

Impression Matters Stamp Technique

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Abstract: *Occlusal discrepancy after direct restorations often leads to discomfort to the patients. Newer methods are developed to overcome the previous problems and to reduce the time required. A stamp technique is proposed which is an easy procedure to recreate accurate occlusal topography for a direct composite resin restoration effectively and efficiently. This technique is indicated when the preoperative anatomy of the tooth is intact and not destructed or lost due to the carious lesion.*

Keywords: Class 1 restoration, occlusion, Composite stamp, fluoride bombs, microbubbles

1. 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 restorations, mainly enable achieving the contour and contact of the proximal surfaces, but do not help achieve the precise occlusion. [1]

“Stamp technique” for posterior composite restoration placement is a relatively new and novel method for duplicating occlusal anatomy with near perfection. Although convenient, it has found acceptance in only a small percentage of practitioners. Manually crafting an esthetic direct composite restoration is a technique that requires experience and skill. One of the newer evolved techniques for achieving an amalgamation of both esthetics and function is the ‘Stamp technique’. This new technique consists of fabricating an occlusal index which records the occlusal anatomy of posterior teeth before cavity preparation.[2]

Thus obtained index is then pressed against the final composite increment before curing to achieve a positive replica of the pre-operative anatomy. Stamp technique is practicable when the tooth being operated upon has intact anatomical features. This implies that occult caries with clinically unnoticeable cavitation can be restored by the stamp technique. [2]

2. Case Report

A 18-year-old male patient reported to D. Y. Patil School of Dentistry, Nerul, Navi Mumbai with a chief complain of Food lodgement and slight discomfort in lower left back region since 4 months. The clinical examination showed Class 1 Caries with respective to 36 [fig. 1(a,b)].The patient did not have pain and sensitivity, and the tooth was vital. As

only the occlusal surface of the tooth was involved, we opted for stamp technique for composite resin restoration in mandibular left first molar.

The tooth (36) was isolated with rubber dam (Fig,1-c) followed by placement of Teflon as barrier onto the tooth surface [Figure 1-d]. Packable composite was placed on top of the teflon with gentle pressure (fig. 1-e). A microbrush was attached to the composite, and light cured for 20 secs (Fig. 1-f,g). The carious lesion was removed and Class 1 cavity was prepared [Fig. 1-i]. Etching was done for 15 secs and air-dried with a three-way syringe (fig. k). After that, a bonding agent was applied and light cured for 20 secs (fig. 1-l). Incremental technique for composite restoration was followed up to 1 mm short of the occlusal surface (fig. 1-m). Each layer was light cured for 20 secs. Later, the last layer of composite was applied. The stamp along with the teflon was then placed on the last layer of composite and light cured (fig. 1-n,o). The excess material was removed. Minimal finishing and polishing of the restoration was done and occlusion was checked [Fig. 1-p].

3. Discussion

Posterior teeth, at times, present with caries with intact enamel surface but undermined dentin. Sometimes, lesions referred to as “Flouride Bombs” are present in a tooth. The topical application of fluoridated agent seems to mask areas of dentin decay. Such lesions present as bluish/black discoloration under enamel surface or may be seen radiographically. These are cases suited for restorations using ‘Stamp Technique’. Certain other applications of ‘Stamp Technique’ include proximally carious endodontically involved teeth with absolutely intact occlusal topography. [3]

The harmonic reconstruction of the posterior teeth occlusal surface morphology consists of a challenge for general practitioners and dental specialists. The occlusal stamp technique consists of a previous dental impression of the occlusal tooth face to be restored for further cavity preparation. This technique allows to re-establish the form, function and aesthetic dental structure, reducing the need for occlusal post-restoration adjustments and the porosity of the resin composite. The pressure exerted by the

stamp on the composite resin decreases the formation of micro-bubbles as well as interference of oxygen in the curing of the last layer. These are considered long-term success factors. The limitations of this technique is related to

the need to have the occlusal surface relatively intact and time spent confectioning the stamp.[4]

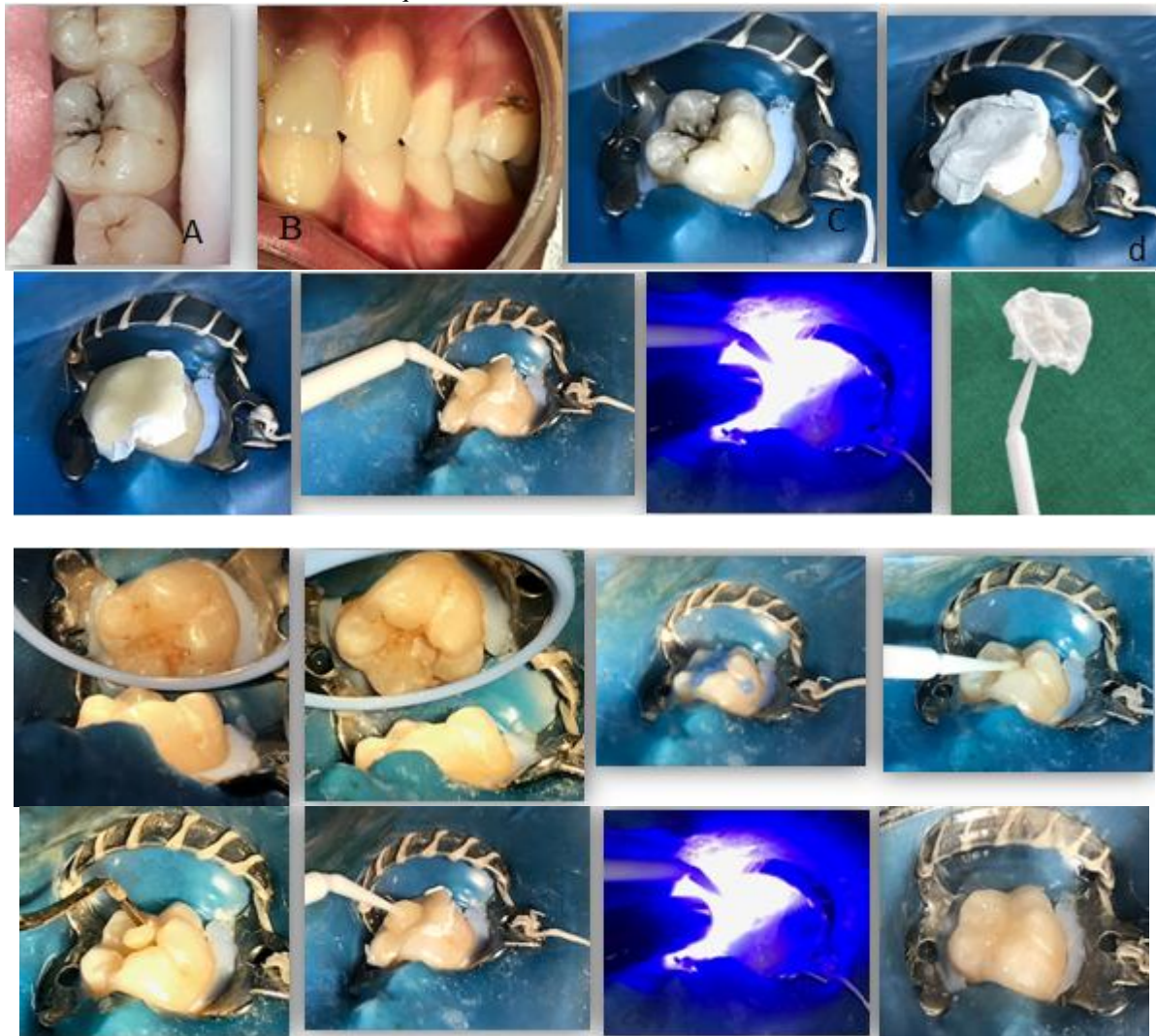


Figure 1: (a, b, c) Preoperative images. (d) Teflon placement on occlusal surface of the tooth. (e) Packable composite placed on top of the Teflon. (f) Attachment of a Microbrush.(g) Light curing the same. (h) Composite stamp. (i) Class 1 cavity prepared (j) GIC placed in the deeper area. (k) Etching.(l) Bonding. (m) Composite placement 1mm short of occlusal surface. (n) Composite stamp placed along with the Teflon on the last layer of the composite. (o) Light cured the same. (p) Post-operative image

In current case report, Bulkfil composite was used along with Teflon to create the occlusal impression.

4. Conclusion

The occlusal stamp technique is effective for direct composite resin restoration in posterior tooth with hidden caries and extensive dentin involvement. In addition, this technique minimizes the operative time by eliminating post-restoration occlusal adjustments.

References

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