

Case Report

## Aesthetic Rehabilitation of Non-Vital Teeth

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### ABSTRACT

Discolored and non-vital teeth result in aesthetic problems especially in anterior teeth owing to being easily noticed. In order to bleach the coloration occurring in teeth which canal treatment applied, sodium perborate and 40 % of hydrogen peroxide-containing agent were used in this study. When bleaching reaches the color of the symmetrical teeth at the end of the 8th day with two-days intervals, it was considered to be successful. One week after bleaching, fillings were removed permanently.

**Key Words:** Tooth discoloration, non-vital bleaching, hydrogen peroxide, sodium perborate

### INTRODUCTION

The discoloration occurring in non-vital teeth aesthetically bothers the patients.

(1) Endodontic materials in the pulp chambers (silver-containing pats) and the necrotic tissue resulting from trauma are the main etiological factors in discoloration. Although the cause of discoloration in pulp chamber is not known certainly, hemolysis occurring with bacterial and traumatic reasons and blood breakdown products are thought to cause this condition. As a result of iron releasing blood products reaching the dentin channels combine with bacterial products, yellow-brown discoloration occurs. (2)

### CASE REPORT

The patient complaining about the discoloration on anterior teeth applied to our clinic owing to being unpleasant with aesthetic appearance. The patient was examined intraorally and it was determined that discoloration occurred after canal treatment in 21st tooth.

The patient was given the necessary information about treatment options. Non-vital bleaching was decided to be applied

after assessing the patient's expectations as well as taking financial situation into consideration.

In order to protect the surrounding soft tissues before starting operation, gums were covered with gingival barrier. Cavity was opened and necrotic pulp residues in the pulp chamber and root filling materials were completely removed. Coronal root filling was reduced to 1-2 mm below boundaries of cementum enamel. In order to prevent leakage of the bleaching agent to the periodontal tissues, glass ionomer cement with 2 mm thickness was layered to cavity floor. Pat obtained with mixing 2 g of sodium perborate powder (starbrite, Dentramar AG, Seefeld, Germany) and 1 g of distilled water was planted into pulp chamber. Pat was temporarily closed with glass ionomer cement by placing a cotton pellet on it. The same operation was performed twice for each tooth on the 3rd and 6th days. Then the cavity was washed with sodium hypochlorite for the peroxide residues to be dissolved. CaOH pat (Calcicur, Voco, Cuxhaven, Germany) was placed into cavity to balance Acidic pH and was temporarily closed. After seven days,

the cavity was closed with permanent filling material.

## DISCUSSION

Smear layer in pulp chamber doesn't lead to any changes in the effectiveness of the bleaching agent.<sup>(3)</sup> Microleakage in restoration results in the discoloration of the teeth again after bleaching.<sup>(4)</sup> Calcium hydroxide pat was placed into the cavity to

tampon Acidic pH and to prevent external resorption. Then seven days were awaited and permanent filling was made at the end of this time. This seven-day period eliminates the negative effect of the bleaching agent on the adhesion.<sup>(5,6)</sup>

Bleaching treatments may lead to increased permeability of enamel.<sup>(7)</sup> Cases of external resorption due to this treatment have been reported.<sup>(8-10)</sup>



Fig.1. Pre-treatment and post-treatment images of the patient's teeth

## CONCLUSION

In conclusion, use of sodium perborate and hydrogen peroxide provides the desired aesthetics in bleaching of discolored non-vital teeth.

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