

Direct resin restoration using the new V4-Ring matrix and the new Micerium Enamel Plus HR*i* Function composite

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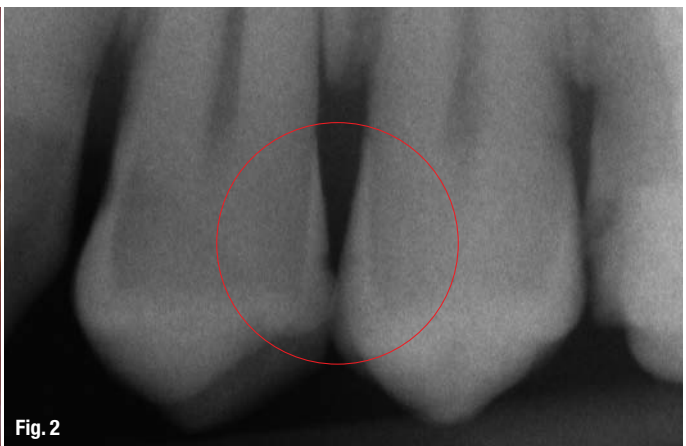


Fig. 1

Fig. 2

Fig. 1_Clinical view of carious lesion on 24 distal.

Fig. 2_X-ray view of carious lesion on 24 distal.

Fig. 3_First access to carious lesion on 24 distal with the protection on 25 by matrix and wedge.

Fig. 4_Removing decay using a medium-grained diamond bur on a red ring hand piece.

_Introduction

In restorative dentistry, as in all dentistry fields, in order to obtain a correct diagnosis it is essential to perform a proper clinical analysis, to take at least bite wings X-rays or preferably full mouth X-rays and to use a magnification system.¹

Once a correct diagnosis has been obtained, the first treatment phase is to eliminate gingival

inflammation by teaching the patient proper oral hygiene methods, followed by simple scaling, or complete non-surgical periodontal therapy.² It is then possible to proceed with the removal of the carious lesion.

This paper describes the most important steps in performing a correct class II restoration using the new V4-Ring matrix and the new Enamel Plus HR*i* Function composite (Micerium).



Fig. 3

Fig. 4



Fig. 5



Fig. 6

_Case study

After careful clinical and X-ray examination of the tooth decay on the second upper left premolar (Figs. 1 & 2), we carried out a local anaesthesia with articaine 1:100,000. Before proceeding with the removal of the carious lesion, the adjacent tooth must be protected with a matrix and a wedge (Fig. 3). The access to the cavity is then provided and a rubber dam is placed. Once the operative field has been isolated, the decay is removed first by using a medium-grained diamond

bur mounted on a red ring hand piece (Fig.4) and then a round (rosette) bur on a blue ring hand piece (Fig. 5). The preparation of the cavity is finished with a fine-grained diamond bur on a red ring hand piece (Fig. 6) and with a red rubber on a blue ring hand piece (Fig.7). In order to optimise the preparation of the cavity at the marginal level metal strips are first used (Fig. 8) followed by paper strips (Fig.9).

Once the preparation is finished the matrix V-Ring 4 is placed (Figs. 10 & 11) using the pin

Fig. 5 Removing decay using a rosette bur on a blue ring hand piece.
Fig. 6 Finishing using a fine-grained diamond bur on a red ring hand piece.

AD

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Clinical Cases by Dr. Lorenzo Vantini

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Fig. 7



Fig. 8



Fig. 9



Fig. 10

Fig. 7 Polishing enamel with a rubber red on a blue ring hand piece.

Fig. 8 To optimise cavity preparation at the marginal level, metal strips are used.

Fig. 9 To optimise cavity preparation at the marginal level, paper strips are used.

Fig. 10 Cavity preparation is completed.

Fig. 11 Once the preparation is finished matrix V-Ring 4 is placed with its proper tweezers, which are placed in the little hole on the matrix, making its insertion easier.

tweezers, which are placed in the hole on the matrix itself making insertion easier (Fig. 11). After checking proper assembly, the wedge and the transparent tines of the V4-Ring are inserted (Figs. 12–15). This allows light to pass through for 360° polymerisation.

After the matrix has been positioned, ENAetch is applied for 30 seconds evenly with a brush to distribute the etching agent (Figs. 16 & 17), and the area is washed with water for 30 seconds and with 0.2 % chlorhexidine digluconate (Fig.18).³ Ena Bond is then applied for 60 seconds (Fig.19).

It must be polymerised for 40 seconds⁴ (Fig. 20) and at the end ENaseal is brushed on for 30 seconds (Figs. 21–22).⁵ Finally the cavity is polymerised again for 40 seconds (Fig. 23).⁶

Every step has to be done properly, from carious lesion removal to cavity surface finishing. Any approximation may compromise long-term outcome and restoration aesthetics.⁷ With adhesive techniques it is mandatory to respect all protocols in order to prevent secondary tooth decay and ensure a long lasting restoration.⁸



Fig. 11



Fig. 12



Fig. 13

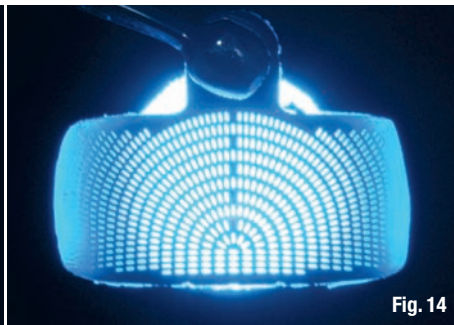


Fig. 14



Fig. 15



Fig. 16

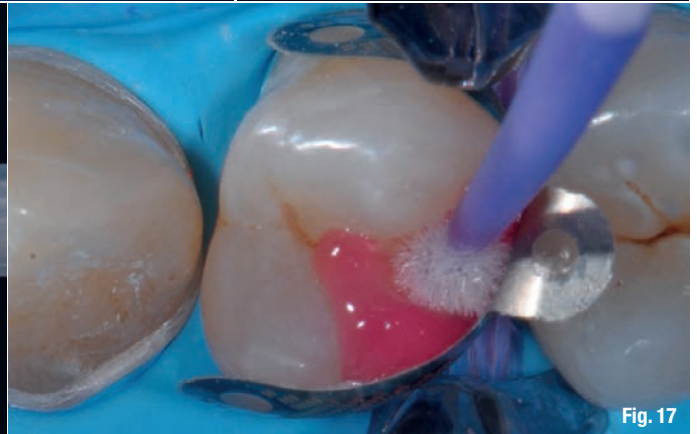


Fig. 17

Once the adhesive step is finished, the interproximal wall is built up⁹ with Enamel Function 2 (Fig. 24) and finally, due to the new V4-Ring matrix special design, it is possible to polymerise the buccal, palatal and occlusal aspect of the composite reconstruction.

Once the restoration has been completed with Enamel Plus HRi Dentine UD3 and Enamel Plus HRi Function EF2, the fissures are characterised with Stain brown 2 and the marginal ridge with Intensive White.^{10, 11}

After modelling, the restoration is finished on the interproximal level with paper strips. An occlusal check (Fig. 25), X-ray control (Fig. 26), and careful polishing are mandatory. A well-

polished restoration is less likely to attract plaque adhesion, and is more respectful of periodontal tissues, while also maintaining better aesthetics over time (Fig. 27).³⁻¹²

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Fig. 12 After checking the proper assembly of the wedge and the transparent ring of V-Ring 4 are inserted.

Fig. 13 The transparent ring of V-Ring 4.

Fig. 14 V-Ring 4, note light passing through the matrix.

Fig. 15 The wedge of the transparent V-Ring 4.

Fig. 16 ENAetch, Micerium.

Fig. 17 Etching for 30 seconds with ENAetch, a brush is used to evenly distribute etching.

Fig. 18 Washing with water for 30 seconds and with 0.2% chlorhexidine digluconate.

Fig. 19 ENAbond for 60 seconds.



Fig. 18



Fig. 19



Fig. 20

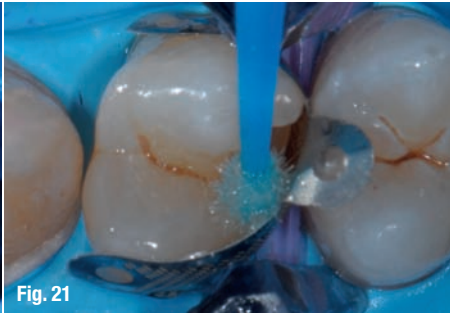


Fig. 21



Fig. 22



Fig. 23



Fig. 24



Fig. 25



Fig. 26



Fig. 27

Fig. 20_Polymerisation for 40 seconds.
Fig. 21_ENaseal for 30 seconds.
Fig. 22_ENAbond and ENaseal, Micerium.
Fig. 23_Polymerisation for 40 seconds.
Fig. 24_Enamel Plus HR/Function 2 Micerium.
Fig. 25_An occlusal check.
Fig. 26_An X-ray check, note the maximum integration of restoration.
Fig. 27_Occlusal view of restoration.

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