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## Anterior aesthetic rehabilitation by veneers: A case report

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### Abstract

From the aesthetic point of view, appearance of one's smile and teeth has greater impact on overall look and confidence. Among the various treatment options, ceramic veneers are considered as most conservative and long-lasting restoration, provided the correct technique is followed. In this case report a thorough procedure is explained for the rehabilitation of upper and lower teeth in the young patient.

**Keywords:** Aesthetic, indirect veneers, cosmetic, ceramic

### Introduction

The art and science of dentistry used to produce or enhance a person's appearance within the parameters of their function and physiology is known as aesthetic (cosmetic) dentistry. Thin porcelain shields called ceramic veneers only cover the front of the teeth. They offer a long-lasting way to alter or enhance the appearance of teeth that are damaged, chipped, broken, or unattractive. For the correction of tooth fracture, malformation, and tooth misalignment, ceramic veneers are a well-established, conservative treatment option [1]. Various clinical studies have shown successful treatments and reviews have validated the clinically acceptable longevity of veneers [2-4].

Tooth preparation is one of the most important factor in this technique. When bonding porcelain to tooth structure, enamel offers the best or strongest bond rather than dentin [5-7]. A main objective of any restorative case involving such restorations is to maintain the preparation simple and be cautious when removing healthy tooth structure.

### Case report

A 27 year old female patient reported to the Department of Prosthodontics with chief complaint of spacing in the upper and lower front teeth (figure 1, 2). On clinical examination generalized spacing in upper and lower anterior region and porcelain fused to metal crowns on 36,46 were noted. Various treatment options available, were discussed with the patient. Use of ceramic veneers was recommended, based on the patient's need and current condition. However, since ceramic veneers are an aesthetic procedure, there was a detailed discussion with the patient on the benefits, risks and procedure involved.

**Treatment planned:** Emax indirect veneers for upper and lower anteriors.

Diagnostic impressions were made and face bow record was taken and transferred to the articulator (figure 3). The maxillary and mandibular cast were mounted on articulator (figure 4). The diagnostic wax-up was made (figure 5) and the test drive was performed using silicone index and shown to patient before initiation of tooth preparation (figure 6). The aesthetics and occlusion was properly evaluated. Patients' speech and phonetics was assessed. After thorough evaluation and patients approval, shade selection was done and preparation was initiated.

The incisal wraparound type of tooth preparation was performed on 11,12,13,21,22,23 and 31,32,33,41,42,43 (figure 7,8). The incisal wraparound preparation was done for many reasons as it can be used in majority of patients, simple to fabricate for the technician and easily handled by the dentist because of its positive seating on delivery.

The best support for restoration and distribution of occlusal forces over a larger surface area is provided by incisal wraparound preparation. In addition, it should be noted that it is possible to achieve better incisal translucency with reduction of the incisal edge. Approximately 0.3mm labial reduction was performed with depth cutting bur. Chamfer was used as a finish line and all the line angles were made rounded.

A 2-0 retraction cord was used for gingival retraction. A two-step impression was made using polyvinyl siloxane impression material using putty and light body (figure 9). The temporization was done using bisacrylate temporary material (Accutemp) (figure 10). The impression was poured using die stone.

The bisque trial was performed to evaluate the marginal fit and accuracy and patients approval was taken (figure 11). The veneers were glazed and evaluated for the aesthetics (figure 12). After patients approval the cementation protocol was followed.

**Preparation of veneers for bonding: The steps followed in order to prepare the restoration for final bonding are as below**

- Cleaned the restoration properly with acetone or Cavilax.
- Etched the veneers with 10% Hydro Fluoric acid for 10 seconds & rinse with water and air dried. (figure 13,14).
- Applied a layer of Silane Coupling Agent for 60 seconds and dried with a stream of air (note: do not rinse) (figure 15).
- Left the veneers in lightproof box till ready for bonding.

**Preparation of teeth for bonding**

- Teeth surface was cleaned and etching was performed using 37% Phosphoric acid for 15 seconds and air dried (figure 16).
- Application of bonding agent was done and light cured for 10 seconds (figure 17).
- Dual cure resin luting agent was used for cementation. The veneer was then placed over the prepared surface while applying gradual, gentle pressure to let the extra material drain away and prevent the creation of air bubbles and veneer lifting. The initial spot curing of the veneers were done for 5 seconds. After removing extra cement using an explorer, complete curing was performed for 20 seconds. Thus following the same protocol final cementation of all the veneers was done (figure 18,19). The patient was well satisfied with the final outcome (figure 20).

**The steps that were followed after bonding the veneers on teeth were**

- Removing excess bonding materials with sharp carver.
- Using a floss between each veneer preparation to remove excess cement.

**Finishing done with carbides, discs and rubber points**

After luting proper occlusion was checked. Patient asked to follow a strict follow up protocol of 1 week, 3 months, and 6 months in order to evaluate the treatment procedure and oral hygiene measures.

**Discussion**

Patient selection is crucial aspect for success of veneers. In the present case ceramic veneers was chosen as a conservative method of treatment because of young age of the patient.

Veneers were the recommended treatment option due to the presence of a normal overjet and overbite with a good smile line, the lack of parafunctional habits, and the presence of enough enamel.

The benefits of choosing these restorations include their greater chemical stability, lower cytotoxicity, and decreased danger of causing irritation or sensitivity, which makes them biologically acceptable to the body. Because to their smoothly glazed surface, these restorations demonstrate decreased plaque build-up and make it easy for removal [8-10].

Due to their ceramic thickness (0.3-0.5mm), even before bonding, the veneers can be easily fractured. However, once they are bound to the etched enamel surface, they blend in with the tooth structure and become more strong and durable [8, 9]. A long-lasting restoration is obtained by combination of etched enamel and porcelain, used with the bonding resin luting agent with a silane coupling agent [11, 12].

Veneers should be avoided in cases where the enamel is weak, the tooth is pulpless, parafunctional habits are present, the anatomical positioning of the teeth is inappropriate, and oral hygiene is poor. The risk factors for veneer failure includes bonding onto pre-existing composite restorations, placement by an inexperienced practitioner, and use of veneers to repair worn-down or shattered teeth with significant dentin exposure and remaining tooth structure.



(a)



(b)



(c)

**Fig 1:** Pre-treatment intraoral view (a) frontal view (b) left lateral (c) right lateral

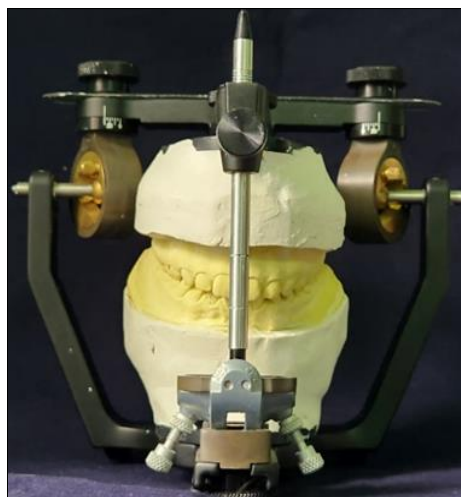




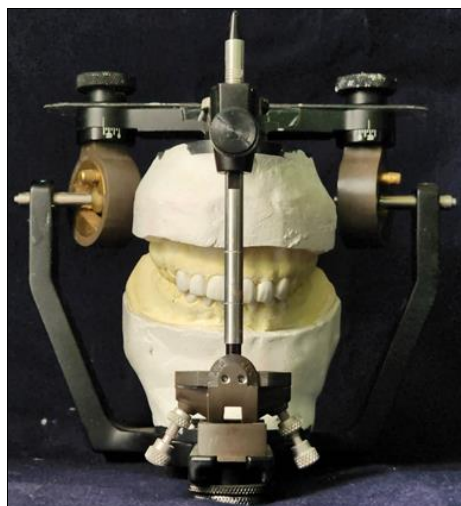
**Fig 2:** Pre-treatment intraoral view (a) upper occlusal (b) lower occlusal



**Fig 3:** Facebow record



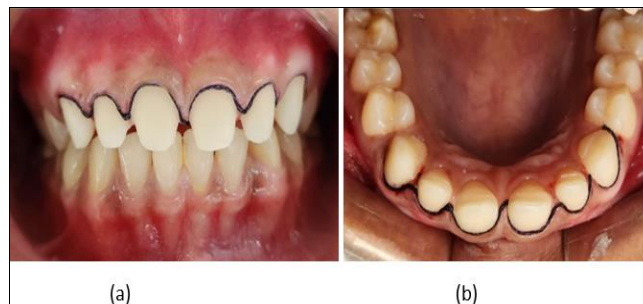
**Fig 4:** Semi-adjustable articulator with upper and lower cast mounted



**Fig 5:** Diagnostic wax up



**Fig 6:** Test drive of wax up



**Fig 7:** Prepared upper teeth with cord placed (a) front view (b) occlusal view



**Fig 8:** Prepared lower teeth with cord placed (a) front view (b) occlusal view

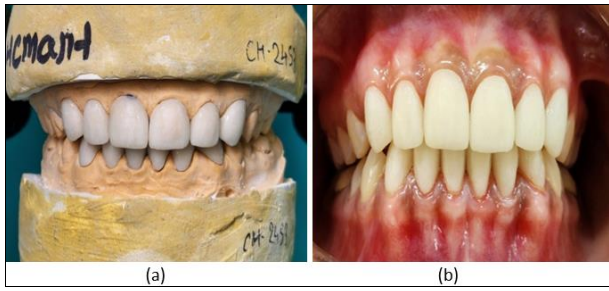


**Fig 9:** Impression with putty and light body (a) upper (b) lower



**Fig 10:** Temporization using bisacrylate

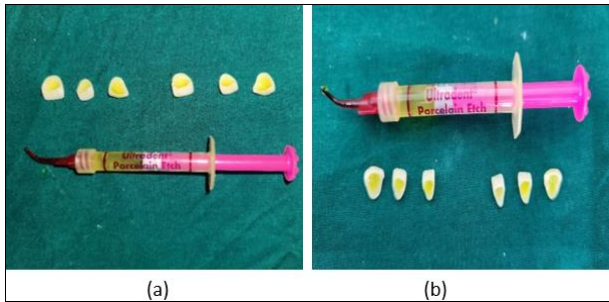




**Fig 11:** a) Bisque trial on cast, b) Bisque trial intra-oral front view



**Fig 12:** Glazed veneers



**Fig 13:** Etching using 10% HF (a) upper veneers (b) lower veneers



**Fig 14:** Rinsed and air dried after etching



**Fig 15:** Silane application (a) upper veneers (b) lower veneers



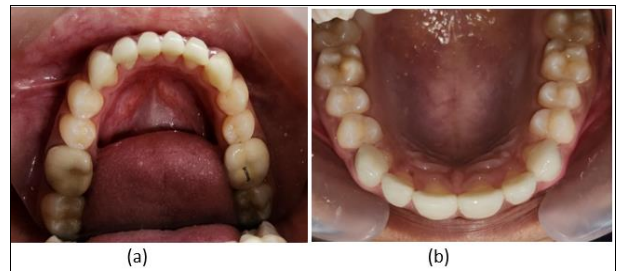
**Fig 16:** Etching of tooth surfaces using 37% phosphoric acid (a) upper (b) lower



**Fig 17:** Bonding agent application (a) upper (b) lower



**Fig 18:** Final cementation of upper and lower veneers



**Fig 19:** Occlusal view after final cementation (a) upper (b) lower



**Fig 20:** Post treatment

### Conclusion

There shouldn't be a "one size fits all" approach to veneers, as there shouldn't be for other dental procedures. During treatment planning, clinicians must take all aesthetic alternatives into account. For a successful outcome, a complete clinical examination including aesthetic assessment is crucial.

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**Conflict of Interest:** None.

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