'Evaluation of Single-unit Light-cured Composite Temporary Crowns in General Practice'

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INTRODUCTION

In 1993 the UK-wide practice- based research group the PREP (Product Research and Evaluation by Practitioners) Panel was established. To date over 40 evaluations and clinical trials have been completed and the results published.

MATERIAL

Protemp™ Crown, (3M™ ESPE™ , St Paul, MN, USA) is a single-unit light-cured composite posterior temporary crown supplied in a range of nine sizes and forms (molar, pre-molar and canine).

METHOD

After Ethical Approval, a supply (of the nine sizes and forms) of the temporary crowns was provided to three UK general dental practitioner (GDP) members of the PREP Panel, with practices in Coleraine, Liverpool and Shrewsbury for use over a period of one year. A baseline questionnaire was completed by the clinician, recording tooth sensitivity, crown preparation form, contact tightness, and (using modified Ryge criteria[1]) the marginal adaptation and anatomic form of the crown, together with information on the clinician's previously used temporisation technique. The adjacent gingival status and ease of placement was also noted. At the permanent crown fit appointment these criteria were re-scored, in addition to information regarding re-cementation or loss of the temporary crown.

BACKGROUND INFORMATION

Prior to using the product under evaluation, an alginate impression and a self-cure bis-acrylic based temporary crown material technique was used by all the clinicians

RESULTS

59 temporary crowns in 53 patients were in place for an average of 13.9 days (Range 2- 40 days). One crown (2%) was observed to be fractured at the fit appointment. Eight crowns (14%) were lost and four crowns (7%) were recemented.

Table 1. Distribution of the temporary crowns

Notation	Number	%
Upper Molar	21	36
Upper Premolar	9	15
Upper Canine	1	2
Lower Premolar	5	8
Lower Molar	23	39
Total	59	100

Table 2. Percentage of criteria optimal scores

Criteria	Baseline	Fit
Marginal Adaptation	42	48
Anatomic Form	46	36
Proximal contact	48	54
Gingival status	83	69

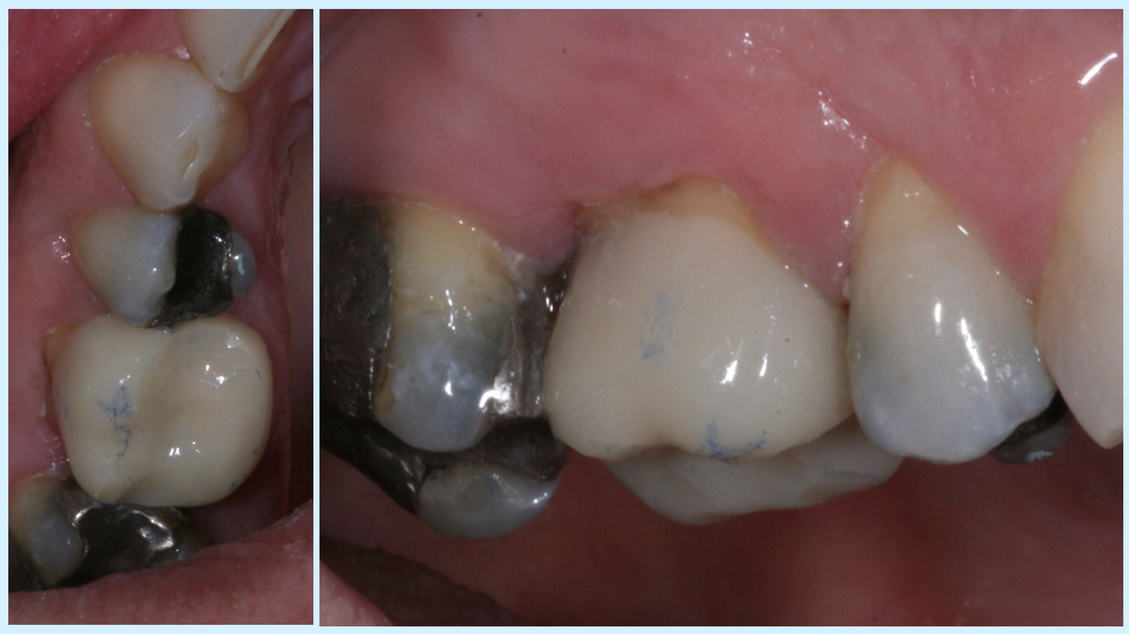
Table 3. Sensitivity

At Preparation	90% (53 cases)	10% (6 cases)
At Fit	80% (47 cases)	20% (12 cases)

The evaluators stated that some staining of the temporary crowns was observed in 38% of cases (range 3-60%) and that the staining on average was acceptable for a posterior crown.

The evaluators scored the ease of placement of the Protemp crowns as 1.7 on a Visual Analogue Scale (where 5 = difficult to use and 1= easy to use).

Fig.1 Protemp Crown in place



DISCUSSION

It was noted that all the cases of intermittent sensitivity at the fit appointment were from one clinician and on further investigation it was found that this clinician had, in some cases, varied the manufacturer's recommended technique and had cured the crown in situ intra-orally. The resulting exothermic reaction may have caused some pulpal inflammation.

CONCLUSION

The Protemp temporary crowns performed well for the period between preparation and fit of the permanent restoration and it was suggested that these crowns could also potentially perform well over a longer period.

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