Minimally Invasive Veneers

Introduction

Laminate Veneer is simply defined as a thin labial plate of cosmetic material retained by cement through etching and bonding. It is considered a conservative alternative to full coverage restorations, in order to increase esthetics and preserve as much intact tooth structure as possible. It is of high importance to mention that the tooth should have at least 60% of sound etchable enamel to allow proper bonding to tooth structure.

Types of laminate veneers:

We have direct veneers and indirect veneers. Direct veneers are those added directly to prepared facial surface of the teeth using resin composite materials. Being done in a single visit, lower cost as compared to indirect ones and them being repairable are the main advantages for direct veneers, however, they have drawbacks like being time consuming, the need for a skilful dentist, low wear resistance and low color stability.

The other type, which is Indirect veneers, are laboratory fabrication ones. They maybe Acrylic, resin Composite or Ceramics.

For the ceramic indirect laminate veneers, there are different types according to their composition ex. Feldspathic Porcelain, Lucite-Based glass ceramic, Lithium Disilicate glass ceramic, Zr-reinforced Lithium Silicate (ZLS) and Dicor ceramic. The use of indirect ceramic types provides us with excellent esthetics, high color stability, soft tissue biocompatibility, inherent porcelain strength and long-term durability, while the difficulty in color matching, high cost and lack of reparability are still the main drawbacks for those types.
Construction Techniques:

<table>
<thead>
<tr>
<th>Type</th>
<th>Processing Method</th>
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<tbody>
<tr>
<td>Feldspathic Porcelain</td>
<td>Layering (Firing) &amp; Milling</td>
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<tr>
<td>Lucite-Based glass ceramic</td>
<td>Heat Pressing (IPS Empress I) &amp; Milling</td>
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<tr>
<td>Lithium Disilicate glass ceramic</td>
<td>Heat Pressing (IPS Empress II) &amp; Milling</td>
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<tr>
<td>Zr-reinforced Lithium Silicate (ZLS)</td>
<td>Milling</td>
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<tr>
<td>Dicor ceramic</td>
<td>Castable ceramics</td>
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Preparation for the veneer:

First of all, the preparation should be maintained within enamel whenever possible. Proper finishing of the preparation allowing it to be smooth, free from any sharp internal line angles, will subsequently decrease the probability for stress concentration and failure. It is important to provide enough thickness for porcelain for sufficient fracture resistance and at the same time, not to over contour the final restoration.

Different Design for Laminate Veneers Preparation:
Type I (Without Incisal Overlap-Feather Edge)
Type II (with Overlay incisal edge-Butt Joint)
Type III (with Incisal Overlap)

Clinical Notes:

- With the introduction of new materials on top of a pioneer as feldspathic porcelain, the preparation design is influenced in terms of technician’s ability to create very thin restorations. Other types of porcelain (ex. Pressable ceramics) require a minimum of 0.75mm – 1.5mm reduction as opposed to the 0.5mm required for the initial feldspathic veneers.

- Centric-relation mounted study models are a must for recreating a proper envelope of function. For example, if a tooth is lengthened, regardless of whether minimal preparations were used, the length may interfere with the envelope of function. Other factors be taken in consideration during planning are: incisal edge position, amount of remaining tooth structure (especially enamel), proper isolation conditions, whether the underlying color will be masked or not, lip fullness and prospective changes and midline position.

- When taking an impression, it is important to discard the surrounding gingiva. The double-cord technique is a suitable one; where you use a No. 00 and a No. 01 braided retraction cord, one on top of the other. Using this technique, with the removal of the top cord, sufficient space is opened up for the flow of the light body impression paste into the intracrevicular space around the tooth; thus allowing for a more accurate preparation without prospective over-contouring.

- Coming to the try-in and cementation, it is a common mistake to expect a passive fit during cementation because of the passive fit at try-in. A more practice procedure would be placing 2 teeth at a time, starting with the maxillary central incisors; this way in case there is a need for minor adjustments on the proximal edges post-cementation, it will be easier to manage.

Case Report

Copyrights go to Prof. dr. Ahmed Soliman Idris (Head of Egyptian Society Of Esthetics and Implant Dentistry, Lecturer at Cairo University and British University in Egypt)

References

1. The Science and Art of Porcelain Laminate Veneers By Gülşen Galip.