

Review Article**Gingival Retraction Made Easier****Pitti Varun Hiralal¹, Syed M Noorani², Saurabh Shrivastava³, Nimit Jain⁴**¹Reader, Dept of Prosthodontics, Crown and Bridge, Karnavati School of Dentistry, Gandhinagar, Gujarat, India^{2,3,4}Senior Lecturer, Dept of Prosthodontics, Crown and Bridge Mansarovar Dental College, Bhopal, India

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ABSTRACT

The success of fixed prosthodontic restorations is largely dependent upon the long-term health and stability of the surrounding periodontal structures. Several clinical methods are available for adequate gingival retraction. As with other procedures in restorative dentistry, a few relatively new products and techniques have been developed. The purpose of this article is to discuss the new advancement in gingival displacement.

Introduction

The success of fixed prosthodontic restorations is largely dependent upon the long-term health and stability of the surrounding periodontal structures.¹ Full coverage preparations often require subgingival margins because of caries, existing restorations, esthetic demands, or the need for additional retention.^{2,3} The gingival displacement procedure allows the impression material to flow apical to the subgingival finish line thereby exposing it and an area apical to it.⁴ Several clinical methods are available for adequate gingival retraction, including mechanical retraction, chemical-mechanic retraction, electrosurgery, and rotary gingival curettage.^{6,7} As with other procedures in restorative dentistry, a few

relatively new products and techniques have been developed.

EXPA-SYL TEMPORARY GINGIVAL RETRACTION SYSTEM:

Expa-syl is a non-cord gingival retraction product recently marketed by the SDS/Kerr Company (Figure 1). It consists of a green coloured paste mainly composed of Micronized kaolin, Aluminium chloride and water. It is provided in glass cartridges. A metal dispenser gun is used to express the paste through a disposable metal dispensing tip into the gingival sulcus prior to impression making (Figure 2) or prosthesis cementation. It creates space between the tooth and the tissue, like a retraction cord (Figure 3). One purported advantage of Expa-syl over cord is that since it is

placed with little or no pressure, damage to the epithelial attachment is minimized^{8,9}.

GEL-CORD:

Gelcord contains- 25% Aluminum Sulfate Gel. It Stays where it is placed - will not run or dilute like liquid astringents for maximum hemostasis . Reduces tissue trauma . No tissue necrosis or blackening of tissue. Great for Class V Restorations or if tissue is cut during composite procedures. Simply rub gel into the hemorrhaging area. It has pleasant raspberry flavour for greater patient acceptance. Blue in colour for easy visibility and placement (Figure 4) . Makes initial cord packing easier by providing lubrication when packing cord, allowing the cord to glide into the sulcus¹⁰⁻¹¹ (Figure 5).

MAGIC FOAM CORD:

Magic Foam Cord is the first expanding PVS (Poly Vinyl Siloxane) material designed for easy and fast retraction of the sulcus without the potentially traumatic and time consuming packing of retraction cord. Non-traumatic method of temporary gingival retraction. Easy and fast application directly to the sulcus without pressure or packing.

Effortless removal . It comes in one piece (Figure 6). No need for extensive rinsing of residue or hemostatic chemicals. Comfortable to the patient and no special training or technique is required. Contains no hemostatic chemicals that may contaminate the impression^{10,11}.

COMPRE-CAP AND COMPRE-ANATOMIC:

Comprecap have thin and firm walls and a deep hollow making it easy to place Comprecap on adjacent teeth. The caps have a flat surface for the patient to bite on (Figure 7). Comprecap is simple to use. After placing the retraction cord the cap is placed over the prepared tooth and pushed into the sulcus. The patient

bites on the cap for 3-5 minutes and then it is removed carefully, along with the retraction cord. 3 sizes are sufficient for use on incisors, premolars and molars. The advantages are obvious: the Comprecap exert more pressure onto the retraction cord and in the gingival area Comprecap anatomic is anatomically formed compression caps. Compared to the regular Comprecap, Comprecap anatomic has semicircle shaped spaces on two opposite sites, which correspond to the anatomy of the dental arch. It Stops bleeding naturally, by compression and open the sulcus wide (Figure 8). Ensure a dry, clean area and well defined gingival margin. Have a flat base which provides an optimum bite surface for the patient. Enough stability is given to exert pressure onto gingiva and retraction¹⁰⁻¹¹.

TISSUE GOO

Tissue Goo is a gel that stays where you place it and offer exceptional hemostatis without compromising the health of the gingival tissue (Figure 9). Tissue Goo's active ingredient is 25% aluminum sulfate, which will control bleeding throughout the cord placement and tissue management processes. Aluminum sulfate is much kinder to soft tissue than other hemostatic agents; it does not cauterize, but rather acts similar to a coagulant to stop the bleeding, ensuring your patient's tissue will not turn black. During retraction cord placement, tissue goo acts as a lubricant. Place tissue goo around sulcus and then pack retraction cord through the goo. The retraction cord will provide ideal tissue displacement, while absorbing the goo and delivering the hemostatic agent into the sulcus (Figure 10). Tissue Goo will not interfere with the set of your impression material¹⁰⁻¹¹.



Figure 1



Figure 2



Figure 3



Figure 4



Figure 5



Figure 6

GINGITRAC GEL

GingiTrac is a hand-free gingival retraction system (Figure 11). It is an effective gingival retraction system that truly harnesses the power of pressure, astringency and time. Unlike traumatic cord techniques or messy paste alternatives, GingiTrac delivers the perfect combination of built-in astringency, gentle retraction and fast setting times to assure the most accurate impressions¹².

LASERS

Laser are used to remove gingival sulcular epithelium. Laser energy is delivered which had a wavelength of 980nm and power of 0.8W , in continuous mode. Continuous mode was used, as the laser energy was delivered in single stroke by passing the laser tip along the gingival sulcus. Laser tip is inserted 1mm into the

gingival sulcus, to facilitate an accurate recording of finishline. Topical anaesthetic gel is applied onto the gingival sulcus region before retraction procedure^{13,14}.

RETRACTION CAPSULE

Appendix A. The recently introduced 3M™ ESPE™ Retraction Capsule is poised to address many of the complaints about current retraction products (Figure 12). This 15% aluminum chloride retraction paste is packaged in unit-dose capsules that are designed with an extra-fine tip that fits directly into the sulcus. When compared with retraction cords, the retraction procedure with this material can be up to 50% faster. Additionally, while patient comfort is not typically a factor associated with retraction, this product offers dentists an option that is easier on patients.

Appendix B. It reduces the risk of bleeding and/or hemorrhage after it is removed, and it is gentler on gingival tissue. The fine tip of the capsule—which is significantly smaller than competitive products—provides better access into the sulcus and interproximal areas. Additionally, because the tip of the capsule is plastic with round, soft edges, dentists can use it with less worry about damaging the tissue and causing patient discomfort¹⁵.

G CUFF

Recently, a Canadian company, Stomatotech, came up with a simple idea to retract the gingival tissue using a disposable plastic collar (Figure 13) that is inserted on the apical end of the abutment before the abutment is engaged to the implant (Figure 14). Following the abutment's engagement to the implant, the plastic collar is found between the apical part of the abutment and the gingival soft tissue. Shortly after the removal of the impression from the mouth, the plastic collar is pulled out and removed permanently. The plastic



Figure 7



Figure 8



Figure 9



Figure 10



Figure 11



Figure 12



Figure 13



Figure 14

collar creates a perfect gingival retraction with a valve factor preventing the liquids from contaminating the area of the finish line of the abutment. The main purpose of G-Cuff is to support soft tissue that surrounds the implant abutment allowing the impression means (conventional or digital) to have an access to the surface of the abutment needed for the optimal restoration¹⁶.

CONCLUSION

A successful gingival displacement must expose the margins of the prepared abutments to the impression material, Must provide for an adequate bulk of impression material in the margin to prevent fracture or distortion of the material in this region when the impression is removed. It must control bleeding and serum seepage in the gingival sulcus during the

impression procedures, and must not cause irreversible damage to the gingival tissues. Evaluating the clinical efficiency is difficult because of the lack of appropriate measuring tools. Choice of appropriate gingival retraction system is still a dilemma in the mind of the operator.

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