

Smile Changers

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Abstract

The field of Prosthodontics has advanced so much that many treatment modalities have been developed to cure almost every type of dental defects. Lumineer procedure is one of the wide ranges of treatments. Whether it is the matter of broken, chipped or stained tooth, Lumineers is just perfect for treating them.

A beautiful smile is the best thing one can get and Lumineers procedure is there to restore that smile back in your life.

Keywords : porcelain veneers, no prep veneers, cerinate porcelain, bonding.

Introduction

Advances in the technology of bonding porcelain to enamel created the possibility of porcelain laminate veneers as an alternative to the use of full crowns for the treatment of many clinical conditions, such as treatment of diastemas, malaligned teeth. Laminate veneers are considered to be a more conservative treatment approach than full crowns because preparation of tooth for laminate veneer was thought to involve less tooth structure as compared to a full crown preparation. Although this may be technically true, in actuality the trend in conventional laminate veneer procedure is tooth reduction similar to that of three quarter crown preparations. The conventional approach requires local anaesthesia, considerable treatment time and all of the rigors of tooth preparation for both the patient and the dentist. Also in many cases, temporaries need to be fabricated.

Fortunately a truly conservative approach to laminate veneers with many substantial advantages has been developed. This approach referred to as 'no prep' techniques.

The no preparation technique was made possible by advances in custom designed bonding systems in porcelain technology, that allow exceptionally thin veneers- "Lumineers".¹

Lumineers are laminate veneers made from special Cerinate porcelain i.e very strong but much thinner than traditionally fabricated laminate veneers.

Cerinate is a special patented feldspathic porcelain reinforced with Lucite crystals. Its high strength and low thermal expansion makes it possible to fabricate a laminate veneers as thin as possible that resist breakage and remain bonded to tooth surface. Their thickness is comparable to contact lenses and so they are also called as 'contact lenses' of the teeth.²

Requirements

Indications³

1. Slightly malaligned teeth

2. Spacing between anterior teeth
3. Slightly fracture or chipped teeth
4. Discoloured teeth
5. Slightly eroded teeth
6. Peg shaped lateral
7. Patient is not satisfied with his/ her aesthetic l

Contraindications⁴

1. Severely malaligned teeth
2. Severely decayed teeth
3. Internal dark stains
4. Poor oral hygiene, especially bleeding gums. Bleeding gums interfere with the bonding process and often cause discolouration under the porcelain at the gingival levels.

Advantages⁵

1. No need of anaesthesia
2. Minimal or no teeth preparation
3. Lumineers are as thin as contact lenses
4. Lumineers are about 0.2 -0.3 thick while porcelain laminate veneers are 0.5-1 mm thick
5. Compressive strength is more
6. Lumineers are versatile as they can be replaced

Disadvantages⁶

1. As Lumineers require no or minimal enamel removal, sometimes a gap exists between the Lumineer and existing teeth which leads to tooth decay and gingival inflammation.

Procedure

After deciding the correct treatment plan i.e making Lumineers for patient, the application of Lumineers requires two appointments.

In the first appointment, the dentist decides the shade of lumineers suitable for the patients. If any tooth modification is required, is done. An impression is made and sent to the laboratory.

In the second appointment the lumineers are bonded to the teeth.

Materials

To achieve the highest aesthetic value, proper fit, the shade matching, the entire lumineer system is required. The system includes ultra bond plus, try in paste, the cerinate shade modification system, Ultra-Bond[®] Plus & Tenure

Bonding Procedure⁷

1. Use 4 power magnifications 4 power magnifications is essential to obtain a good magnification system.
2. Preparation of lumineers
 - a. After the patient is seated, treat the lumineers with porcelain conditioner for 30 seconds rinse and dry well. (Fig. 2A)
 - b. Apply cerinate prime to the lumineers for 30 sec and blow thin. (Fig. 2B)
 - c. Place lumineers back into the case box in

their proper slots. (Fig. 2C)

3. Teeth surface preparation
 - a. Clean the teeth with slurry of porcelain polishing paste and water. (Fig. 3A)
 - b. Syringe paint or dental dam on lingual side of the interproximals covering the gums and teeth thoroughly (this aids in clean up) light cure. (Fig. 3B)
 - c. Etch teeth for 20 seconds with etch n seal, rinse and dry. (Fig. 3C)
 - d. Mix together equal amounts of Tenure A and B. (Fig. 3D)
 - e. Apply 5 coats of the A-B mixture of each tooth or until glossy thin, then air dry the tooth surface. (Fig. 3E)
4. Try in of Lumineers-
 - a. Syringe the ultra bond plus try in paste into each of Lumineers. (Fig. 4A)
 - b. Gently insert the lumineers one at a time and use brush to clean up the excess try in paste. (Fig. 4B)
 - c. Hold a mirror approximately 16 inches away from the patients face and let them examine their smile. (Fig. 4C)
 - d. Use a schure 349 instrument or cotton pliers and gently tease the lumineers off the tooth surface. Note: If the shade is not what the patient wants remove the try-in paste from the lumineers and tooth surface with a scrub or a clean, dry brush. Re apply new shade of try-in paste on the lumineers and check for the shade. (Fig. 4D)
 - e. Remove the try-in paste from the lumineers and tooth surface with Tenure S only. use Tenure S to clean up the excess once the final try-in paste has been selected. (Fig. 4E)
 - f. Gently thin the Tenure S with air, a thin film should be left on both the tooth surface and the porcelain surface. Note: there is no need to reapply porcelain conditioner or cerinate prime if you are cementing directly after the try in. (Fig. 4F)
5. Bonding Lumineers-
 - a. Select the appropriate shade of ultra bond. Note: if patient has dark stains, such as tetracycline stains, recommend the block out opaque system by ultra bond. If shade modification or basic opaque adjustment is necessary refer for instructions at this point. If not proceed to next step. After colour selection is achieved internal surfaces of lumineers do not need to be re treated. (Fig. 5A)
 - b. Apply ultra bond to the prepared lumineers and put it in place. (Fig. 5B)
 - c. After placing remove excess ultra bond with a soft brush coated with Tenure S or Dab eze sponges. (Fig. 5C)
 - d. Tack lumineers in place using a sapphire

supreme plasma arc curing light fitted with a ceri taper 2mm tip for 2 seconds. (Fig. 5D)

- e. Continue to remove excess cement with a soft brush coated with Tenure S. (Fig. 5E)
 - f. Completely light cure all lumineers, exposing each surface with a sapphire supreme PA light fitted a 9 mm tip. (Fig. 5F)
6. Finishing-
- a. Bonded Lumineers are finished using lumineers finishing kit.
 - b. Care of surrounding tissues should be taken.
 - c. Occlusion should be checked with articulating paper for any high points in centric as well as eccentric relation.

Instructions

Caring for Lumineers is simple and follows the same rules as maintaining natural teeth.⁸

1. Maintain good oral hygiene. Simply keeping good oral habits is the best way to care for your Lumineers and extend their lifetime expectancy. Brush your teeth regularly with toothpaste containing fluoride, and floss after meals to prevent food particle build-up that could damage your Lumineers. Periodontal health is also very important. Using a mouthwash like Listerine can kill any bacteria that reside on the gingiva.
2. Don not bite hard objects like fingernails and pins. The lifespan of Lumineers may decrease if exposed to hard objects on a continual basis. Try to avoid biting your fingernails or putting any objects in your mouth like pen caps, bobby pins and ice.
3. Keep consumption of dark drinks like tea and coffee to a minimum. Like natural teeth, Lumineers may stain when exposed to dark liquids. The bonding cement that holds the Lumineers to teeth is especially vulnerable to staining, so it is very important to keep food particles and staining liquids away from it.
4. Visit a dentist every six months for a cleaning and check-up.

Discussion

1. Lumineers is the latest innovation in porcelain laminate veneers. They differ from traditional porcelain laminate veneers because they can be as thin as 0.3 mm and as thick as required.
2. The advantages of Lumineers is that they can be fitted directly on to existing tooth structure without any anaesthesia, surgery or removing healthy tooth structure thereby greatly reducing chair time and dentists discomfort.

3. The disadvantage is that when anterior teeth are too far labially placed Lumineers cannot be bonded, otherwise the teeth will look too bulky. In patients having gum disease and tooth decay it is not advisable to bond lumineers. Lumineers do not protect a damaged tooth from further decay and bleeding gums can prevent the Lumineer from adhering properly to the teeth. In spite of limited disadvantages Lumineers are preferred over traditional porcelain veneers in western countries as they are suited for a HOLLYWOOD SMILE.
4. Overall, the no prep technique or lumineers provides a meaningful treatment alternative with many advantages and limited disadvantages.
5. The innovation of new dental materials has made it possible to create a new exceptionally high strength porcelain and bonding system. This made it possible for lumineers which can be bonded to teeth strongly without preparing the teeth and achieving a BEAUTIFUL SMILE.

Legends

Preparation of Lumineers

1. Fig. 2A : Application of Porcelain Conditioner to Lumineers
2. Fig. 2B : Application of Cerinate Prime to Lumineers
3. Fig. 2C : Lumineers back into case box

Surface Preparation

4. Fig. 3A : Cleaning the Teeth with Polishing Paste
5. Fig. 3B : Application of Paint - On on Lingual Surfaces of Teeth
6. Fig. 3C : Etching of Teeth with Etch 'N' Seal
7. Fig. 3D : Mixing Tenure@ A and B
8. Fig. 3E : Application of Tenure@ A and B mixture to Teeth

Try in of Lumineers

9. Fig. 4A : Syringing in Paste into Lumineers
10. Fig. 4B : Placing Lumineers on Teeth
11. Fig. 4C : Mirror 16 inches away from patients face
12. Fig. 4D : Removal of Lumineers from Tooth Surfaces
13. Fig. 4E : Removal of Try- In Paste from Lumineers

Bonding Lumineers

14. Fig. 5A : Selection of Shade of Ultra - Bond
15. Fig. 5B : Application of Ultra - Bond to Lumineers
16. Fig. 5C : Removal of Excess Ultra - Bond
17. Fig. 5D : Bonding Lumineers with Light Curing Machine
18. Fig. 5F : light Curing of All Lumineers

Finishing

19. Fig. 6A : Removal of Excess Ultra - Bond Resin Cement
20. Fig. 6B : Removal of Excess Cement from Margins
21. Fig. 6C : Smoothing of Porcelain Ledge
22. Fig. 6D : Polishing of Margins
23. Fig. 6E : Refining Interproximal Areas
24. Fig. 6H : Checking of Bite with Articulating Paper
25. Fig. 6O : Polishing of Lumineers using Polishing Cup

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