

LAMINATE HANDLING TOOL - A NOVEL DEVICE.**David Charles P^{*}, Vidyashree Nandini. V⁺⁺, Cholan Ramanujam^{*}, M. Dilip Kumar^{**}, Russia****Marimuthu^{*}, Shafath Ahmed⁺**

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Abstract:

The routinely fabricated porcelain laminate veneers measure about 0.5mm-0.8 mm in thickness replacing the reduced enamel. These porcelain laminate veneers are very difficult to handle due to their minimal thickness and slight careless handling can result in chipping of the margins and at times even fracture. In this article a porcelain laminate suction holder is designed and used for handling the porcelain laminate veneers during the cementation procedure which can also provide uniform pressure during luting.

Key words: porcelain laminate, silicone, suction cups.**Introduction:**

Porcelain laminate veneers were first introduced by Charles Pincus in 1938^[1] to provide temporary aesthetic improvement to patients in the film industry, but the development of enamel etching and porcelain surface treatment in the early 1980s allowed this to become a more widely used procedure for aesthetic correction.^[2-4] Porcelain laminate veneers are used in the correction and alteration of tooth position, shape, size and color. They require a very minimal amount of tooth preparation measuring in

thickness of about 0.5mm-0.8 mm; therefore they are more conservative restoration than a crown, which requires significant removal of sound tooth structure.

Following tooth preparation the porcelain laminates veneers are fabricated in the dental laboratory based on the requirements and sent back to the dentist for final cementation. Due to their minimal thickness, it is usually very demanding, on the part of the dentist to handle such veneers. Handling porcelain laminate veneers requires at most care, so that it does not slip down or there should not be of much pressure while holding it between the fingers resulting in fractured margins.

The suction holder described here is designed and used for holding and easy handling of porcelain laminate veneers during the cementation procedures. The suction holder is made of stainless steel with 10 cm length and 10mm diameter. It consists of a 2mm diameter needle connected to the nozzle of the metal holder containing a vacuum chamber. Two silicone suction cups, one with 5mm diameter and another with 3mm diameter were made to be connected with the tip of the needle (fig – 1,2,3).



Fig.2_porcelain laminate suction holder

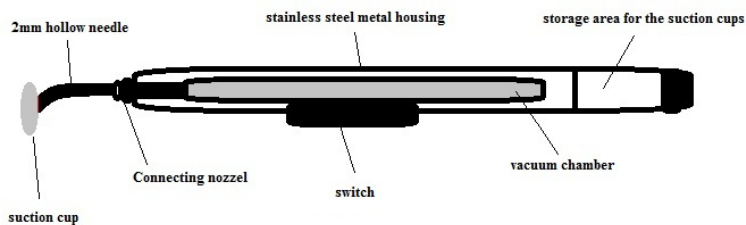


FIG.1 LINE DIAGRAM



Fig.3_components of porcelain laminate

Suction Holder

Procedure:

1. Select the correct size of suction cup required for holding the porcelain laminates veneers.
2. Connect the suction cup to the tip of the hollow 2mm needle and attach the needle to the connecting nozzle of the stainless steel housing..



Fig.4 positioning of porcelain laminate suction holder

3. Position the suction cup in the center of the porcelain laminate veneers and press the switch so that the air is sucked by the vacuum chamber and suction is created in the suction cups (fig-4).



Fig.5 porcelain laminate being held using the suction holder

4. Now remove the porcelain laminate veneers from the cast (fig-5) and load it with resin cement and position it over the prepared tooth and release the suction by pressing the switch again.
5. After usage, remove the suction cups and dispose them. Sterilize the metallic components of the instrument and place them in the storage area and close the plug (fig-6).



fig.6 storage compartment

The instrument is very simple and works with the basic suction mechanism. The suction cups and the vacuum chambers were made of biocompatible silicone material and the stainless steel metal housing

can be easily detached and sterilized. The suction cups are designed to hold up to 10 grams in order to perform efficiently. The storage compartment in the instrument is designed to store the suction cups.

In comparison with the existing optrastick adhesive stick, this instrument can provide uniform pressure on the surface of the laminate during luting, which helps in uniform escape of the excess cement. The wide diameter of the suction tip provides a uniform and complete adhesion of the laminate. Additionally, the suction tips are disposed off for infection control.

Conclusion:

The instrument mentioned above has been tried clinically and have proved to a useful aid in handling porcelain laminate veneers and also for handling full veneer anterior crowns during cementation procedures, which is not possible with existing laminate holders. The soft silicone surface of the suction cup aids in better suction over the polished surface of the porcelain laminate and also prevents scratches during handling.

References

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