The impact of soft tissue management on marginal quality of restorations

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Soft tissue management has a huge impact on the marginal quality of indirect restorations. The gingiva has to be deflected in such a way that a detailed record of the preparation margin can be captured with the impression material or the intraoral scanner if a digital procedure is chosen. Traditionally, soft tissue retraction is achieved with retraction cords. They are available in different designs and some of them are impregnated with haemostatic agents. Retraction paste systems and surgical methods such as laser tissue sculpting or electro-surgery have been adopted more recently.

The new 3M™ ESPE™ Astringent Retraction Paste for gingival deflection and haemostasis presents a suitable alternative to the existing cords in many cases. It is applied directly into the sulcus to open it mechanically and to stop exudation. Depending on the depth of the preparation and the level of sulcular exudate flow, it may eliminate the need for a cord completely or may replace the second retraction cord when the double cord technique is indicated. The innovative product proves its worth especially in situations with a minimally invasive preparation. The benefits of its use are a quicker and more comfortable procedure as compared to the traditional workflow.

In the following article, a patient case is presented to illustrate the combined use of retraction cords and the innovative astringent retraction paste that has been introduced by 3M ESPE.
Figure 10: Close-up view of the minimally invasive preparations on the right central and lateral incisors before …

Figure 11: The retraction effect is clearly visible: the preparation margins are exposed on both teeth since the tissue is displaced. Furthermore, an open, dry and clean sulcus is obtained.

Figure 12: Retraction effect on all prepared teeth. At the teeth with crown preparations, one cord is removed while the other one is still in place.

Figure 13: An impression is taken in the monophase technique using 3M™ ESPE™ Impregum™ Penta® Soft Polyether Impression Material. All details of the finishing line are perfectly visible in the impression.

Figure 14: The effect of the preparation and the efficient gingival retraction are visible on the plaster model: the finishing lines were precisely transferred to this replica of the situation in the patient’s mouth.

Figure 15: The final restorations: three glass ceramic veneers and two crowns fabricated using the refractory die technique after etching of the inner surface with hydrofluoric acid and application of 3M™ ESPE™ Scotchbond™ Universal Adhesive.

Figure 16: Final restorations in place, immediately after cementation with 3M™ ESPE™ RelyX™ Ultimate Adhesive Resin Cement in combination with 3M™ ESPE™ Scotchbond™ Universal Adhesive.

Figure 17: Thanks to the accurate record of marginal detail obtained by soft tissue management prior to impression taking, the fit of the crowns and veneers is excellent. Highly aesthetic restorations are obtained which are indistinguishable from natural teeth.

Figure 18: This is partly due to perfect margins: the soft tissue is healthy and has a natural shape. The patient is very happy with the beautiful treatment result.

Figure 9: Close-up view of the use of 3M™ ESPE™ Astringent Retraction Paste. The paste was removed after 2 minutes by rinsing with water. There is a visible change in distance between the soft tissue and the preparation margin.

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