

# Micro-invasive treatment with resin infiltration technique - *an option?*

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## INTRODUCTION AND OBJECTIVES

The resin infiltration technique represents a new approach in the treatment of non-cavitated caries lesions, mild fluorosis and superficial white spots. This method consists in using a low-viscosity light-curing resin which acts by capillarity, creating a barrier which blocks the bacterial dissemination and progression of caries. In the case of white spots in the enamel in the aesthetic zone, eliminates the opacity of the same, making them almost imperceptible.

We performed a bibliographical research of scientific articles published in specialized magazines between 2014-2015, with this keywords: Resin infiltration; white spot; minimal intervention dentistry; non-cavitated lesions; remineralization; enamel. To develop and refine this technique.

Here we present two clinical cases demonstrating the efficacy of micro-invasive treatment in enamel lesions with resin infiltration technique.

## CASE REPORT

### Case 1

Female patient, 21 years old, unhappy with the presence of unaesthetic spots on teeth of the anterior-superior sector (1.3-2.3) associated with demineralization lesions after removing the orthodontic appliances. With the patient's agreement, a decision was made to perform resin infiltration technique with Icon® (DMG, Hamburg, Germany).

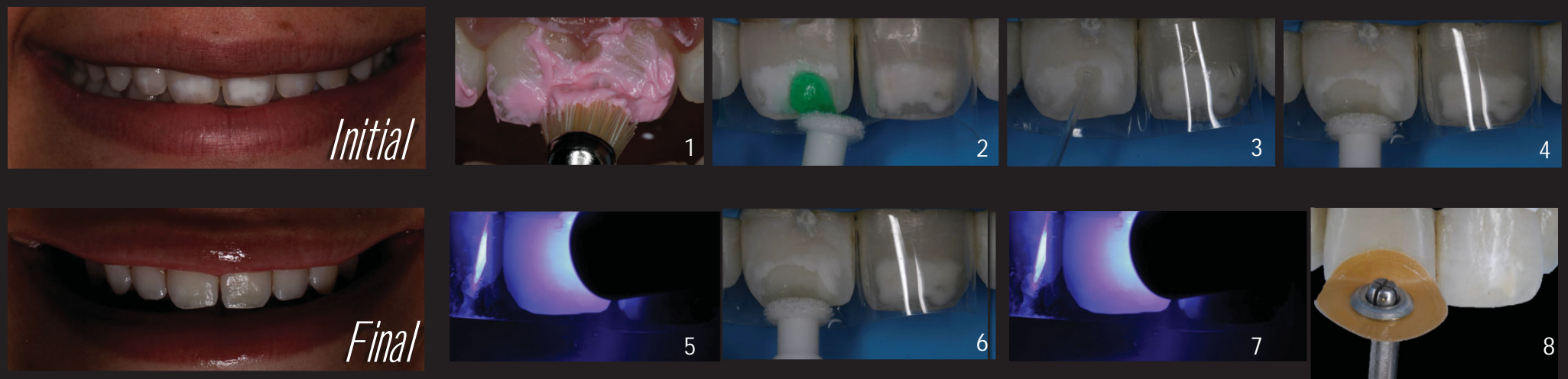


Figure-1- Polish with polishing paste; 2- Apply Icon-Etch for 2 min; 3- Apply Icon-Dry with air; 4- Apply Icon-Infiltrant for 3 min; 5- Light-cure for 40 sec; 6- Re apply icon-Infiltrant for 1 min; 7-Light-cure for 40 sec; 8- Polish with soflex discs.

### Case 2

Male patient, 36 years old, dissatisfied with the appearance of his maxillary central incisors. We started by evaluating the extent and depth of white spot lesions by transillumination with the light curing. The physical and clinical history evaluation, led to the diagnosis of hypomineralization on teeth 2.1. Microabrasion enamel technique with Opalustre (Ultradent Products, Inc., South Jordan, USA) followed by resin infiltration technique with Icon® (DMG, Hamburg, Germany) and restoration with composite (ENA HRI/Micerium) performed on tooth 2.1.

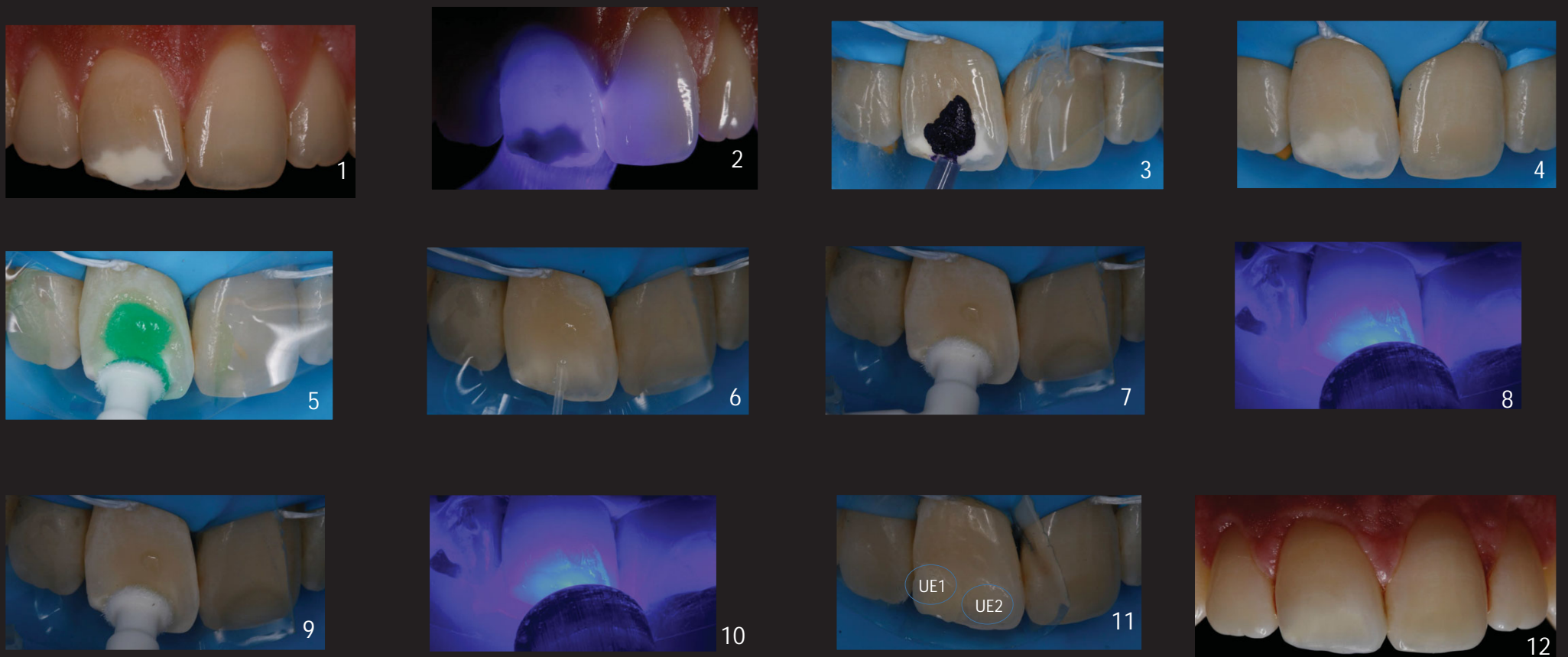


Figure 1- Initial situation; 2- Transillumination with the light curing 3- Apply Opalustre; 4- Aspect after microabrasion ; 5- Apply Icon-Etch for 2 min; 6- Apply Icon-Dry with air; 7- Apply Icon- Infiltrant for 3 min; 8- Light-cure for 40 sec; 9- Re apply Icon- Infiltrant for 1 min; 10--Light-cure for 40 sec; 11- Selection of the enamel composite; 12- Final result after polishing.

## CONCLUSIONS

Based on the satisfactory results obtained in both cases, we conclude that the resin infiltration technique is very promising and could be considered as a minimal invasive procedure. However, long term follow-up evaluation must be carried out to affirm the efficacy and durability of this type of treatment.

## REFERENCES

Meyer-Luedel H, Paris S, Kiebasa AM. Surface layer erosion of natural caries lesions with phosphoric and hydrochloric acid gels in preparation for resin infiltration. Caries Res 2007; 41:223-30.  
 Paris S, Meyer-Luedel H, Kiebasa AM. Resin infiltration of Artificial Enamel Caries Lesions with Experimental Light Curing Resins. Dental Materials Journal 2007; 26: 443-52-58.  
 Kutsch VK. Dental caries: a new look at an old disease. Inside Dentistry. 2009;5(5):66-65.  
 Kiebasa AM, Mullerl, Gemhardt CR. Closing the gap between oral hygiene and minimally invasive dentistry: A Review on the resin infiltration technique of incipient (proimal) enamel lesions. Quintessence Int. 2009 Sep; 40(9):663-8  
 Kiebasa AM, Ulrich L, Treuenl, Muellerl. An updated review on the resin infiltration technique of incipient proximal enamel lesions. Medicine in Evolution 2010;14(4).  
 Kim S, Kim EY, Jeong YS, Kim JW. The evaluation of resin infiltration for masking labial enamel white spot lesions. Int J Paediatr Dent 2011;21:241-8.  
 Ugraslan L, Leon A, Nicolae A, Cristaru G. Micro-invasive treatment of the non-cavitated carious lesions in the smooth surfaces of teeth. International Journal of Medical Dentistry 2012; 2 (1): 11-16.  
 Cudillo Y, Cudillo. Infiltrant Resins: A new option for the treatment of non-cavitated carious lesions in enamel. Revistas ADM 2012; 69(1):38-45.  
 Muñoz et al. Alternative Esthetic Management of Fluorosis and Hypoplasia Stains: Binding Effect Obtained with Resin Infiltration Techniques. J Esthet Restor Dent 2013; 25:32-39.  
 X.-Y. Ou, Y.-H. Zhao, X.-K. Qi and L.-W. Zen. Masking white spots of enamel in caries lesions with a non-invasive infiltration technique in vitro. Genetics and Molecular Research 2014; 13(2):6912-6919.  
 Aziz Z. Management of White Spot Lesions Using Resin Infiltration Technique: A Review. Open Journal of Dentistry and Oral Medicine 2015;3(1):1-6.