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Case Report

Non-Invasive Management of Dental Fluorosis: Report of 2 Cases

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Abstract

Aesthetics plays an important role in children as well as in adults. Dental discolorations are a major concern for young children and for those who are apprehensive about their appearance. The etiology behind dental discolorations is many. This case reports describe the two cases where non-invasive technique like etch bleach seal technique was done to treat teeth discoloration in young child.

Keywords: Fluorosis; Hypoplasia; Etch; Bleach; Seal; Aesthetics

Introduction

The unaesthetic appearance of teeth causes psychological impact on young children. The etiology behind discolored teeth is many, it may be genetic and environmental factors [1]. Some of them are, hypoplasia, fluorosis, turner's tooth, amelogenesis imperfecta etc. Hypomineralization defects of enamel are discoloration due to changes in the composition and/or structure of the enamel [2]. The appearance of Hypomineralized enamel is ranging from white mottling or opaque to discrete or generalized yellow-brown discolorations. Whereas in case of fluorosis, these lesions are often not uniformly distributed throughout the dentition or across the area of a single-tooth crown. In case of turner's tooth there will be history of trauma to the primary teeth. A variety of treatment modalities are available for discolored incisors. Crowns, veneer, bleaching, composite [3], but a non-invasive technique introduced by wright "etch-bleach-seal" introduced in 2002 is acceptable by the uncooperative and apprehensive children [4]. This case report is describing the two cases treated by the same method.

Case Report

Case 1

A young 13-year-old boy reported to the department of Pediatric dentistry with chief complaint of unaesthetic appearance of front teeth (Figure 1a) since long. Patient was healthy with no systemic complications and there was no history of trauma to any teeth during childhood. On extraoral examination face was symmetrical with no other associated anomalies. On intraoral examination, tooth 11 and 21 was whitish in coloration with mild fluorosis (Dean's fluorosis index) on other upper teeth like 12, 13,22 and 23. Based on the clinical examination and history diagnosis of mild fluorosis was made. Since the child was very apprehensive, a non-invasive technique "etch-bleach-seal" was done. First the tooth was isolated and etched with 37% phosphoric acid (Ivoclar N etchant) for 60 second (Figure 1b). After that it was rinsed for 15 second and air dry with gentle blow with 3-way syringe. After that 5% sodium hypochlorite was applied for 10 second with applicator

tip (Figure 1c) with precautions to prevent soft tissue bleach. After the bleach, resin infiltration with composite (3M ESPE light cure) was done (Figure 1d). Tooth was finished and polished in the same appointment. Post operative instructions were given to the patient. Patient was content with the results (Figure 2).

Figure 1:
a) Preoperative picture (Enamel opacities w.r.t 11,21).
b) Etching with 37% phosphoric acid for 60 sec (Ivoclar N etchant).
c) Bleaching with 5% sodium hypochlorite.
d) Resin infiltration (3M ESPE light cure).

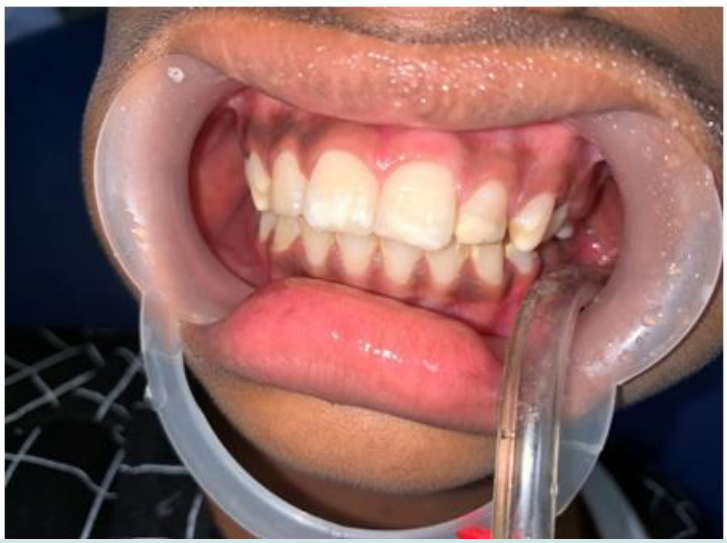

Figure 2: Post operative picture w.r.t 11,21.

Case 2

A 9-year-old girl reported to the department of Pediatric dentistry with chief complaint of brownish stains on front teeth since3 years (Figure 3a). Patient had the history of drinking water from deep well. There was no associated systemic condition and other significant anomalies. Based on the history and examination a diagnosis of mild dental fluorosis (Dean's index) was made. Same intervention as in case 1 was done in the patient. Patient was satisfied with the results (Figure 3b).

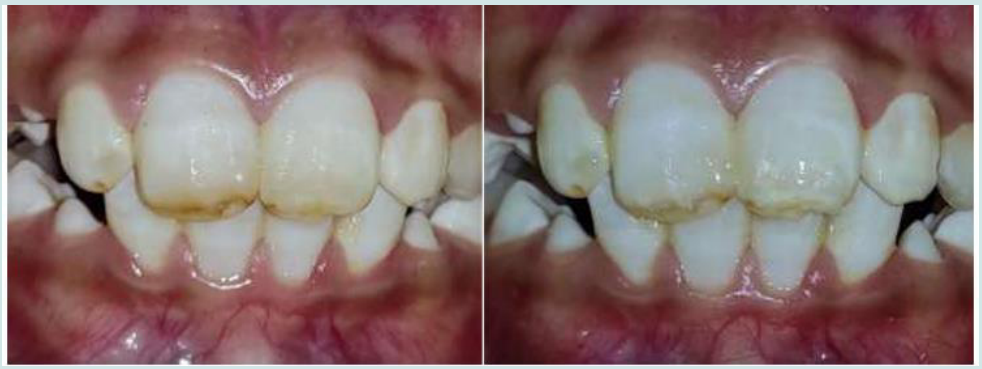

Figure 3:
a) Preoperative picture.
b) Post operative picture after etch-bleach-seal technique.

Discussion

Numerous techniques are there to treat intrinsic discoloration. The wright technique of "etch-bleach-seal" is a non-invasive technique in which first the tooth is etched with 37% phosphoric acid for 60 second. It roughens the superficial enamel and thus allows better penetration of the bleaching [5]. Etching followed by rinsing with water for 15 second. With the help of gentle blow air, dry for 10 second. Isolate the tooth with cotton roll prior to bleaching to prevent soft tissue bleaching. Then the tooth is bleached with 5 % sodium hypochlorite which is highly effective at removing organic material by oxidizing it and allowing the smaller degraded molecules to be washed away. It degrades and remove the chromogenic organic material that is located on the superficial enamel [6]. If little or no change has occurred in 10 minutes, the tooth should be re-etched for 60 seconds, rinsed and bleached again. Sodium hypochlorite can effectively remove proteins from the enamel crystallite surfaces [7]. The bleached and etched teeth can be sealed after achieving the optimal bleach result to prevent organic material from re-entering the porous enamel. Sealing of the hypomineralized surface is accomplished by rinsing and drying the tooth to removal all bleaching agent and with highly penetrating clear resin or composite bonding agents' tooth should be restored. Pretreatment of the enamel with sodium hypochlorite to remove the enamel proteins can enhance the bond of resin to the tooth surface [8].

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