Deep white dyschromia

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Although resin infiltration techniques are not the first choice for treating most molar incisor hypomineralisation (MIH) lesions, many patients refuse to have their teeth drilled, while seeking for a solution to this aesthetic issue.

Case report

A 46-year-old patient came to my practice asking me to solve her aesthetic problem (Figure 1). Whenever I have to treat white spots on dark teeth, or when I approach treatments with a high aesthetic impact, I usually recommend bleaching to improve the base we work on.

For this case, a 16% carbamide peroxide-based home whitening gel (White Dental Beauty Professional Tooth Whitening System) with custom trays without reservoirs was selected for bleaching.

After three weeks' whitening for four hours a day, and after an additional 20 days wait, the teeth were ready for treatment of the discolourations (Figure 2).

The white portion of the spots had faded but the orange portion was still evident (Figure 3). I used the K-Lite (Smileline), which allowed me to understand the actual depth of the stain due to MIH (Figure 4).

Although MIH is not the ideal condition to apply resin infiltration, I tried to apply this minimally invasive approach, but the position of the spot in the thickness of the enamel forced me to sandblast before letting the etching work (Figure 5).

Because of the depth of the lesions, I knew from the start that I would have to repeat the cycle several times. Using Icon Dry after each erosion, I simulated the action of the infiltrant resin. The dyschromia was still evident after the first cycle (Figures 6 and 7) so I repeated the etching step (Figure 8). Figure 9 shows the third cycle.

Since the patient had two shallow white spots on the lateral incisors as well, I decided to extend the treatment involving them, as two erosion cycles should be enough to make them disappear (Figure 10). I repeated the etching step for the fifth and final time (Figure 11).

The action of Icon Dry revealed that the stains were ready to be infiltrated (Figure 12).After infiltrating dyschromias and curing, I needed to restore the involved teeth (Figure 13). A thin layer of white enamel was applied on UR1 and UL1 to increase the value on the incisal third and to thicken it (Figure 14).

A greyish halo still remained, but for final evaluation we needed to wait for rehydration (Figure 15). Figure 16 shows the final outcome after removing the rubber dam and Figure 17 shows the smile after finishing and polishing procedures two weeks later. Figure 18 shows the six-month oral hygiene recall, and Figure 19 is 15 months later.

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Figure 1: Teeth with severe discolouration

Figure 2: White spots after whitening

Figure 3: Discolourations after tooth whitening

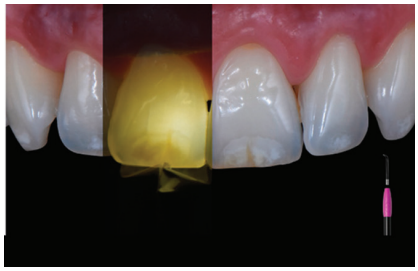

Figure 4: Transillumination of MIH lesion

Figure 5: Sandblasting discolourations

Figure 6: Etching of white spots for infiltration

Figure 7: Previsualisation of infiltration outcome

Figure 8: Second cycle of etching for infiltration

Conclusion

An approach with a bur would have been faster and more performing, but certainly more destructive. If the patient does not consent to such kind of treatment, whitening and infiltration can be used to reduce the difference between the refractive index of the stain and healthy enamel, providing a basis for a minimal restoration.

Either way, bleaching can help to even out the colour and simplify the choice of the restorative material.

References

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Figure 9: Third etching cycle before infiltration

Figure 10: Etching of white spots

Figure 11: Fifth erosion cycle for resin infiltration

Figure 12: Previsualisation of infiltration outcome

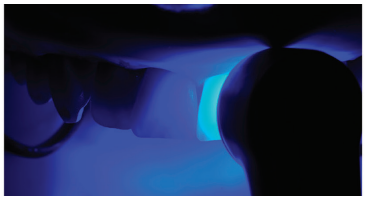

Figure 13: Light curing of infiltration resin

Figure 14: Composite layering on darker infiltrated areas

Figure 15: Teeth after infiltration and composite layering

Figure 16: After resin infiltration before rehydration

Figure 17: Teeth after infiltration and rehydration

Figure 18: Six-month follow-up after infiltration

Figure 19: 15-month follow-up

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