

The Evaluation of a Nano-filled Composite in a German General Practice

M.LIEBLER*¹, F.J.T.BURKE² and R.J.CRISP²

1. General Practice, Nuremberg, Germany 2. University of Birmingham School of Dentistry, UK

INTRODUCTION

The majority of dental treatment worldwide is carried out in dental practice, so if a new material is to be successful it must perform well in the hands of general dental practitioners (GDPs). Research in practice is now well established, as recognised by the formation of the IADR Practice Based Research Network (PB-RN) and the associated Pan-European Region PB-RN.

MATERIAL

Filtek™ Supreme™ XT* is a nano-filled composite restorative material used in conjunction with the Adper™ Scotchbond™ 1 XT Dental Adhesive* system (*3M ESPE Seefeld, Germany).

METHOD

The study was run as multi-centre observational study in 3 European general dental practices with sites in Italy, Germany and the UK. The medium to large Class 1 and small to medium Class II restorations in adult patients were reviewed at 6 & 12 months by the GDP placing the restoration together with a calibrated examiner and scored using modified Ryge criteria (Table 1). The primary end points were margin integrity and restoration wear, with secondary end points: colour match, stain resistance, surface quality, retention of the restoration, secondary caries status and post-operative sensitivity. This paper reports the results from the Nuremberg centre. All restorations were placed under rubber dam and in accordance with the manufacturer's instructions.

Table 1: Criteria for restoration evaluation

<u>Anatomic form</u>	
A:	Restoration is continuous with existing anatomic form, not under contoured.
B:	Restoration is under contoured but no dentine or base exposed.
C*:	Sufficient restorative material is missing so that dentine or base is exposed.
<u>Margin integrity</u>	
A:	No visible evidence of a crevice along the margin into which a probe will catch.
B:	Probe catches in a crevice along the margin, no exposure of dentine or base.
C*:	Visible evidence of a crevice with exposure of dentine or base along the margin
<u>Margin discolouration</u>	
A:	No discolouration evident at margin.
B:	Slight staining at margin
C*:	Obvious staining, cannot be polished away.
<u>Colour match</u>	
A:	Restoration matches adjacent tooth structure in colour and translucency
B:	Mismatch in colour and translucency but within an acceptable range.
C*:	Mismatch in colour and translucency outside acceptable range.
<u>Surface roughness</u>	
A:	Smooth surface with no irritation of adjacent tissues.
B:	Dull, matte surface, can be refinished.
C*:	Shallow surface pitting is present. Rough, cannot be polished
* = unacceptable	

Fig. 1 Filtek Supreme XT Restoration at 12mths.



46 Class II at 12 months

RESULTS

37 restorations in 27 patients (18 Female & 9 Male) were reviewed - results as in Table 2 below

	Retention	Anatomic Form	Marginal Integrity	Marginal Discolouration	Colour Match	Surface Roughness	Staining	Sensitivity
Baseline	100% A	100% A	100% A	100% A	97% A 3% B	100% A	100% A	97% No 3% Yes
6mths	100% A	100% A	100% A	100% A	96% A 4% B	100% A	100% A	70% No 30% Yes
12mths	100% A	100% A	100% A	84% A 16% B	97% A 3% B	100% A	100% A	100% No

The transient sensitivity reported by 30% of patients after placement of the restorations had completely resolved at 12 months. No secondary caries was detected.

CONCLUSION

At 12 months the material under investigation was performing well in conditions pertaining to general dental practice.

ACKNOWLEDGEMENT

The support of 3M ESPE, Seefeld, Germany is acknowledged

CONTACT

drliebner @ drliebner.de

References: 1. Ryge, G. Clinical criteria. Int. Dent J. 1980; 30: 347-357