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A Review on Astringent Retraction Capsule

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The inability of the impression materials to adequately displace soft tissues, fluid, debris mandates adequate isolation. Of various retraction systems available in the market, most recent is astringent retraction capsule 3M ESPE, designed with an extra-fine tip that can be inserted right into the gingival sulcus, which is a solution for effective gingival retraction. The current article discusses the clinical techniques of astringent retraction capsules 3M ESPE in the view of material science.

KEYWORD: astringent, finish line, sub gingival margins, retraction capsule.

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INTRODUCTION

Full coverage restorations often require sub gingival margins because of carries, aesthetical demands, existing restoration, additional restoration and others². Exposing the gingival margins of a prepared tooth prior to the placement of finish line and making impression is one of the difficult procedures for the dentist to perform. However, the advantages of gingival retraction are manifold compared to the difficulties encountered⁵. Need for the gingival retraction includes:-

1. To widen the gingival sulcus in order to provide access for impression material to reach the sub-gingival margins and to record adequately the finish line.
2. Helps in obtaining the perfect die with accurate margins, which helps in margin placement and contouring of the restoration.
3. Helps in blending of the restoration with the unprepared tooth surface.
4. Helps in placement and finishing of the margins on the prepared tooth.
5. During cementation it helps in easy removal of cement without tissue damage.
6. It helps the dentist in visually assessing the marginal fit and any caries if present.
7. It is useful in situations when it is necessary to extend the restoration below the gingival margin to enhance retention.
8. To enhance access and to prevent damage to the soft tissue during cavity preparation procedure, it may be desirable to carry out some degree of gingival retraction prior to commencement of preparation.

According to Shillinburg's 1976 and 1979 studies, 77% of officer's surveyed used epinephrine impregnated cords. In 1985, Denovan's survey reported 79% of the general dentists using epinephrine. A study by Hansen et al, in 1999 revealed, that the most common medicaments used by prosthodontists for finish line exposure are buffered Aluminium Chloride (55%), followed by Ferric sulphate (23%). Use of cord impregnated with Aluminium Chloride (5 to 10%) is referred to be the safest and most effective method of gingival retraction.

There are various gingival displacement techniques such as Mechanical, Chemico-mechanical, Surgical, Electrosurgery, Rotary curettage, and injectable material. Different medicaments have been used or suggested for gingival retraction procedures. These include Epinephrine, Aluminum chloride ($AlCl_3$), Aluminum sulphate, Zinc chloride, Alum (Aluminum Potassium Sulfate), Ferric Sulfate and Ferric sub sulfate.



Among all the retraction systems **3M ESPE** astringent retraction paste is the new entrant in this field. Many studies have been done with Ultrapak and Expasyl till the date; the number of studies carried out on **3M ESPE** astringent retraction capsule is very much limited

This **3M ESPE** astringent gingival retraction paste offers:-

- 1) An innovative capsule tip which penetrates easily into the groove.
- 2) An innovative paste for a clean and dry groove area with a long-lasting homeostasis.

ADVANTAGES

- 1) Effectively opens the groove.
- 2) Retraction paste application for 1-3 teeth.
- 4) Easy access to tight interproximal areas.
- 5) Long lasting haemostasis.
- 6) Gentle on tissue with less risk of tissue trauma and haemorrhage.
- 7) Better patient comfort.
- 8) Effective retraction.

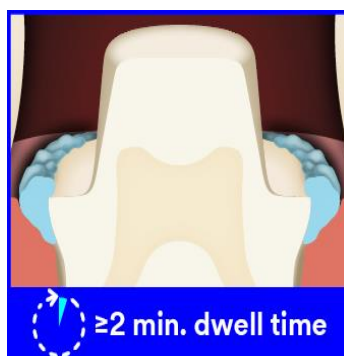
INDICATION

- 1) Temporary retraction of the gingival margin, in order to provide a dry groove when the periodontal tissue is healthy.
- 2) Also indicated for taking impressions, preparation of provisional, development of class II and IV seals.
- 3) Innovative paste for a clean, dry groove area with long lasting haemostasis.



STEP BY STEP PROCEDURE

- 1) The capsule must be taken out of the blister immediately prior to application. It should not be stored outside the blister. Remove a retraction capsule from the blister and Retraction capsule is inserted into dispenser. Extrude a small amount of paste, insert retraction capsule tip into the sulcus.
- 2) Insert retraction capsule tip into the sulcus.
- 3) Inject astringent retraction paste into sulcus. Completely fill the sulcus.
- 4) Leave astringent retraction paste on for a minimum of 2 minutes.



- 5) Completely remove astringent retraction paste with air-water spray and suction. If a haemostatic device is applied for too long a time, it may exert unwanted negative effects on the tissue health. Therefore, the haemostatic retraction paste must be rinsed off completely.

CONCLUSION

Gingival retraction and fluid control play an indispensable role in fixed partial denture fabrication. The choice of the technique and material depends on operator's judgment of the clinical situation apart from availability and cost of materials. **3 M ESPE retraction systems** is a promising system for the control of hemorrhage, reduced time for application and ease of placement.

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