. Data were analyzed by ANOVA and Tukey's test.

Results

As the Vertise Flow is the only material that showed higher radiopacity than enamel, other materials presented significantly lower radiopacity than it ($p < 0.005$). Vertise Flow, Nova Glass-F and Equia Fil showed significantly higher radiopacity than dentine ($p < 0.005$). However, no significant difference in radiopacity was observed between G-aenial Universal Flo, Ionoseal and dentine ($p > 0.05$).

Conclusion

Equia Fil, Nova Glass-F, and Vertise Flow have higher radiopacity than dentin. However radiopacity value of base materials varies considerably. So this should be taken seriously when selecting materials.

16.

Cantekin K1, Delikan E1, Cetin S1. In vitro bond strength and fatigue stress test evaluation of different adhesive cements used for fixed space maintainer cementation. *Eur J Dent*. 2014 Jul;8(3):314-9

The purposes of this research were to (1) compare the shear-peel bond strength (SPBS) of a band of a fixed space maintainer (SM) cemented with five different adhesive cements; and (2) compare the survival time of bands of SM with each cement type after simulating mechanical fatigue stress.

MATERIALS AND METHODS:

Seventy-five teeth were used to assess retentive strength and another 50 teeth were used to assess the fatigue survival time. SPBS was determined with a universal testing machine. Fatigue testing was conducted in a ball mill device.

RESULTS:

The mean survival time of bands cemented with R & D series Nova Glass-LC (6.2 h), Transbond Plus (6.7 h), and R & D series Nova Resin (6.8 h) was significantly longer than for bands cemented with Ketac-Cem (5.4 h) and GC Equia (5.2 h) ($P < 0.05$).

CONCLUSION:

Although traditional glass ionomer cement (GIC) cement presented higher retentive strength than resin-based cements (resin, resin modified GIC, and compomer cement), resin based cements, especially dual cure resin cement (nova resin cement) and compomer (Transbond Plus), can be expected to have lower failure rates for band cementation than GIC (Ketac-Cem) in the light of the results of the ball mill test.



17.

Mustafa Altunsoy, Gökçe Garip, Uğur, Türkan Mehmet, Emin, Uslu Sibel Silici Effect Of Propolis Added In Different Proportions To Fissure Sealant On Shear Bond Strength And Microhardness. EÜ Dişhek Fak Derg 2015; 36_1: 32-37

OBJECTIVE

To investigate the effect of ethanolic extracts of propolis (EEP) added in various proportions to fissure sealant on shear bond strength (SBS) and microhardness. METHODS: The sealant was divided into six groups: one using the original composition and five with 0.5 %, 0.35 %, 0.21 %, 0.13 % and 0.10 % EEP added to the fissure sealant. After etching, the fissure sealant with various propolis proportions were applied to teeth and light cured. SBS was evaluated in a universal testing machine. Disc shaped specimens were prepared from tested fissure sealants to determine Vickers hardness (VHN). SBS and microhardness values were analyzed using One Way ANOVA and Tukey HSD tests.

RESULTS

SBS values of 0,5 %, 0,35 % and 0,21 % propolis-containing groups showed failure on bonding. SBS values of 0,13 % and 0,10 % propolis-containing groups were not statistically significantly different compared with control group ($p > 0.05$). 0,35 propolis-containing group showed the highest microhardness values compared to other groups ($p < 0.05$). Control, 0,13 % and 0,5 % propolis-containing groups showed higher VHN values than 0,21 % and 0,10 % ones ($p < 0.05$).

CONCLUSION

The addition of 0.13 % and 0.10 % propolis to fissure sealant did not cause a change in SBS. Therefore, it can be used safely during routine dental practice due to its antibacterial properties.



NOVA COMPO-B PLUS ADHESIVE



Compo B Plus is a light-cure ethanol/water-based, self-etching, one-step, (All In One) 7th Generation longterm bonding agent.

Contains 2 functional monomers to form a better double chemical adhesion.

MDP monomer optimizes self-etch performance, increases shelf stability and provides durability of adhesion. 4-META monomer enhances dentin bond strength.

BiOfactor MTA



BIOfactorMTA (mineral trioxide aggregate) is a tricalcium silicate–based bioactive repair cement that can be used universally for pediatric indications in primary and permanent teeth.

NOVA COMPO SF



Self Adhesive Flowable Composite (No Need Bonding)

Nova Compo-Sf Super Flow is the first MDP and 4-META containing self adhering flowable dental composite. It combines the benefits of adhesive and composite technology into one product.



NOVA COMPOMER



Compomer-based light-curing dental restorative material with high and long term fluoride release. Nova Compomer combines the benefits of glass ionomers and composites in one material. Nova Compomer is recommended for caries and secondary caries are likely to development risk areas that deciduous teeth and cervical defects. Nova Compomer releases a high level and long term of protective fluoride ions.

NOVA COMPOMER FLOW



Compomer-based, light-curing, dental restorative material with high fluoride release. Nova Compomer Flow combines the benefits of glass ionomers and composites in one material. Nova Compomer Flow releases a high level and long term protective fluoride ions. Nova Compomer Flow offers a flowable consistency that is designed for the requirements and indications associated with compomers. The material is directly injected into the cavity. Nova Compomer Flow automatically adapts itself to the cavity margins because of its flowable consistency.

NOVA COMPO N



Nano Hibrit Universal Composite

Light curing, radiopaque, nano hybrid composite for anterior and posterior restorations. Contains low syhrinkage modified urethane dimethacrylate. The modified monomer enhances high percent elongation, toughness and reduced syhrinkage stress to improve the durability of restorations.

COLOR A1 A2 A3 A3.5 B1 B2 AO2 UD

NOVA GLASS F



Radiopaque Glass Ionomer Filling Cement
Compatible with pulp and tissue. High wear resistance.
High adhesion values. Low particle size. High and long-term fluoride release.
A1, A2, A3, A3.5, A4, B1, B2, B3 colours selections.

NOVA GLASS L

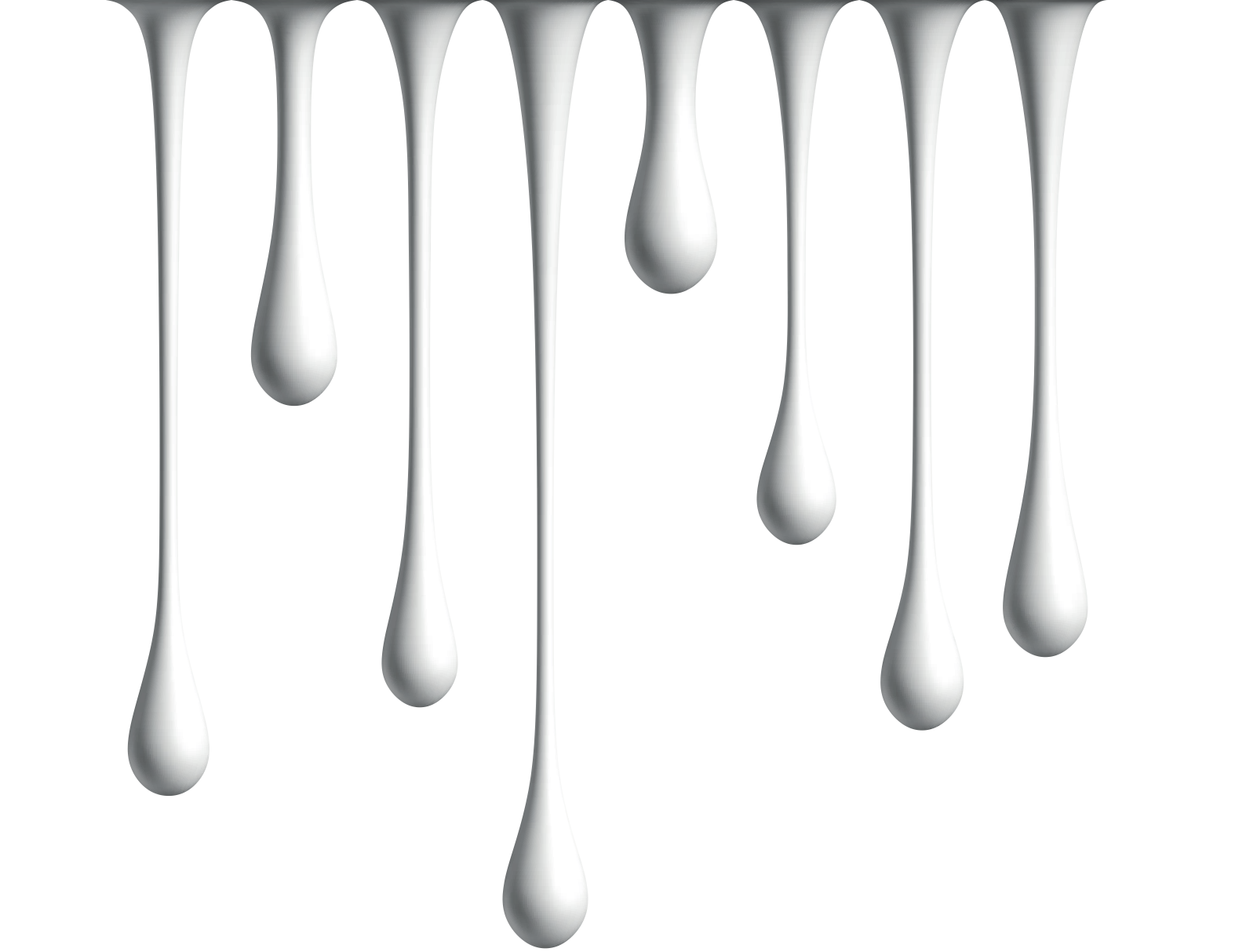


Radiopaque Glass Ionomer Luting Cement.
Good working time, good mixing properties. Low particle size
High radiopacity. High and long-term fluoride release. Optimum wetting of powder and liquid. Universal and white colours selection

NOVA GLASS LC



Radiopaque Light Cure Glass Ionomer Cement
Radiopaque resin reinforced self adhesive light cure glass ionomer cement. Designed specially as a restorative material for use in Class III, Class V and deciduous teeth, also used for secondary indications such as liner, base and core build-up. Adhesion to dentin, fluoride release and reduced sensitivity to humidity.



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