



# Tooth Bleaching- A Case Report

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221



## Abstract

Teeth whitening has been practiced right form 19th century till date. Today, the bleaching of nonvital, discolored teeth is a low-risk routine dental treatment for improving esthetics. This procedure includes in office and/or at home applications of bleaching agents on the teeth.

**Aim:** This article describes the procedure for management of a discoloured tooth by in office bleaching technique.

**Conclusion:** Bleaching has been widely accepted in recent times, as newer products cause less dentin hypersensitive as compared to the older agents used. The increasing demand for whiter teeth has led to development and advancements in bleaching agents, this demands for more awareness among dental professionals to avoid overuse of these agents.

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## Introduction

Teeth whitening has been practiced right form 19th century till date. Today, the bleaching of nonvital, discolored teeth is a low-risk routine dental treatment for improving esthetics. There has been a recent increase in interest in the treatment of tooth staining and discolouration as shown by the large number of tooth whitening agents. The discolouration can be classified as being extrinsic or intrinsic on the basis of localization and etiology. (1)The correct diagnosis of the cause of discoloration of teeth is of great importance because it has an effect on the treatment outcome. Tooth discoloration varies in etiology, appearance, location, severity, and affinity to tooth structure. The correct diagnosis for the cause of discolouration is important as, invariably, it has a profound effect on treatment outcomes.

## Case report

A 25 year old female patient reported to the department with the chief complaint of dull pain in the upper front region since one month. Patient gives history of fall 15 years back, and dull throbbing pain since one month. On intra oral examination tooth 21 appeared discoloured, the tooth was structurally intact but grade 1 mobility was noticed. Cold test was carried out and tooth 21 was reported non vital. On radiographic examination tooth 21 had an open apex with a periapical abscess. Root canal

treatment followed by an inside out bleaching was planned.

## Materials and methods

The technique used here was the inside out bleaching method. Once the obturation was done, to place an orifice barrier 2mm of gutta percha was removed form the coronal third of the tooth. About 1-2 mm thick layer of glass ionomer cement was placed. Resin modified glass ionomer cement was recommended for bleaching in the same appointment. The glass ionomer cement was placed at an angulation with inclination towards the palatal surface.

The patient was recalled after placement of the barrier for bleaching process.

The tooth was isolated using rubber dam, if a rubber dam and gingiva protected with a light curable gingival barrier provided with the kit.

Bleaching agent used here was 38% hydrogen peroxide (pola office ultradent, USA). The bleaching agent was available in powder liquid form. The powder and liquid is dispensed and mixed according to the manufacturer's instructions to achieve a thick gel like consistency.

The tooth surface was polished and made free of any debris. The bleaching agent was placed inside the access cavity and as well as on the



labial surface of the tooth. The bleaching agent was activated with a bleaching light for a duration of 8 minutes. The patient was provided with a protective eye wear during this step. A total of 4 cycles were carried out. The bleaching

agent was reapplied in between cycles and was agitated a few times. After a desired shade was achieved the bleaching agent was washed off with water and the rubber dam was removed.

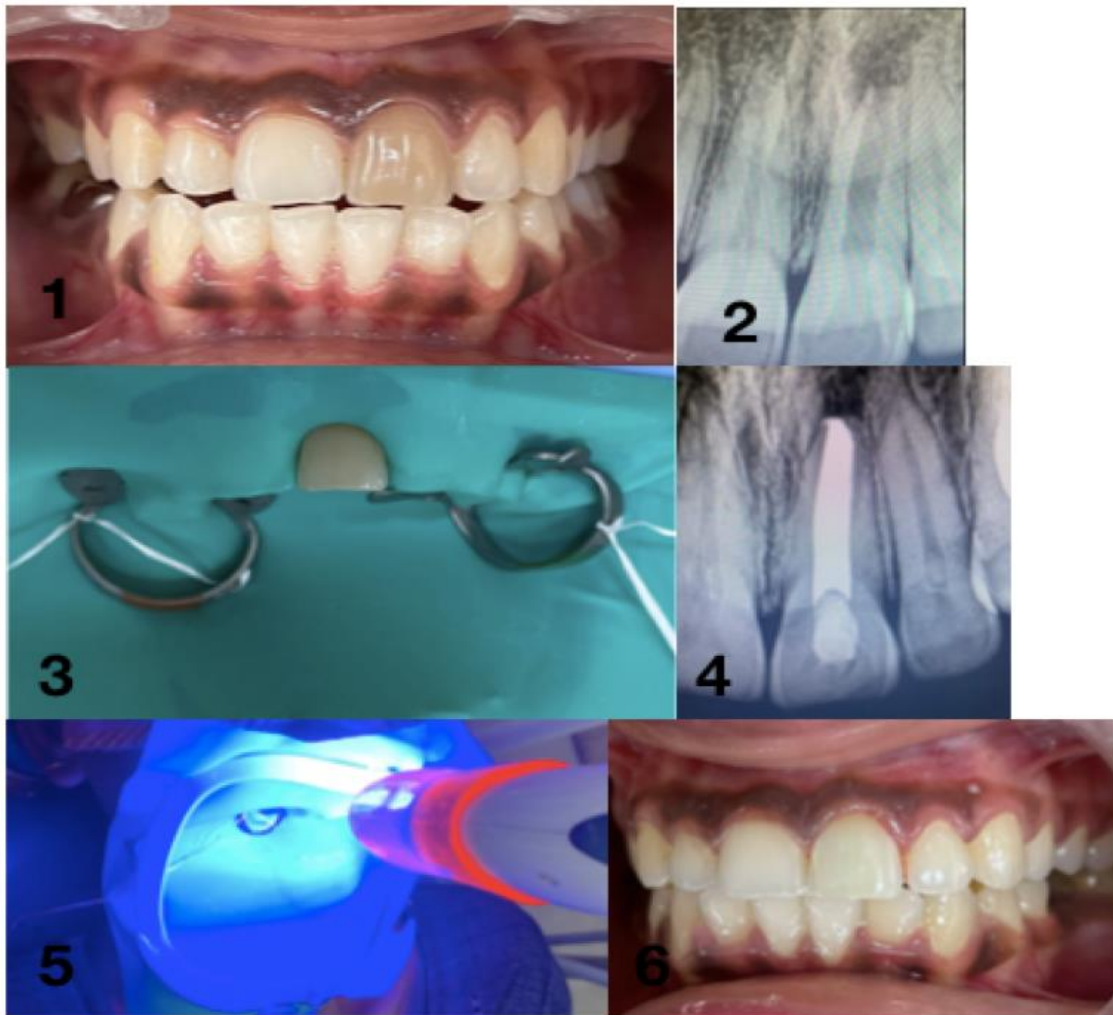


Figure 1: pre operative image, Figure 2: pre operative radiograph, Figure 3: rubber dam isolation, Figure 4: Obturation and GIC barrier, Figure 5: light activation, Figure 6: post operative intra oral image.

**Discussion**

The main reason for discolouration of theta after trauma is considered due to plupal

haemorrhage. The major cause of discolouration of non-infected traumatised teeth is the accumulation of the haemoglobin



molecule or other haematin molecules. (1) for management of discoloured teeth various methods are available but in office bleaching the minimally invasive procedure amongst all.

The bleaching action occurs due to the release of nascent oxygen from the bleaching agent.(4) The nascent oxygen gives rise to free radicals with bond to the double bonds present in the stains present on the tooth and convert them into single covalent bonds. These bonds absorb less light and reflect light due to which the rains appear lighter.(2)

The nascent oxygen can enter into the obdurated canal and reach the apex of the tooth causing damage to the tooth, to avoid this the orifice barrier is placed. The ideal thickness of glass ionomer cement is considered to be 1-2mm thick to avoid penetration. The bleaching agent also leach out through the dentinal tubules which can cause external cervical resorption of the tooth. (5)

During activation of the bleaching it is important to cover the eyes with a protective eye wear as the high intensity of the bleaching light can be hazardous to the eyes.(3)

### Conclusion

Though the use of bleaching agent to gain acceptable shade change of the discoloured tooth is the minimally invasive procedure, it has many hazards of its own. It is important to

maintain a balance between the patients wants and the actuals needs of the treatment. It has been seen that there is an increase in the demand of bleaching procedures amongst individuals in office bleaching is a safer method for teeth whitening. Proper knowledge of the materials and the anatomy is important for a successful outcome of the treatment.

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