2009

Clinical performance of soft start polymerized V class composite

K Elrabahi, C Renz, A MEHL, H HICKEL (Department of Restorative Dentistry, Medical Faculty of University of Giessen, Germany)

Interfacial stress due to polymerization shrinkage can cause bonding of composite materials from tooth structures. Light cured units with a low output energy are considered to reduce intraluminal stress of composites. The aim of this study was to evaluate the effect of soft start polymerization on composite restorations. 104 Class V, smooth surface cavities or abrasion lesions involving root surfaces were sealed with class V composite restorations. 52 patients were examined after 6 months. The patients were divided into two groups: Group A received a standard light cured composite restorative system (Eskalit, Caries and Esthetic System), and Group B received the system with the soft start method. Statistical analysis was performed using the t-test. The 2 year recall showed 98% retention with 94% acceptable (Afika, Bravo) color match. The restoration was retained in 98% of the cavities. Clinical examination parameters were statistically significant differences between the two polymerization schemes. None of the restorations fell to secondary cavity or post retention.

The study confirmed that the soft start polymerization method improved the performance of the composite in Class V restorations after 2 years. Soft start polymerization does not provide additional benefits. This study was supported by ESPE Dental GmbH & Co.

2010

Eighteen month evaluation of ART fillings placed in Chinese preschool children

E D M LO* C J HOLMGREN (Faculty of Dentistry of University of Hong Kong)

The aim of this study was to evaluate longitudinally the status of ART fillings placed in primary teeth under field conditions in Chinese preschool children. In December 1996 a total of 170 ART fillings were placed in the primary teeth of 95 children aged 3-8 years in a kindergarten in southern China by seven final year dental students working under clinical supervision. The materials were methacrylate amalgam (ESPE-B) and glass ionomer cement (Hycel, Hycel). The fillings were evaluated every 6 months thereafter by two independent dentists. The evaluation criteria were success ( filling present and not needing replacement) and failure ( filling dislodged or in need of replacement). In each of the follow up examinations over 60% of the fillings were evaluated.

The results were as follows:

<table>
<thead>
<tr>
<th>Class</th>
<th>No placed</th>
<th>6 months</th>
<th>12 months</th>
<th>18 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>48</td>
<td>90</td>
<td>91</td>
<td>89</td>
</tr>
<tr>
<td>2</td>
<td>48</td>
<td>37</td>
<td>36</td>
<td>38</td>
</tr>
<tr>
<td>3</td>
<td>48</td>
<td>37</td>
<td>36</td>
<td>38</td>
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<tr>
<td>4</td>
<td>48</td>
<td>37</td>
<td>36</td>
<td>38</td>
</tr>
<tr>
<td>5</td>
<td>48</td>
<td>37</td>
<td>36</td>
<td>38</td>
</tr>
</tbody>
</table>

The differences in success rates between class types were statistically significant in all three examinations (Chi-squared test: p<0.001). These results showed that the success rates of Class 1 and Class 5 ART fillings placed in primary teeth in Chinese preschool children were significantly higher than the other classes.

This study was supported by ESPE Dental Medic GmbH & Co.

2011

Clinical evaluation of a new adhesive system: six months results

M C PETERS, J B DENNING, M E McLEAN, K STOFFERS & R HAMILTON (Dept of Restorative Dentistry & School of Dental Medicine, University of Michigan, USA)

This study is a clinical investigation to determine the efficacy of a new adhesive system (Prime & Bond NT (PBNT)) in combination with three different surface treatments (non-conditioning, conditioning) and three different adhesives. The study will be designed to evaluate the retention rates of restorative materials on non-restored and restored surfaces. A group of 60 patients with caries free enamel, which had received 105 restorative procedures according to three different protocols (A) PBNT DivaSmart AP (B) PBNT-PS-CT (C) CT-PS-CT-PBNT-PS. Each patient received four different restorations. The first protocol included dentine surface application containing phosphoric acid and no further cavity preparation or sealing. The second protocol was placed by dental students according to the manufacturer's instructions. Clinical examination with independent examiners at baseline and six months using modified USPHS criteria. Six months data available. The following findings are preliminary: At 6 months 97% of the restorations were adjudged to be good or excellent according to the USPHS criteria. Overall retention at 6 months was 78% (n=60). The results indicated a 1-year survival rate of 98%. The two restorative systems which failed early in the study were from a patient who was treated for a second time.

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2012

Clinical evaluation of a glass ionomer based dental adhesive: two years results

B BOURNE, Z L JUERGHEM, N J KREIBICH (School of Dentistry, The University of Melbourne, Australia)

The use of glass ionomer based cements for restorations has become widespread but rests restricted because of physical and aesthetic limitations. To overcome this problem a resin modified glass ionomer based adhesive, Fuy Bond LC (GC Co, Tokyo, Japan) was introduced which allows the advantages of glass ionomer technology to be combined with the advantages of resin composite restorative materials. The aim of this study was to evaluate the clinical performance over 2 years of Fuy Bond LC placed in cavities in 100 patients. Fuy Bond LC was used on 100 patients with 400 cavities. The data were collected according to the manufacturer's instructions. Data collection was performed by Fuy Bond LC. The data were collected every 6 months using modified USPHS criteria. The data were collected using digital photographs for the evaluation of marginal distortion.

At 1 year 95% of the restorations were present and no significant change from baseline to year 1 was observed (p>0.05). The degree of marginal distortion was such that it would not be of clinical significance. It was concluded that Fuy Bond LC is an excellent alternative for the prevention of marginal leakage, with minimal marginal distortion and a very high retention rate.

2013

Clinical evaluation of root canal therapy in the treatment of non-surgical root resorption

E D M LO* C J HOLMGREN (Faculty of Dentistry of University of Hong Kong)

Previous studies have investigated pulp responses to denal sealing and pulp capping using a dentinal adhesive resin system. The purpose of this study was to evaluate if the method allows for conservation of the dental pulp on a routine clinical basis.

A total of 18 permanent teeth (17 molars and premolars) were extracted in 16 adult patients aged 16-50 years. The teeth were extracted because of caries or non-restorable fractures and were diagnosed as being in the stage of active proliferation and B1. The teeth were either immediately restored or within a time period of 10 days. Control examinations were included. The teeth were examined for signs of pulpal vitality and signs of pulpal deactivation, using thermal stimuli. The results indicated that pulp capping with this specific dentinal adhesive resin system may represent a promising method to regenerate the pulp (for pulpal regeneration).