

An indirect veneer technique for simple and esthetic treatment of anterior hypoplastic teeth

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Abstract

This study describes a technique for treating anterior hypoplastic teeth using indirect nanocomposite veneer restoration. The prime advantage of an indirect veneer technique is that it provides an esthetic and conservative result. One of the most frequent reasons that patients seek dental care is discolored anterior teeth. Although treatment options such as removal of surface stains, bleaching, microabrasion or macroabrasion, veneering, and placement of porcelain crowns are available, conservative approach such as veneer preserves the natural tooth as much as possible. Full veneers are recommended for the restoration of localized defects or areas of intrinsic discoloration, which are caused by deeper internal stains or enamel defects. Indirectly fabricated veneers are much less sensitive compared to a operator's technique and if multiple teeth are to be veneered, indirect veneers can be usually placed much more expeditiously. Indirect veneers last much longer than the direct veneers. Therefore, indirectly fabricated veneers are more advantageous than directly fabricated veneers in many cases.

Keywords: Hypoplastic, indirect veneer, nanocomposite

Introduction

The word esthetic implies beauty, naturalness, and youthful appearance relative to one's age. Esthetic dentistry created new dimensions in providing esthetics and functional rehabilitation.^[1] Because of esthetic demands as well as patients' awareness have been increased over the period of years, it becomes imperative for clinicians to evolve better treatment modalities to deliver higher standard of therapies using new generation materials along with improved clinical procedure.^[2,3]

The aim of this study is to present the indirect restorative technique with nanocomposite in anterior teeth providing esthetic in order to restore the dental anatomy to hypoplastic teeth.

Case Report

A 12-year-old boy presented to the Department of

UCMS and GTB Hospital, Delhi University, Delhi, India. ¹J.S.S. Dental College and Hospital, Mysore, India

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Pedodontics and Preventive Dentistry of J.S.S Dental College, Mysore, with a chief complaint of upper fractured teeth 11 and 21 and lower 31, 32, 33, 41, 42, 43 discolored teeth [Figure 1]. Clinical examination revealed a generalized hypoplastic pattern. Consultation concerning oral hygiene was given to patient in the first session. Following endodontic treatment in upper anterior and oral hygiene measure, it was decided to restore lower anterior teeth with indirect nanocomposite restoration.^[4]

Hypoplastic defect in 41 restored with Direct Ceram-X (Dentsply) Mono Shade M2 using Xeno-III (Dentsply) self-etch adhesive [Figure 2]. Then, lower six anterior teeth were prepared by the removal of 0.5–0.75 mm enamel with a medium grit chamfer bur with proximo-incisal shoulder preparation^[1] [Figure 3]. Further, arch impression of the prepared teeth was made using an elastomeric impression material (Reprosil) [Figure 4]. The cast is prepared using die-stone [Figure 5]. Separating medium applied on the cast [Figure 6]. Ceram-X Mono (Dentsply) shade M2 was applied and M3 for cervical area [Figure 7]. Finishing and polishing of veneers were carried out with disc and cup shaped Enhance and PoGo [Figure 8].^[5] Although a significant advantage exists over direct composite veneers, indirect veneers made of processed composite possess limited bond strength because of the reduced potential to form chemical bond with the bonding medium.^[6] Therefore, in order to provide additional micromechanical retention, we remove ready composed veneer from die-stone model and carried to an air abrasion chamber to etch the internal surface of veneer [Figure 9].^[7] After etching using the air abrasion, a thin layer of Xeno-III applied on the prepared tooth surface and light cured [Figure 10].^[8] Then we applied luting composite to the internal surface of the veneer [Figure 11] and the prepared tooth and removed the excess composite resin with a brush

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Figure 1: The darkly stained enamel hypoplastic defect in teeth 43, 42, 41, 31, 32, and 33



Figure 2: Hypoplastic defect in tooth 41 restored with direct Ceram-X Mono (shade M2) using Xeno III self-etch adhesive



Figure 3: Preparation of the six mandibular anterior teeth by removing small amount of enamel with a medium grit chamfer diamond bur with facioproximal shoulder preparation

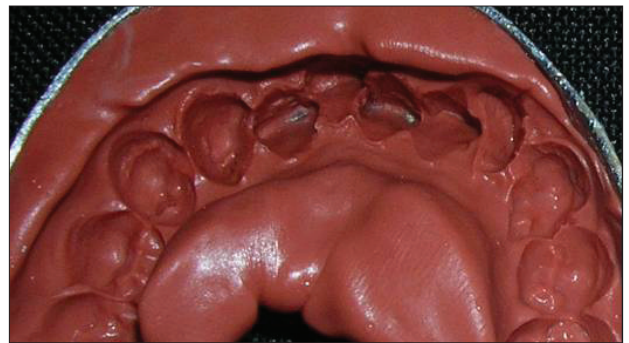


Figure 4: Elastomeric impression



Figure 5: Die stone model of prepared arch



Figure 6: Separating media (Biostar pressure molding machine liquid) applied on cast and cured



Figure 7: Fabrication of indirect composite veneer on die-stone cast



Figure 8: Polishing the Veneer with cup shaped enhance and pogo (Dentsply)



Figure 9: Etch the internal surface of the veneers by using an air abrasion unit



Figure 10: Painting a thin layer of Xeno III self-etch adhesive on to the prepared teeth and light cure



Figure 11: Applying a luting composite to the internal surface of the veneer and the prepared tooth and remove the excess composite resin with a brush dipped in bonding agent before curing. Place the other veneers in the same fashion



Figure 12: After indirect veneer fabrication

dipped in bonding agent before curing [Figure 12].^[9] Other veneers were placed in same fashion.

Discussion

The present technique is simple, inexpensive, and time consuming. Indirect processed composite restorations are often recommended for children and adolescent as an interim restoration until the teeth will fully erupt and achieve their complete clinical crown length.^[10] At the age of 18–20 years, a more permanent restoration can be pursued. This technique should be carried out in lower mandible with the teeth that are not in normal occlusion contact because the facioincisal portion is thin and usually subject to biting force and attrition^[11].

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