

A Different approach to Smile Design with Porcelain Laminate Veneers



Fig. 1

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When designing a smile there are certain principles we use. We learn these principles and try to adapt them to our daily routine. On the other hand patients are becoming more specific about how they would like their anterior teeth to be restored. They have a certain design on their mind and they want certain characteristics customly added to their smile design. Not only they are requesting an esthetic solution to their dental problems, but also seeking procedures that require minimally touching of remaining tooth structures. Porcelain Laminate Veneers are one of the most conservative and aesthetic techniques that we can apply. The life span of the veneers are long and durable especially if the right indications are chosen and the

45 degrees angle view

This angle gives us the opportunity to check the buccal-lingual position of the teeth and crowding. It also gives us an idea of the lip support of the teeth (Fig. 3).

The view according to the lip

This view can determine the buccal-lingual position of the teeth in a different angle (Fig. 4). After analyzing the smile we go on with the teeth preparation. Because we are using an additive approach we do a 0.3mm chamfer finish line on the gingival margin and make a slight roughening on the tooth surface. All of our preparation is on the enamel surface (Fig. 5) and then a retraction cord is placed to identify the preparation margins (Fig. 6) and an impression is made using an additional silicone. While the

the new smile design in the mouth and will be able to determine what the patient likes and dislikes. At this stage changes are made on the wax veneer prototypes. When the patient is satisfied with the new smile design a suitable tooth shade is chosen and we go on to the next step.

The Lab Procedures

The advantage of this technique is that what you see is what you get. Meaning what you see in the wax prototypes is what you get in the final. By using a lost wax technique and a pressable ceramic the technician builds up his veneers using external staining or layering techniques. (Fig. 12) (Fig. 13)

Try In

When the veneers are fabricated they

should be first tried out in the mouth. The veneers should be tried out one by one in order to check the margin fit accurately, and then together, to see their overall integration with each other, with the lips and finally, the face.

Bonding

I prefer a sectional rubber dam placed in the mouth because it is much easier for the patient and the dentist to isolate the teeth. Once the teeth and the inside of the veneers are surface treated they can now be bonded. Preferably, the bonding should start with the centrals, proceeding with the lateral, canine on one side and the other lateral, canine on the other side. The soft tissues should be handled very gently. The easier way to do that is to place the veneer on the tooth and once it is completely seated, spot tack it from the middle with a 2mm tip. This will hold the veneer intact in place and then switch the tip of the light source to a larger diameter. Light cure the excess flesh around the gingiva for only 1 or 2 seconds. This will not fully polymerize the luting resin but bring it to a jelly consistency. That will be very easily cleaned with an explorer or a number 12 blade for the narrow areas. Then, go in between the veneers with a dental floss to cleanse the interproximal contacts. Then a full polymerization is done after applying a gel on

the margins for the oxygen inhibition layer of the composite cement. Then the margins should be polished with a rubber cup, but never with a diamond bur which will totally ruin the glaze and the polish of the porcelain on the margins. The final results of the cemented veneers are seen from different angles (Fig. 14a, b, c)

The techniques explained above which will help the patient and lab communication to get more reliable and solid. It will be helpful to get the best aesthetic results with minimal tooth reduction. ^{DT}



Fig. 2



Fig. 3



Fig. 5



Fig. 6



Fig. 4



Fig. 7



Fig. 8



Fig. 9



Fig. 10

correct techniques are applied. The main idea is the conservation of the sound tooth structure. We should limit our preparations on enamel. When we limit our preparations on enamel the tooth will not flex and it will stay as rigid as a tooth can be. Even if our preparation line passes through the dentin enamel junction margin and enters into dentin, it won't create a major problem for minor invasions. However, if we end up finishing our preparation on large amounts of dentin this will create complex bonding issues on dentin and will also free the flexing factor on the tooth structure. When we have the tooth which is aggressively prepared that wants to flex when the tooth receives some different occlusal forces and keeps on flexing the luting resin at the margin will start coming off slowly and these situations will result in micro leakage or de-lamination.

Analyzing the Smile

To understand the final smile design the existing smile should be analyzed carefully from a 3 dimensional aspect. We should follow a photo and video protocol (Fig. 1). In order to have a solid understanding about the visualization of the final outcome, the existing smile should be analyzed carefully from a 3 dimensional aspect.

Facial view

When we analyze the smile from a facial view we see the mesio-distal and vertical problems. We can see the midline, the occlusal plane and the length and the axes of the incisal teeth and can determine the future smile curve and the length of the future incisors (Fig. 2).

retraction cord is slowly pulled out a flowable silicone is applied and an impression tray filled with putty is applied at the same time to ensure a clear impression (Fig. 7)

Designing the Veneers with wax

2 sets of models are formed. One where we cut the dies (Fig. 8) and one where we leave the gingiva (Fig. 9). An isolating medium is applied to the model and the wax prototypes are made. To create a pleasing restoration, harmony in the size, shape and arrangement of the teeth are required in order to enhance each patient's facial features. The important issue about the wax up is that these wax teeth can be removed one by one and they mimic the final veneers (Fig. 10)

Trying The Wax Veneer Prototypes on the Patient

In this stage we try the wax veneer prototypes on the patient. Before showing the patient we check and correct the smile design. We check the midline, tooth axes and the relationship of the teeth according to the lip. When we are satisfied with the wax prototype design (Fig. 11) we show the patient. The dentist should be able to understand all the signals coming from the patient verbally or non verbally. By all these signals the dentist makes custom changes on the wax prototype. The lip support of these restorations and the aesthetic length can be easily evaluated which should be approved by the patient. Also, we want to evaluate the functional movements of the patient to see whether it would create an anterior construction or not. The patient can easily look at



Fig. 11



Fig. 14a



Fig. 14b



Fig. 14c

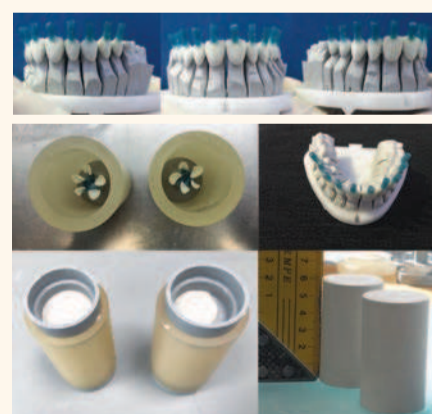


Fig. 12 a, b



Fig. 13

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