

Occlusal Stamp Technique for Direct Composite Restoration: A Case Report

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Introduction

In restoration of posterior teeth, following the natural contour of the tooth, functional and esthetics restorability is essential. Although composite restorations have become popular, crafting an aesthetic direct composite restoration manually requires experience and excellent operator's skill. Accurate reproduction of tooth form and occlusion is not only an arduous task but also technique sensitive. To achieve the aim of an amalgamation of function and aesthetic, 'Stamp technique' for direct composite restorations can be practiced easily. Fabrication of occlusal index with pre-operative anatomy is possible with this technique.⁽¹⁾ The pre-operative anatomy was recreated by placing the obtained index against the final composite increment. This article aims at presenting a case report of direct composite restoration in posterior tooth through the stamp technique.

Case Report:

A 12- year old female patient reported to the department of Pediatric and Preventive Dentistry with chief complaint of blackish discolouration in her lower left back teeth. On clinical examination, pit and fissure caries were detected in

relation to 36 and 37 with intact marginal ridges and no significant cavitation. To remove the debris on the surface, oral prophylaxis was performed and shade selection was done following which the involved tooth was isolated under rubber dam. A stamp was made by placing composite resin [3M Espe Filtek Z350 shade A2] on the occlusal surface of tooth with gentle digital pressure, the microbrush tip was inserted over it and light cured. Caries was excavated using 330L bur and preparation of Class I cavity was done. Selective Etching was done using 37% orthophosphoric acid for 30 seconds and was rinsed with distilled water. The cavity was dried to obtain frosty white appearance in enamel, while the dentin was blot dried. Bonding agent [3M Adper Single Bond 2 Adhesive] was applied with an applicator tip and cured. This was followed by incremental addition of packable composite resin [3M Espe Filtek Z350 shade A1] upto 1mm lower the occlusal surface and was light cured. A strip of Teflon tape was placed over the last increment of composite and fabricated index was placed properly and pressed. The index and Teflon tape was taken out and excess composite removal was done. The Teflon and index was placed carefully again and curing was done. Finishing and polishing was done minimally. After the removal of rubber dam isolation, the occlusal contacts were checked for proper cusp-fossa relationship. (Figure 1)

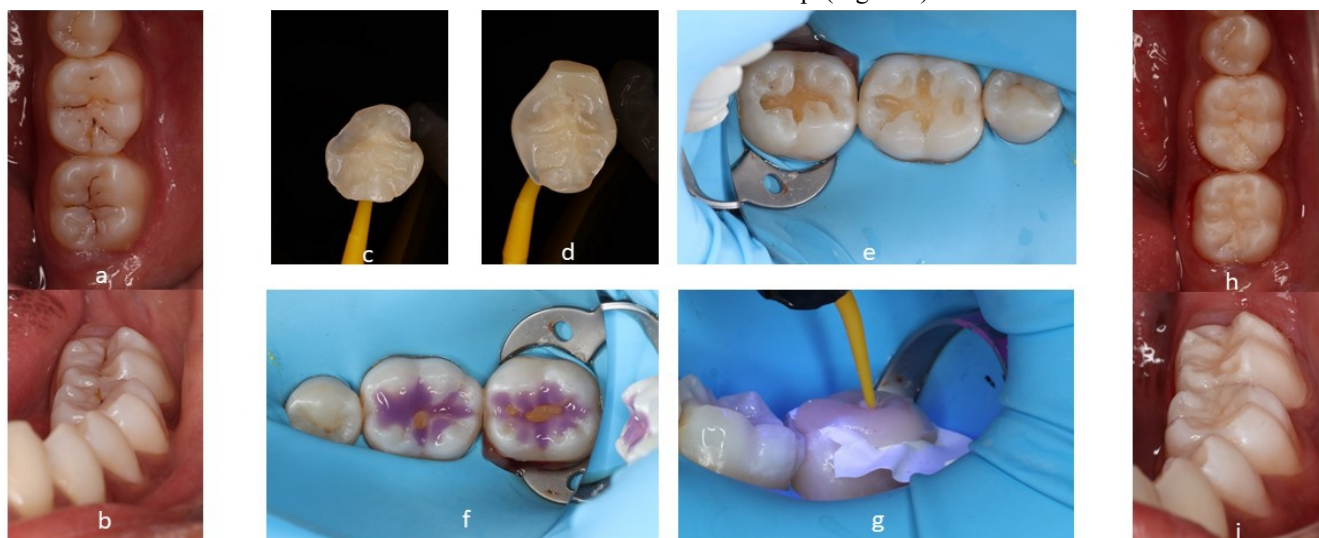


Figure 1 : a, b pre-operative photographs; c, d: Photographs of Stamp; e: Cavity Preparation; f: Selective Etching; g: Correct positioning of the stamp with Teflon tape and light curing; h, i: post-operative photographs

Discussion

Posterior teeth sometimes may present with intact occlusal morphology but with destructed dentin underneath. An adequate amount of healthy tooth structure has to be removed to reach the necrotized dentin.⁽²⁾ The ultimate goal of any restoration is to restore the normal form and function.⁽³⁾ Patient's compliance and acceptance of dental treatment can be improved by restoring the tooth surfaces to its natural topography.⁽¹⁾ It poses a great challenge for the general practitioners and dental specialists to harmonically reconstruct the posterior teeth. Since the index consists of an impression of natural form and contour of the tooth before the cavity preparation, the need for post-restoration occlusal correction is reduced.⁽³⁾⁽⁴⁾⁽⁵⁾

The main advantage of this technique is it requires reduced overall time because of instant desired cusp fossa relation and minimal chair side time in finishing and polishing procedure and is easy to implement in practice.⁽⁶⁾ There is decrease in microbubble formation and interference of oxygen in the curing of the final layer due to the index used.⁽⁴⁾ Whereas requirement of relatively intact occlusal surface and the time needed for the stamp preparation can be accounted as the limitation of this technique. Although this technique can be used for class II cavities, occlusal cavities are more preferred.⁽²⁾ Proper and precise placement of the stamp is also a pre-requisite for achieving proper cusp-fossa relationship.⁽⁷⁾

Conclusion

Stamp technique for direct composite restoration in posterior teeth is a very convenient and effective method. It is reliable and predictable and when performed correctly, helps the practitioner to replicate an accurate occlusal topography in minimal time than with the conventional method.

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