

CLINICAL PERFORMANCE OF A SELF-ADHESIVE UNIVERSAL RESIN CEMENT; INITIAL FINDINGS

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INTRODUCTION

- 1993 saw the establishment of a group of practicing dental practitioners, the PREP (Product Research and Evaluation by Practitioners) Panel¹, prepared to complete evaluations of new materials and techniques in the practice environment.
- To date, over 40 evaluations, including handling evaluations and clinical trials^{2,3}, have been completed. The PREP panel presently has 25 members with an average time since graduation of 21 years. The Panel has a UK-wide distribution and a wide range of dental interests facilitating the assessment of a full range of products and techniques.
- The results of a PREP panel evaluation of the handling properties of the self-adhesive universal resin cement, RelyX Unicem (3M ESPE, Seefeld, Germany) in clinical use in 13 UK dental practices were reported in 2003⁴. During the placement of 144 restorations the new material was rated higher for 'ease of use', by the participating general dental practitioners (GDPs) than previously used 'conventional' and resin-based luting materials.
- The purpose of this study is to evaluate the clinical performance of this material at 24 months, in terms of retention of the restorations, marginal adaptation and staining, and post-operative sensitivity.

METHOD

- A questionnaire was designed for completion by the GDPs involved in the original evaluation when the patients with the restorations cemented with the self-adhesive luting material returned for their routine recall examinations.
- Modified Ryge criteria (Fig. 1) were used for the scoring of marginal adaptation and marginal staining. Notation, age of restoration and pain at cementation, with any subsequent pain and duration, and the presence of any porcelain cracks were also recorded.

MATERIAL

- RelyX Unicem is a novel encapsulated, self-adhesive, dual cure resin-based material indicated for the luting of all inlays (porcelain, composite & metal), onlays, crowns and bridges as well as cast and fibre posts.

<p>Marginal adaptation 0 = Restoration is contiguous with existing anatomic form, sharp explorer does not catch 1 = Explorer catches, no crevice is visible into which the explorer will penetrate 2* = Crevice at margin, enamel margin exposed. 3* = Obvious crevice at margin, dentine or lute exposed</p> <p>Marginal discolouration 0 = No discolouration present 1 = Slight staining present, can be polished away. 2 = Obvious staining, cannot be polished away 3* = Gross staining</p>

Fig. 1: The modified Ryge criteria

RESULTS

- To date 46 restorations (in 44 patients) of the original 144 restorations placed using RelyX Unicem, have been reviewed. The mean age of the restorations was 21.4 months.
- Four restorations, all in patients of one operator, were reported to have failed at the time of this report. The reasons for these failures were unconnected with the use of the resin cement under investigation (root fracture, porcelain fracture, and unrelated enamel chipping).
- The results from the remaining 91% (n=42) of the restorations are summarised in Fig. 2. These restorations comprised of:
 - 14 All-ceramic restorations (6 veneers, 3 porcelain jacket crowns, 4 ceramic inlays and 1 ceramic bridge)
 - 14 All – metal restorations (5 posts & 9 crowns)
 - 13 Metal/ceramic restorations (11 crowns and 2 bridges)
 - 1 Fibre post.
- A porcelain crack was detected in one metal/ceramic restoration and one other patient (who had generalised dentine hypersensitivity) complained of transient pain six months after cementation.

CRITERIA	SCORE (%)			
	0	1	2	3
Marginal Adaptation	76	22	2*	0*
Marginal Staining	81	17	2	0*

Fig. 2: Summary of Results

DISCUSSION

Forty-two restorations were examined and one (2%) unacceptable* score (for marginal adaptation) was recorded. The remaining restorations were performing satisfactorily.

CONCLUSION

This initial report suggests the material under investigation is performing satisfactorily in UK general dental practice after 21 months. A longer evaluation period and a larger sample are needed to assess continued performance.

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