A practice-based evaluation of 3M Espe RelyX Unicem Clicker

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The handling of a given material by one operator is necessarily subjective, but when practitioners band together to form a group in order to assess the handling of new materials in dental practice, the results are likely to be more objective and generalisable.

All of this is possible when practitioner-based research groups are teamed with the expertise available in academic institutions. A UK-based group of practice-based researchers is the PREP (Product Research and Evaluation by Practitioners) Panel. This group was established in 1993 with six general dental practitioners, and has grown to comprise 30 dental clinical trials of up to five years assessing the performance of restorative techniques in dental practice.

The group currently have five clinical evaluations of novel materials under way, for example the practice-based evaluation of 50 Lava (3M Espe, Seefeld, Germany) bridges.

Resin-based luting materials

These materials were, in the past, technique-sensitive to use, given the need for etching and bonding steps prior to placement of the indirect restoration with the luting agent. The introduction, five years ago, of RelyX Unicem (3M Espe, Seefeld, Germany), a self-etch, and therefore self-adhesive luting material, removed much of the technique sensitivity from resin luting, with the PREP Panel finding that this material was as easy to use as a conventional acid-base luting material.

In this respect, improving the ease with which the clinician can use a luting material will be more likely to produce an optimally performing restoration. Accordingly, the assessment of the handling of a new luting material, or a new method of delivery, is of importance.

Rely X Unicem was originally introduced as a powder/liquid formulation (Aplicap) necessitating mixing in a vibrating mixer.

It also required a number of steps prior to mixing to activate the capsules, as well as necessitating the loading of the capsule into a dispenser.

The manufacturers have therefore responded to criticisms of the number of stages in the original RelyX Unicem Aplicap by introducing another version of the material in a paste/paste formulation, Rely X Unicem Clicker.

Materials and methods

The product under evaluation was RelyX Unicem, a self-adhesive dual-cure resin luting material in the Clicker dispenser (3M Espe, Espe Platz, 82229 Seefeld, Germany). Contact details: 3M Espe Customer Service UK. Telephone: 0870 870 8708.

The number of restorations required to carry out an evaluation of a resin-based luting material, 16 members were selected at random to conduct the evaluation. Two of them were female. The average time since graduation was 23 years, with a range of seven to 39 years.

An explanatory letter, questionnaire and three packs of the RelyX Unicem Clicker in each of the three shades (A2 Universal, A3 Opaque, and Translucent) were distributed in April 2006. The practitioners were asked to use the material in situations where they were indicated clinically and return the questionnaire after 10 weeks of use of the materials.

Results

Background information

The number of resin-retained (or resin-bonded) restorations, such as composite and ceramic inlays and dentine-bonded crowns, placed by the evaluators in a typical month, was:

<table>
<thead>
<tr>
<th>Number of restorations</th>
<th>Number of evaluators</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;5</td>
<td>4</td>
</tr>
<tr>
<td>6-10</td>
<td>4</td>
</tr>
<tr>
<td>&gt;10</td>
<td>8</td>
</tr>
</tbody>
</table>

A variety of resin-based luting materials were evaluated by the evaluators prior to the evaluation, with some evaluators using more than one material. The main reasons for the choice of these materials were ease of use, reliability, familiarity and good clinical reports. Other reasons stated were number of shades, lack of sensitivity, avoidance of the need to etch and bond, and self-adhesive.

The majority of the evaluators did not use a "conventional" luting system for 10 years.

The main reasons for the choice of these materials were consistently good results, ease of use and low cost. Other reasons stated were familiarity, capillary mixing, lack of post-operative sensitivity, speed of set and natural adhesiveness to tooth material.

When the evaluators were asked to rate the overall ease of use of the resin luting system currently used, the result was as follows:

<table>
<thead>
<tr>
<th>Difficulty</th>
<th>Easy to use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor</td>
<td>Easy to use</td>
</tr>
<tr>
<td>1</td>
<td>5</td>
</tr>
</tbody>
</table>

Comments made regarding the instructions included “very easy to follow…”. A total of 298 restorations were placed using RelyX Unicem Clicker.

When the evaluators were asked to rate their, and their dental nurses’, assessment of the dispensing and handling of RelyX Unicem, the result was as follows:

<table>
<thead>
<tr>
<th>Convenience</th>
<th>Inconvenient</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5</td>
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</table>

Twelve (75%) of the evaluators stated that sufficient shades of RelyX Unicem were available. One of the remainder commented that a “bleached” shade was needed. All (100%) of the evaluators agreed that it was a clinical advantage not to need etching and bonding prior to luting.

When asked how much of an advantage, the replies were as follows:

Very advantageous: 14 evaluators
Quite advantageous: 1 evaluator
Slightly advantageous: 1 evaluator

Evaluation of RelyX Unicem Clicker

The evaluators rated the presentation of the various components as follows:

(a) Clicker