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Research Article

### A COMPARATIVE STUDY BETWEEN TWO METHODS FOR GINGIVAL RETRACTION (OBSERVATIONAL AND TRADITIONAL) ON THE MARGINAL ACCURATENESS OF THE FINAL MODELS

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**Abstract:**

**Aim:** The aim of the study is to compare the appearance of the finish line by an observational method with a new method of taking an impression and dislocation of gingival tissue without the gingival cord.

**Place and Duration:** In the prosthodontics Department of University Medical and Dental Hospital, Faisalabad for six months duration from September 2019 to February 2020.

**Methods:** Twenty-one (21) patients were selected in this study who did not suffer from any supporting tissue disease (such as bleeding or gingivitis). Patients needed crowns for molars. Three impressions were taken from each patient, and the total number of impressions was 63. After the preparation, the first impression was made using the traditional method (putty - rinsing) without gingival retraction. The second impression was made by the observational method. All final impressions were filled with Acryl, completely or only for the prepared tooth area. Then the rules were filled with plaster. The Cochran and Mc A comparison between two methods for gingival retraction (traditional and observational) on the marginal accuracy of the final models. Neman tests were used to investigate the differences between the means of both groups.

**Results and conclusions:** The results showed that there are statistical differences between the first and second groups. The traditional method was found to be superior to the other. While the observation method is good, the traditional method is much better.

**Key Words:** gingival retraction, marginal accuracy, impression.

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**INTRDUCTION:**

Impression is an imprint or negative similarity of the hard tissues of the teeth and the soft tissues surrounding the structures<sup>1-2</sup>. It is used to perform prosthetic or prosthetic works in the laboratory. Before taking an impression and determining a carefully prepared tooth, carefully observe the gum tissue around the teeth<sup>3-4</sup>. The most important point to note is gums dislocation. Gum relocation is a key task in getting in shape right from the finish line<sup>5-6</sup>. It is feasible either by surgery or mechanically. A suitable mold for a cast filling should have the following characteristics: It should be an exact duplicate of the prepared tooth, including all preparation and sufficient unprocessed tooth surface outside of preparation for the dentist and technician to be confident of the finish line location and configuration. The remaining teeth and tissues adjacent to the prepared tooth must be accurately recreated to allow for proper articulation of the cast and contouring of the restoration<sup>7-8</sup>. It must be free of bubbles, especially around the finish line and the chewing surfaces of the remaining teeth in the arch.

**MATERIALS AND METHODS:**

- 21 patients with the following characteristics were selected:
  - They all needed preparations for their first or second Molar teeth in the maxilla or mandible
  - They did not have any systemic disease
  - Age 25-50 years
  - There was no decay and sub gingival restoration in their molars
  - No gingivitis and PDL inflammation
  - Polyvinyl material of siloxane (Zhermack 45021 BDIA Pole sine [Rovigo]Italy)
  - Tow cable (GINGI-PAK Z-TWIST 00 USA Bellport)
  - Cold resin self-cleaning agent (vertex-dental bvJ.v.oldenbarnevelth 62 3705HJZeist The Netherland)
  - Plastic trays

- Softening and bur in the shape of pearls (Hager & amp; Meisinger GmbH P.O.B.210 355 D-41 429 NEUSS)

**Criteria of patient selection**

Good oral hygiene (according to Selence Value). All patients should need one crown.

**The Study Method**

21 patients in need of a unique crown were selected. A preliminary impression was taken from them, after the beveling the teeth began. The amount of preparation was as follows: buccal side 1.2 mm, other lateral layers 0.7 mm, 1.5 mm functional nodule and 1 mm non-functional nodule. In order for the measurements to be the same in all impressions, four grooves (0.5 mm each) were made in the four sides (sides) of each tooth. Two impressions were taken from two different methods from each patient. The first method, patient control, was without the retraction cord or any mechanical means. The second method, named "Traditional method" was by using the retraction cord with adrenalin, a common and accepted way. The impressions were done continuously and with an interval of 15 minutes. The chronological range was started because the gingiva has returned to its original site. However, according to research by Laufer BZ et al., After using the retraction cord, the gum will return to its original position in less than 30 seconds Then three prints and additional polyvinyl Syroxine of the same size were created. Prints were created in two stages (Putty-Wash) and without space.

**RESULTS:**

All prints were analyzed in four levels and by cochran method (Mesial, Distal, Buccal and Lingual). For the correct variables, 1 and 0 of those that did not occur are selected. Depth or width is classified in inefficient conditions of less than 100 microns: - The MCNemar method has been used to distinguish the difference between the two methods. This statistical method compared both methods.

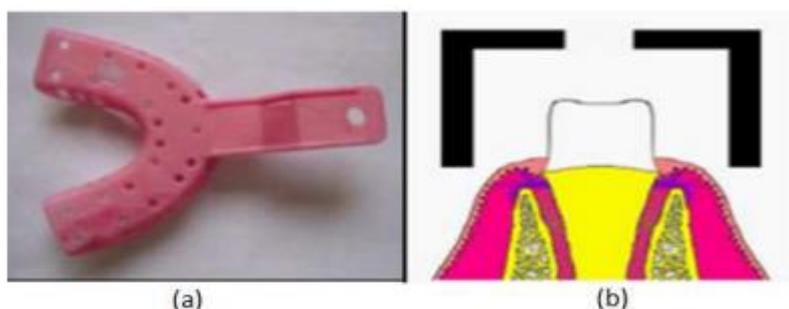


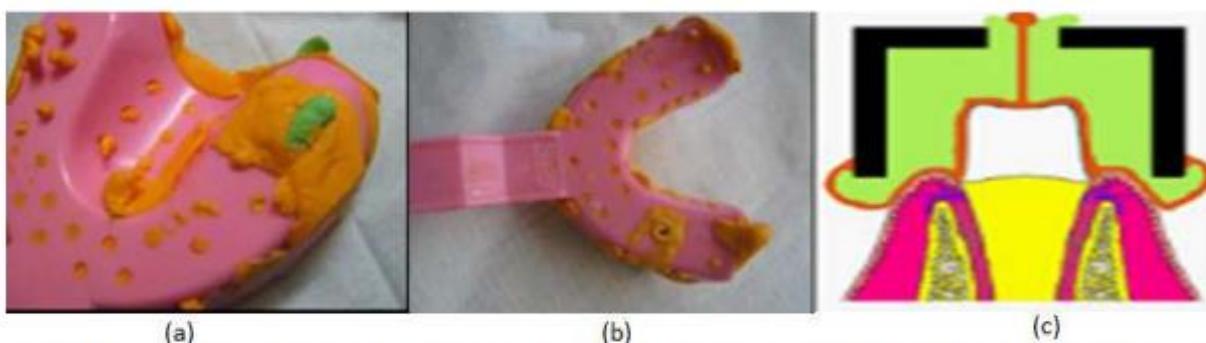
Fig. 1: A hole was produced on the Tray (two-third the whole surface of the prepared tooth)

- Chart number 1, 4 and 8 points shows the success rate of two methods.



**Fig.2:** The extra amount of putty was then placed on the hole, and pressed it with a finger so that with a little bit of mechanical pressure, the gingival was displaced

- Chart number 3 shows the difference between the P value system and the two methods.



**Fig.3:** A hole with a diameter of 2 millimeters in the Putty material on the prepared tooth was produced in order for the wash to be easily expelled.

### Method discussion

The chemical-mechanical method is often used in clinics e.g. (With the use of a retraction line immersed in HCL adrenaline or e.g.). This method is safer and more active than operational. However, the use of a retraction line has its drawbacks, such as: A; it more absorbs B; more effort is needed on the part of the dentist and patient C; sometimes bleeding and pain may occur, especially when an anesthetic is not used, d. improper use may cause gum damage and recession after some time. Because traditional methods were time consuming and / or led to gum injuries, we decided to think of a new method to eliminate these two disadvantages. In both methods, the depth and width of the gingival sulcus were measured on a micron scale. Since this method has never been evaluated, we need to explain the different ways of gingival dislocation and different studies on the effects of different methods on lateral displacement of the gingiva, and describe the gingival dislocation and its advantages over time to take impressions and possibly the effect of the type of material used to make the impression per degree of gum dislocation, e.g. Because the human eye has a distinctive force of 0.1 millimeters or 100 microns, the limit for gum displacement is 100 microns, both at depth and width of the mold. Less than 100 microns is considered unsuccessful and indicates unacceptability for laboratory work. Thanks to this function, two impressions were compared with each other: Observation method (patient control),

in which the impressions are created without retracting cords or any other auxiliary device. Finally, the conventional method, in which the displacement of the gums is achieved using a retraction cord dipped in adrenaline.

### DISCUSSION:

After observing the last percentages of the study, the following conclusion was reached: The best way to avoid gum fatigue when printing is to use a cable dipped in adrenaline<sup>9-10</sup>. Certainly, this method of observation (patient control) has not been considered effective and we cannot use it to move the gums in the printing process – education<sup>11-12</sup>. Additionally, the finish line does not appear in this method.

On the basis of statistical evaluations, mesial, distal, buccal and linguistic levels were obtained from comparisons in both directions; Statistical differences (depth and width) are achieved below<sup>13-15</sup>.

### CONCLUSION:

After comparing the observation method (patient control) and the traditional method, it turned out that the common traditional method was clearer than the observation method (patient control). Observing the results of the two methods 'new' and 'traditional', no significant statistical difference was observed. After observing all statistical and clinical methods, it was found that the traditional method has the best results.

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