



## Porcelain Laminate Veneer, Case Report

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### Introduction

Re-establishing a patient's lost natural dental esthetics is among the important topics of today's dentistry, in addition to function. Color, shape, and structural and position abnormalities of anterior teeth might lead to important esthetic problems for patients. Any restoration should be fabricated using mechanical, biological and aesthetic principles. PLVs have become the esthetic alternative to ceramic crowns and the traditional porcelain-fused-to-metal.

### Case Report

A 40-year old male patient reported to our clinic with a chief complaint of discoloured, spacing of anterior teeth and wanted cosmetic rehabilitation for the same. A thorough case history of the patient was taken followed by diagnostic impression, mounting with face bow transfer and radiographs including OPG. After examination, The treatment objectives were to manage the discoloration and modify the contours of the teeth in most conservative method possible. Porcelain laminate veneers were planned on the six maxillary anterior teeth. Patient was informed about the existing condition, treatment procedure was explained and the consent was taken. A well adapted, horizontally sectioned silicon matrix was made from the diagnostic cast which was later used as a reference for teeth reduction. A

key element in success with PLV is carefully controlled but appropriate tooth preparation.



Pre-Operative Frontal View

The aims of tooth preparation are to:

Provide some space into which the technician can build porcelain without over-contouring the tooth.

Provide a finished preparation that is smooth and has no sharp internal line- angles thus avoiding areas of high stress concentration in the restoration.

Maintain preparation within enamel whenever possible.

Define a finish line to which the technician can work.

### Facial Reduction

- The preparation depth of the order of 0.4mm close to the gingival margin, rising to 0.7mm for the bulk was achieved by using depth cutting burs.
- To mimic the natural curvature of the tooth and to provide even thickness of porcelain two plane facial reduction was done.

- The appropriate tooth reduction was verified with the use of silicone matrix.

**Proximal Reduction:** Proximal reduction was kept just short of breaking the contact.

**Incisal Edge Reduction:** Incisal reduction of 1mm was done with incisal overlap to improve translucency and to provide positive seat for luting.

**Cervical Finish Lines:** Equigingival Chamfer finish line of 0.4mm maximum depth were made. All the internal line angles were rounded to reduce stresses in the margins of the veneers.

#### Recording an impression

Retraction cord (No.000) was placed in the facial gingival sulcus for 5 minutes. (Fig 2) Full arch impression was made using poly vinyl siloxane material using putty reline technique. An impression of the opposing arch was made using irreversible hydrocolloid material.

#### Laboratory Procedure

The refractory material was poured into the impression and was allowed to set for 30 minutes. After removing the refractory cast, it was kept in furnace for hardening at 600<sup>0</sup>C for 10 minutes. Once the hardened cast was cooled, the prepared teeth on the cast were sealed with 30 ml glaze liquid. Again refractory die was hardened for 5 minutes at 600<sup>0</sup>C. Feldspathic porcelain (Vitadur Alpha all-ceramic was layered and fired over the refractory die.

#### Try-in Procedure

The teeth were cleaned prior to the trial. The quality of fit, gingival extension and color match of the veneer was assessed.



Post-Operative Frontal View

#### Cementation

The intaglio surface of the veneers were etched using 30% Hydrofluoric gel, rinsed and coated with a silane coupling agent. The prepared tooth were well isolated and etched with 37% orthophosphoric acid (Universal Etch), rinsed and Prime & Bond NT dentin bonding agent was applied following manufacturer's instructions. (Fig 4) Calibra (Dentsply) resin luting cement was used for the cementation of the porcelain laminate veneers. Once all gross excess was removed, the luting resin was cured using visible light activation unit for 40 seconds each. PLVs were finished using rotating abrasive disks (Soflex discs).

#### Home care instruction

The patient was given oral hygiene and home care instructions for the adequate care of the porcelain laminate veneers and asked to follow a strict follow up protocol 1 week, 3 months, and 6 months for the assessment of the treatment procedures and oral hygiene measures.



#### References

1. Gurel G. Predictable and precise tooth preparation techniques for porcelain laminate veneers in complex cases. *Oral Health Journal* 2007; 9:30-40.
2. Peumans M, Van Meerbeek B, Lambrechts P, Vanherle G. Porcelain veneers: a review of the literature. *J Dent* 2000;28:163-77.
3. Gurel G. The science and art of porcelain laminate veneers. Quintessence Publication 2003.
4. Garbaer D. Traditional tooth preparation of porcelain laminate veneers. *Comp Cont Ed*

Dent 1991;12:316-322.

5. Belser URS, Magne P, Magne M. Ceramic laminate veneers: continuous evolution of indications. J Esthet Dent 1997;9:197-207.
6. Cunha LF, Pedroche LO, Gonzaga CC, Furuse AY. Esthetic, occlusal, and periodontal rehabilitation of anterior teeth with minimum thickness porcelain laminate veneers. J Prosthet Dent 2014;112:1315-1318.
7. Magne P, Belser URS. Novel porcelain laminate preparation approach driven by diagnostic mock-up. J EsthetRestor Dent 2004;16:7-18.
8. Reshad M, Cascione D, Magne P. Diagnostic mock-ups as an objective tool for predictable outcomes with porcelain laminate veneers in esthetically demanding patients: a clinical report. J Prosthet Dent 2008;99:333-339.