

Soft tissue management

Tony Beale describes innovative products to help achieve successful hemostasis and tissue displacement

Considerations in impression taking and bonding

The success or failure of an indirect dental restoration will depend upon its accuracy of fit, and this will be directly dependent upon the care taken in producing a useable and accurate impression of the prepared tooth, or teeth.

Practitioners can devote much time in trying to achieve ideal preparations, but this work can be negated by a resultant impression that may be deficient in detail and poor marginal definition.

In order to achieve ideal impressions that will allow the fabrication of successful crowns and bridges, it is essential the soft tissue marginal detail is precisely recorded, thus allowing modern impression materials to be utilised to their best advantage.

To create ideal conditions in which impressions can be taken, careful attention must be given to the conditioning of the soft tissues that will then allow the marginal areas of the preparation to be precisely recorded. The control of bleeding (hemostasis) is paramount; the objective being to attain dry soft tissue before impressions are taken, and to avoid contamination. Effective displacement of the soft tissues is equally important, as this is the only way to ensure correct recording of the gingival margins.

It should also be recognised that the control of bleeding and soft tissue displacement can be an important consideration in other intra oral procedures such as bonding (particularly when using 'self-etch' products), temporary and permanent restoration seating, cavity preparations and rubber dam placement.

Tissue management products and procedures

Various products have been developed that can serve to assist the clinician in achieving profound hemostasis and soft tissue displacement, and among the recognised innovators of the past 40 years, Dr Dan Fischer, the founder of the Ultradent company, has made several significant contributions in this area of dentistry.

In his efforts to address the problems associated with effective soft tissue management, Dr Fischer developed 'Astringedent' a 15.5% Ferric sulphate solution. This product acts rapidly to produce hemostasis, and plays an important role in gingival displacement. Later product development resulted in the



Figure 1: Subgingival preparation with bleeding



Figure 2: Burnish Viscostat firmly against the sulcus with Dento-Infusor Tip



Figure 3: Pack Ultrapak knitted cord soaked in Viscostat, using Ultradent Packer



Figure 4: Remove cord: firm air/water spray, and dry



Figure 5: The result – a clean, dry finish line ready for impression taking

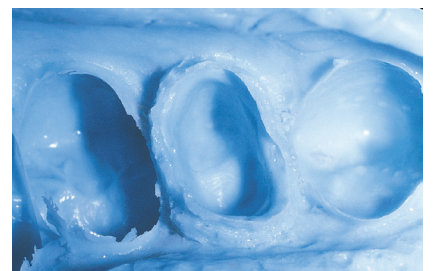


Figure 6: Predictable, quality impressions will provide a perfect base for the dental technician



Figure 7: Metal Dento-Infusor tip. Note padded brush end

introduction of 'Visco-stat', a 20% ferric sulphate buffered gel, which is less acidic and kinder to the soft tissues. Due to its greater viscosity, it does not 'slump' or 'run' when applied.

Dr Fischer states that tissue management procedures must be carried out in two stages - control of bleeding first, followed by tissue displacement. A specially designed 'Dento-infusor' tip, which incorporates a small padded brush head, is attached to a small Luer Lock dispensing syringe, allowing the operator to apply the Ferric sulphate products. The 'Dento-infusor' tip must be used simultaneously to rub the sulcus vigorously so as to promote deep penetration, and sealing of the sulcular capillaries by small coagulum plugs. The area must be kept moist throughout the procedure.

Effective coagulation will occur within seconds, with any excess coagulum easily cleared through use of the air/water spray. This method is controlled and allows optimal results to be achieved, without the

need to use cotton pellets, or conventional brushes.

Having achieved hemostasis, the sulcal areas around the preparation should be packed with Ultradent 'Ultrapak' knitted retraction cords. These cords are made from 100% cotton knitted into thousands of tiny loops that form long interlocking chains. Unlike some cords they do not fray when cut, or when contacted with a diamond bur, and are extremely absorbent and will stay in place. They exert an elastic effect on the gingival cuff, thus producing displacement of the soft tissues. As they are not impregnated, they should be soaked in 'Viscostat' or 'Astringedent', and can be neatly packed into the sulcus using the Fischer cord packers, which are available in serrated and non-serrated patterns.

The cords will compress on packing, so it is recommended that an oversized cord be selected in order to achieve optimal tissue displacement. Cords should be left in place for one to three minutes before removal, and a firm air water spray used to

clear any residual gel or solutions.

In seeking to address problems associated with working in the aesthetic zone, Ultradent have recently introduced 'Viscostat Clear', a viscous and spreadable 25% aluminium chloride gel. It is ideally suited for use where anterior restorations exhibit minor bleeding, as no coagulum is formed, and any resultant hemostatic residue will not adhere to tooth preparations. Its effectiveness can be enhanced by use of a 'Dento-Infusor tip' to rub the gel into sulcus. Soaking of the Ultrapak cord in 'Viscostat Clear' followed by placement for four to five minutes is recommended. It is especially suited to procedures where 'self-etch' bonding is to be carried out as it will not show any signs of staining to hard or soft tissues, (which can be experienced with the Ferric sulphate based product). It is also very effective in controlling sulcular fluids when Class 5 restorations are undertaken.

'Viscostat Clear' offers the practitioner the benefit of a rapid onset, with no adverse effects when direct bonding, and compatibility with impression materials.

Conclusion

In developing the above described products it will be seen that Ultradent have succeeded in providing a complete range of materials that can satisfy the dental practitioner's requirements in seeking to achieve profound hemostasis and soft tissue displacement.

Having attained these goals, this will contribute significantly to the taking of accurate impressions that will possess excellent marginal definition.

Dr Dan Fischer

FMC Events is hosting a one-day seminar, conducted by Dr Dan Fischer on the 'Future of dentistry'. It will take place at the royal college of Physicians in London on 17 September 2012, and will show how the use of modern materials and techniques can prove to be of great benefit to both dentists and patients. Seven hours verifiable CPD. To book your place, call 0800 371652 or visit www.fmc.co.uk/events



Figure 8: The range of Ultrapak knitted retraction cords, sizes 000 to size 3

All of the products mentioned in this article are available from Optident Ltd, International Development Centre, Valley Drive, ILKLEY, LS29 8AL. Call 01943 605050, email sales@optident.co.uk or visit www.optident.co.uk.