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CASE REPORT

STAMP TECHNIQUE - A NEW PERSPECTIVE FOR COMPOSITE RESIN RESTORATION: A CASE REPORT

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ABSTRACT

Adjusting the occlusal anatomy of teeth during posterior composite restoration consumes so much time. A microbrush stamp technique is a simple, reliable and effective way of producing the occlusal anatomy. This procedure involves duplicating the tooth anatomy of unprepared teeth and then replicating the same after cavity preparation.

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INTRODUCTION

The main objectives of a restoration is to restore the form, function and occlusion of the individual tooth that is mutilated by the disease. Compared to indirect restorations, where contact, contour and the occlusion is well controlled and achieved in the laboratory, the direct restorations pose challenges in achieving the same intra-orally. It can be technique sensitive, time consuming and may not result in precise reproduction of the form and occlusion. The various matrices available, for both metallic and non-metallic restorations, mainly enable achieving the contour and contact of the proximal surfaces, but do not help achieve the precise occlusion (Geena Mary). Another factor contributing to the rapid increase in composite resin restoration is the introduction of minimal invasive restorative procedures which stress on the conservation of sound tooth structure and usage of adhesive material in the posterior region (Mohamad Syahrizal Halim)

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For these cases, the literature describes a restoration technique using an occlusal stamp that allows to mimic the original tooth morphology (José Guilherme Férrer Pompeu). Direct composite restoration is a technique that requires experience. One of the newer evolved techniques for achieving an amalgamation of both esthetics and function is the 'Stamp technique'. This technique consists of fabricating an occlusal index. The obtained index is then pressed against the final composite increment before. This creates the positive replica. For this intact anatomical feature of the diseased uncavitated tooth is required (Alexey Murashkin).

Case 1: A 20 years old female patient reported to the department of conservative dentistry and endodontics, Sharad Pawar Dental College, Wardha. Complaining of a blackish discoloration of his lower left back tooth. Upon examining, a class I cavity was visualized on tooth 36.The tooth was isolated by rubber dam and a separating agent was applied on the tooth surface. Flowable composite resin was applied on the intact occlusal surface and indexed over the cusp tips. A tip of a microbrush was cut and was used as handle. The handle was immersed into composite and then polymerized by light to fabricate the occlusal stamp.

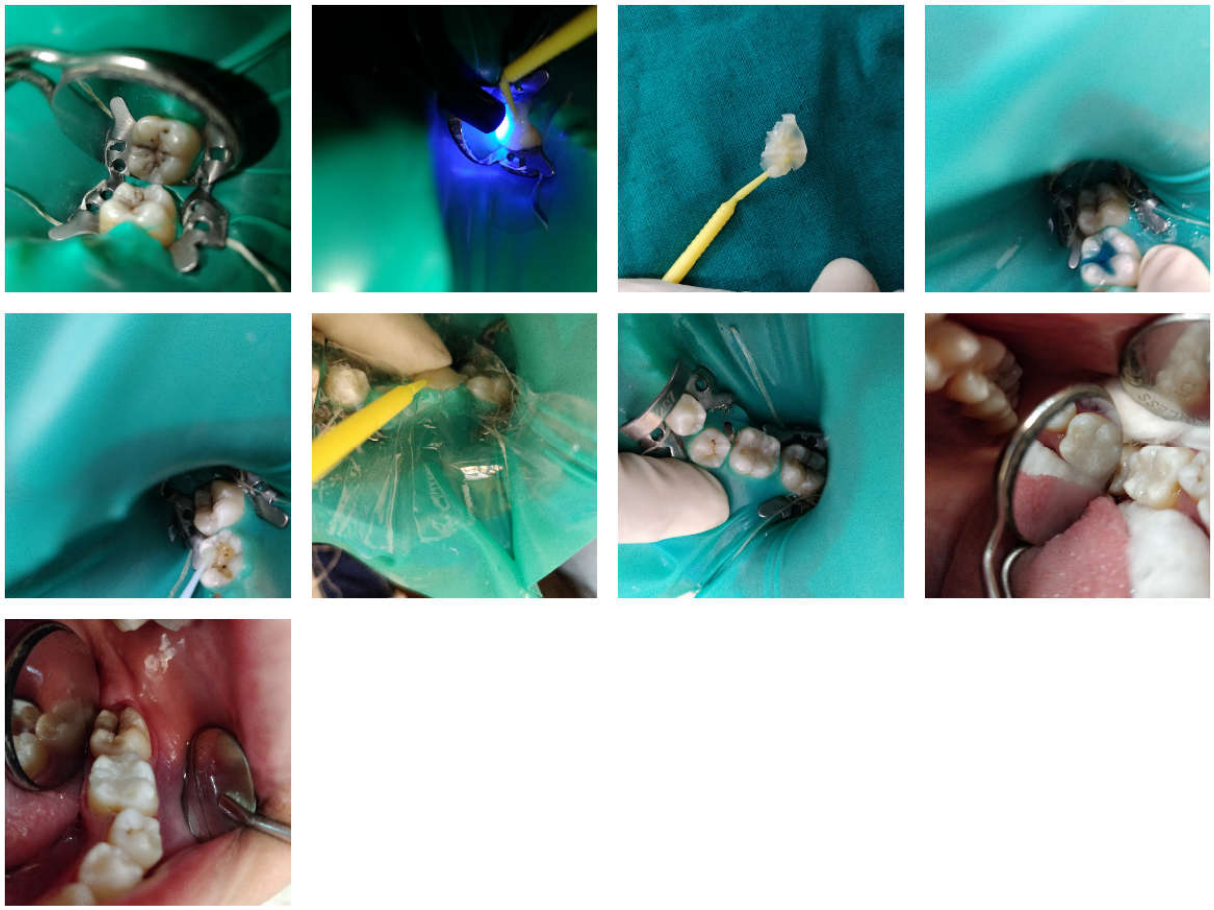

Figure 1.

Figure 2.

Caries was excavated and cavity preparation done. Selective enamel etching was done with 37% ortho phosphoric acid and rinsed with water. The cavity was dried to obtain frosty white appearance in enamel. Bonding agent was applied with an applicator tip and cured for 20 seconds followed by the incremental addition of packable resin composite resin. The restoration was light cured using LED for 20 seconds. After final increment was added, a cling film was applied onto the surface. The fabricated microbrush stamp was pressed over the cling film. Upon removal of the cling film, the gross excess was removed with sharp hand instrument. The resin composite was then cured.

Case 2: A 23 years old male reported to the clinic complaining of a blackish discoloration of his lower right back tooth. Upon examining, a class I cavity was visualized on tooth 46. After oral prophylaxis and rubber dam isolation, a small amount of flowable composite material was placed on the occlusal surface of the affected tooth. An applicator brush tip was then immersed into this composite and the composite was then cured. Following this, the cavity preparation was done. Then the last increment of composite was cured after the occlusal stamp was placed back on the teeth to replicate the previous anatomy. This case utilized a single shade of composite.

DISCUSSION

Posterior teeth with primary carious lesions may present an intact occlusal morphology in spite of undermining at the dentino-enamel junction. With little or no damage to the enamel, there is devastation of the dentin. In order to reach the infected dentin, a sufficient amount of healthy enamel has to be removed. In this lies the concept of using a composite stamp before the operative procedure. The prevalence of dental caries has decreased in the last decades (José Guilherme Férrer Pompeu). Post restoration finishing and polishing time is decreased. This is the main advantage of the above technique. The main concern of this technique is, it requires skill of the operator. This technique can also be used for uncavitated class II lesions. As flowable composite is usually preferred in this technique, decreased strength is expected. Therefore, cases which are indicated for this technique should be selected. This technique requires practice and precision. Obtaining accurate cusp fossa relationship is imperative. Without this, distortions result consequently, thus nullifying the prime objective of the technique (Alexey Murashkin).

Conclusion

Stamp technique for direct composite restorations is a convenient, favorable and biomimetic procedure. The accuracy of topography replication is far greater than the plain manual method and can be adapted to unconventional cavities as well.

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José Guilherme Férrer Pompeu1, Rhoana Coelho Morais2 OCCLUSAL STAMP TECHNIQUE FOR DIRECT RESIN COMPOSITE RESTORATION: A CLINICAL CASE REPORT

Alexey Murashkin. Direct posterior composite restorations using stamp technique-conventional and modified: A case series

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