

CONSERVATIVE RESTORATION OF FRONT TEETH

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The development of composite materials capable of providing excellent mechanical characteristics and optimum aesthetics has allowed conservative restoration of elements which up until a few years ago required prosthetic treatment. The purpose of this study is to describe a restoration technique using a new nano-particle composite known as “PremiseTM”, (Kerr) a material composed of trimodal fillers loaded to approximately 84% by weight and 69% by volume.

Premise is available in 16 enamel shades, 8 dentine shades, 4 translucent and 2 “ultra clear shades” (XL1 and XL2) used for restoring bleached teeth or for creating zones of decalcification in addition to condensable composites.

Enamel shades:

A1, A2, A3, 3.5, A4
B1, B2, B3, B4
C1, C2, C3, C4
D2, D3, D4

Enamel shades:

A2, A3, A3.5, A4
B1, B2
C2
D2

Translucent shades:

Amber (with yellow colouration)
Grey (with grey colouration)
Transparent
Ultra transparent (Super-clear)

Ultra clear shades:

XL1
XL2
(XL2 is a lighter shade of XL1)

Clinical Case n°1

Patient B. V. aged 7.

Referred to us for examination on account of a traumatic fracture of 1.1 (Fig. 1).

After carrying out an X-ray and pulp vitality test the decision was taken to carry out a direct composite restoration. A matrix template was then fabricated in silicone for stratification of the composite material. The reconstruction then began with a thin layer of enamel A1 positioned in the matrix template in order to construct the palatal surface. Then with the addition of dentine A3 and A2 the internal structure of the mamelons was reconstructed. Super-clear translucent mixed with super colour blue was inserted into the invaginations between the mamelons and white XL1 was used to frame the incisal edge. At this point the restoration was completed with the application of a final layer of enamel. A1 (Fig. 2 – Clinical case completed).



Fig. 1



Fig. 2

Clinical Case n°2

Patient R. B. aged 28 requires the aesthetic and functional restoration of 1.1 (Fig. 3).

After an analysis of the occlusion (protrusive and lateral excursion) a zone of wear can be clearly seen along the mesial margin of the tooth which would require grinding of the antagonist element in order to be reconstructed. With the agreement of the patient, who rejected the idea of grinding the antagonist, the decision was taken to reconstruct only the distal portion of the tooth where the enamel was broken off. After preparing the tooth composite modelling and stratification was carried out using dentine shade A3.5 in the first layers (Fig.4) and completing stratification by positioning a thin layer of translucent amber enamel (Fig. 5 – Clinical case completed).



Fig. 3



Fig. 4



Fig. 5

Clinical Case n°3

Patient A. A. 9 years of age with a traumatic fracture of 2.1 (Fig. 6) and exposure of pulp horn.

In view of the patient's young age and favourable clinical conditions direct pulp capping was carried out using calcium hydroxide. Alginate impressions were then taken in order to construct the matrix template. In the next session, after checking the status of pulp vitality and having isolated the teeth with rubber dam, we proceeded to stratify the composite using A1 enamel to construct the palatine wall (Fig. 7). After removing the matrix template we proceeded to create the mamelons using dentine A3 and A2, and translucent super-clear mixed with a very small amount of super colour blue was inserted in the incisal margin. A thin line of white enamel XL1 was positioned along the incisal edge and the whole structure overlaid with enamel A1 (Fig.8 – Clinical case completed).



Fig. 6



Fig. 7



Fig. 8

Clinical Case n°4

Patient V.D. 11 years of age.

Fracture of the 1.1 and mesial edge of 2.1 (Fig. 9).

Once again in this case a pulp vitality test was carried out first in order to ensure that tooth vitality could be maintained. After having carefully evaluated morphology and internal characterisation, the teeth were isolated with rubber dam. We proceeded to carry out reconstruction by inserting white enamel XL2 on the penultimate layer in order to recreate the wide zones of decalcification present on the patient's teeth (Fig 10 – Clinical case completed)



Fig. 9



Fig. 10

BIBLIOGRAPHY

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