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## Soft Tissue Management for Traditional Impressions Using 3M ESPE Retraction Capsule

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### Introduction

Gingival bleeding is a common occurrence in the clinical practice of dentistry. Hemorrhage may occur in areas of interproximal decay, tooth fractures near the gingival margin, and areas of hypertrophic gingival tissues. Minimal bleeding may often be controlled merely with a cotton pellet and minimal pressure and may be a non-complicating factor. However, there are clinical situations in which bleeding must be controlled to achieve a successful treatment outcome. Typical treatment for retraction and control of gingival bleeding includes the use of retraction cords with or without hemostatic medicaments. This procedure may be uncomfortable for the patient, time consuming for the dentist, and may provide inconsistent results in the preparation of a dry and well retracted gingival sulcus.

**3M ESPE Retraction Capsule (3M ESPE)** is a retraction paste for the displacement of marginal gingiva and hemostasis within the sulcus. It is dispensed in a capsule applicator and directly applied into the sulcus. It is meant as an alternative to cords or may be used as an adjunct to a single cord. The active ingredient in **3M ESPE Retraction Capsule** is aluminum chloride, which constricts or occludes blood vessels, causing denaturation and providing a physical meshwork. This retraction paste is indicated for any patient with a healthy periodontium and predictably provides a dry and well retracted field.

### Clinical Case

A 55-year-old female presented with a crown on tooth #13 (#25 FDI) (Figure 1) that she “has never been happy with.” The original porcelain-fused-to-metal crown was seated 8 years ago. The patient reported that her gingiva “has not felt right since the crown was done” and that she has “had a whitish area on her gum tissue” ever since the crown was fabricated. The patient suspected these symptoms were due to a metal allergy. The clinical examination of this



**Figure 1:** Pre-op photo of tooth #13. Notice area of leukoplakia on attached gingiva adjacent to #13 (#25 FDI).

patient revealed an open margin with food impaction on the distal of tooth #13 (#25 FDI), the facial margin showing a slight metal collar. While the shade match seemed appropriate, #13 (#25 FDI) was more opaque than its neighboring teeth most likely due to masking of the metal substructure. Thus, tooth #13 (#25 FDI) was treatment planned for an all-ceramic crown for strength, esthetics, and to eliminate the possibility for a metal allergy.

**Procedure**

Local anesthetic was administered and the area was isolated with high-volume evacuation and cotton rolls. The porcelain-fused-to-metal crown was removed. The preparation on #13 (#25 FDI) was refined according to the recommended guidelines: 1.5 mm axial reduction and 2 mm occlusal reduction with rounded line angles and a chamfer margin. Margins were placed at the gingival level where possible. The existing distal margin of the PFM crown dictated a subgingival margin on the refined preparation. Due to the distal subgingival margin and irritation of the gingiva due to food impaction, gingival bleeding on the distal of #13 (#25 FDI) became an issue (Figure 2).



*Figure 2: Note slight bleeding on the mesial and deep margin with bleeding on distal.*

A common retraction procedure using a #0 cord was not successful. The distal of #13 (#25 FDI) continued to bleed. The narrow tip of the **3M ESPE Retraction Capsule** allowed for the placement of the retraction paste into the sulcus of #13 (#25 FDI). The paste was left in place for two minutes (Figure 3). Water spray and high-volume evacuation were used to remove the paste from the sulcus. The gingiva was adequately retracted, the sulcus was dry, and the margins of the crown preparation were clearly visible (Figure 4).

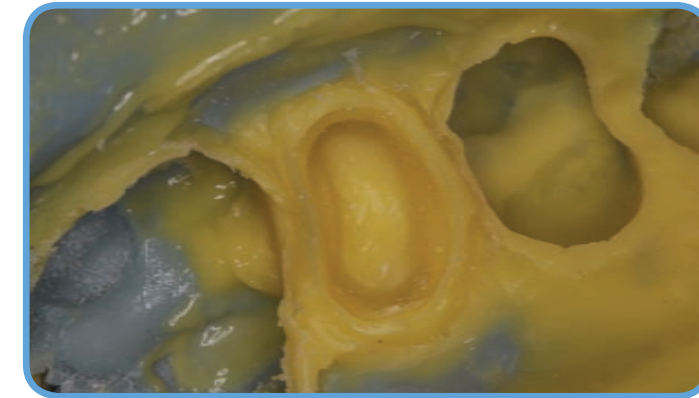


*Figure 3: 3M ESPE Retraction Capsule paste is injected into the circumference of the gingival sulcus.*



*Figure 4: Tooth #13 (#25 FDI) after rinsing 3M ESPE Retraction Capsule paste. Note that the sulcus is well retracted and dry. Margins of the crown preparation are clearly visible.*

A PVS impression was taken with **Imprint 3 (3M ESPE)** using a quadrant triple tray. The tray was filled with Penta heavy body while **Imprint 3** light body was utilized around the preparation. The impression tray was inserted and the patient was instructed to close her mouth and hold the impression in place for 5 minutes. When an impression is taken on a preparation with subgingival margins and hemoraging, the resulting impression may be compromised. **Imprint 3** provided accurate details and distinct margins around the entire circumference of the crown preparation (Figure 5). Tooth #13 (#25 FDI) was temporized using **Protemp Plus (3M ESPE)** and cemented with **Rely-X Temp NE (3M ESPE)**.



*Figure 5: The impression shows visible margins around the circumference of the preparation.*

The laboratory fabricated a pressed lithium disilicate crown (**IPS e.max, Ivoclar Vivadent**). The patient returned two weeks later and the crown was evaluated for fit, esthetics, margins, interproximal contacts, and marginal adaptation. The crown fit perfectly and was cemented with **RelyX Unicem (3M ESPE)**. The occlusion was checked and no adjustments were necessary. It was also noted at the cementation appointment that the patient's area of gingival irritation and leukoplakia had healed in the two weeks while wearing a provisional crown on tooth #13 (#25 FDI) (Figure 6).



*Figure 6: Final cementation of #13 (#25 FDI).*

## Conclusion

The use of gingival retraction devices and hemostatic agents has been the standard of care in crown and bridge dentistry for years. **3M ESPE Retraction Capsule** provides predictable hemostasis within the gingival sulcus and excellent retraction. The retraction paste can be placed easily into the sulcus by the narrow tip of the retraction capsule. It is easy to use, is comfortable for the patient, and may be used as an alternative to other retraction devices or may be used as an adjunct to a single cord. Most importantly, **3M ESPE Retraction Capsule** provides a dry and well-retracted operative field and assists in optimal, accurate and predictable impression taking for the clinician.

## Credits

*Nellmar Laboratory, Ann Arbor, Michigan*