METHODS OF GINGIVAL RETRACTION: A REVIEW

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ABSTRACT

Indirect restoration like cast gold inlays, onlays, partial veneer crowns, complete crowns, metal ceramic, all ceramic crowns, bonded ceramic inlays and onlays are routinely used to restore defective teeth. These restorations frequently have cervical margins that are intentionally placed in gingival sulcus for esthetic and functional reason. In these situations the clinician must make impressions that accurately capture the prepared cervical finish lines and permit the fabrication of accurate dies on which the restorations are fabricated. This marginal fit of the restoration is necessary to prevent recurrent caries and gingival irritation. The procedure used to facilitate effective impression making with intracervical margins is gingival displacement or retraction. The present article added a focus on different gingival retraction methods and its recent advances.

Keywords: Astringents, Gingival retraction, Hemostatic agents, Impression.

INTRODUCTION

Prosthodontics is the branch of dentistry related with the replacement of damaged or missing teeth with artificial substitutes (prostheses) such as implants, crowns, bridges and dentures. The aim of the prosthodontic treatment is a healthy coexistence of prostheses and the nearby tissues1,2. For the preparation of the prostheses to replace and repair teeth, both aesthetic and functional considerations are required. For this purpose the cervical margins of restorations are often placed near to gingival margin or in the gingival sulcus. In these situations, it is necessary that clinicians should obtain an accurate impression, which records efficiently the location of the prepared finishing line to obtain optimal fit1,2. The important objective for impressions and interim crowns or fixed dental prostheses is to register the prepared abutments and finish lines accurately. For successful subgingival impression, an effective management of the sulcular environment is needed. It involves two key aspects: the force that comes to bear on the gingival tissues and contaminants that may be present or generated in the sulcus.3,4 In the oral cavity, the finishing line is covered by the free gingival margins. So, in order to record accurate impression with finishing line, the gingiva of the concerned tooth must be retracted.

Gingival displacement is defined as “the deflection of the marginal gingiva away from a tooth” and can be induced by various retraction techniques and materials. It should be both in the lateral as well as in a vertical direction1,5,6. Gingival displacement is a relatively simple, atraumatic procedure if the gingival tissues are in an optimum state of health. Attempting gingival displacement when gingiva is inflamed may result in gingival recession.5,6

Various techniques of the gingival retraction:
The techniques used for gingival displacement can be broadly classified into Mechanical, Chemico-mechanical and surgical techniques:

Mechanical Techniques:
1. Copper band: Copper band serve as a means of a mechanism for displacing the gingiva as well as carrying the impression material, to insure that the gingival finish line is captured in the impression5,7.
2. Rubber dam: It creates clean and dry environment, so that excellent impressions can be obtainable of the prepared teeth6,7.
3. Displacement cords: These are supplied in three basic designs; namely braided cords, twisted cords and knitted cords. Selection of the cord is determined by the operator preference and the cord that can be placed least traumatically in the sulcus should be used. Cords are
Recent advances in gingival retraction techniques are:

1. Magic Foam cord (Coltene/Whaledent): It is the first expanding vinyl polysiloxane material designed for retraction of the gingival sulcus without time consuming and potentially atraumatic packing of retraction cord. It is a non haemostatic cordless retraction system and consists of foam, cartridges for mixing, intraoral tips and comprecaps; which are available in three sizes.

2. Expasyl (Kerr): It is a universally accepted and widely used gingival retraction paste, which is composed of three materials: Aluminum chloride, Kaolin and Excipient. It has both mechanical and chemical action. It creates and maintains space in the sulcus due to optimal characteristics of its viscosity which is mainly due to its kaolin component.

3. Gingitrac (Centrix): It uses a pre-loaded syringe to apply the paste around the margins, which contains an astringent, and if necessary a haemostatic agent.

4. Merocel retraction strips: It is a synthetic material obtained from biocompatible polymer, i.e. hydroxyethyl cellulose. Polyvinyl acetate. It is fibre free, chemically pure and hemostatic material that can absorb intraoral fluids.

5. Matrix impression system: Matrix impression system is a new system that requires a series of three impression procedures, using three viscosities of impression technique.

6. Racegel: Racegel is a new hemostatic agent that controls bleeding and absorbs crevicular fluid prior to and during impression taking and crown placement.

7. Stay Put: Stayput impregnated combines the advantages of an impregnated braided retraction cord with the adaptability of a fine metal filament.

The impression techniques used for the gingival retraction are as follows:

- Single cord technique,
- Double cord technique,
- Infusion technique,
- Retraction strip
- Temporary acrylic coping impression
- Matrix impression system
- Modified custom tray technique

CONCLUSION

Gingival displacement is an important procedure with fabricating indirect restorations. It is relatively simple and effective when dealing with healthy gingival tissues and when margins are properly placed a short distance into the sulcus. Several techniques have proven to be relatively predictable, safe and efficacious. No scientific evidence has established the superiority of one technique over the others, so the choice of technique depends on the presenting clinical situation and operator preference.

REFERENCES


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