

Direct resin veneers: a conservative approach

Keri Do of Manoa Dental Care describes four case studies where direct resin veneers were utilised

Introduction

Modern dentistry provides us with many techniques and materials in our armamentarium to create that ultimate smile that all of our patients desire. Direct resin veneers are but one essential skill in cosmetic dentistry that has become an integral part in smile reconstruction. Conversely, when using indirect restorations, the aesthetic result rests mostly on the laboratory technician's skill. With direct resin veneers however, the dentist has full artistic control over the aesthetic outcome of the restorations resulting in a smile that can mimic or improve upon pre-existing conditions. Furthermore, by acquiring and exercising the skill of doing direct resin veneers, it lays a foundation for developing a better understanding of all the aspects of smile design principles that would otherwise be delegated to a laboratory technician (Morley and Eubank 2001). The option of direct resin veneers can also be treatment planned in circumstances where conservative treatments are not only indicated, but should be used as the



Figure 1a: Retracted pre-op



Figure 1b: Retracted post-op



Figure 1c: Smile pre-op



Figure 1d: Smile post-op

Educational aims and objectives

The aim is to introduce the reader to various studies that have been carried out on direct resin veneers.

Expected outcomes

The reader will understand treatment planning, when to use these veneers and discuss techniques and actual cases.



Dr Keri Do received her doctorate of dental surgery and completed undergraduate studies from the University of Southern California in 1996. She completed a general practice residency at Loma Linda Veteran's Hospital thereafter. She

has attended many hours of continuing education, but finds a particular passion for doing resin veneers, which she uses regularly in her practice. One of her patients was recently featured on the cover of the American Academy of Cosmetic Dentistry Journal. She was a state board examiner and is on the committee for the "Give Back A Smile" program – an AACD Charitable Foundation that provides dental care to victims of domestic violence. She lives with her husband and two children and practices in Honolulu, Hawaii focusing on cosmetic and restorative dentistry.

primary solution, before resorting to more invasive procedures such as full coverage crowns. It is a great alternative in young patients, patients with healthy tooth structure, patients with occlusal wear, or financial concerns. Direct resin veneers also have a high satisfaction rate because it they can be placed in one day, therefore patients will see an immediate result. A dentist can use direct resin veneers to mask discoloration or decalcifications, create new width, surface texture and length, conservatively close interproximal spaces, and test a new occlusal scheme before finalising it in porcelain. This article will discuss its technique and cases where direct resin veneers were used.

Case report 1 (Healthy dentition)

This was a female patient that was presented for a cosmetic consultation. She has always been unhappy with discoloration and decalcifications on her front teeth. She recently

transfers to a new job in real estate where she wants to look more mature and professional. With limited finances, the patient seeks treatment options to enhance her smile to make it brighter and more attractive. She has a healthy dentition with no caries or existing restorations on her anteriors. With minimum preparations, direct resin veneers were placed on six anterior teeth and whitening of the remaining anteriors was carried out.

Case report 2 (Occlusal wear)

This was a 28-year-old male with a chief concern of a 'gummy' smile and small teeth. The patient desired a brighter, bigger, and less 'gummy' smile. His smile analysis revealed generalised occlusal wear, a 'gummy' smile, and slightly narrow buccal corridor. Various treatment options were presented to the patient, including orthodontic treatment and full mouth rehabilitation by opening and balancing

Clinical

the patient's bite with indirect crowns and veneers. Due to the patient's limited finances and time constraints, he rejected these options and chose direct resin veneers and bite equilibration with resin bonding (Morley 2005). Resin bonding and direct resin veneers not only rejuvenated his smile, but gave the patient the opportunity to test out the new occlusal scheme before more permanent solutions were placed.

Case report 3 (Diastemas)

This is a female patient with a chief concern of the 'gaps' in her smile. We placed four resin veneers to not only close her diastemas, but add proper length, width, and surface texture to give her the smile she wanted whilst conserving tooth structure. Unlike conventional indirect restorations which would require breaking interproximal contacts and thereby removing unnecessary tooth structure, direct resin veneers can accomplish all these goals while preserving the patient's own tooth structure as much as possible.

Case report 4 (Young patients)

This was a 14-year-old male with a chief concern of small side teeth – peg lateral incisors. Even after just completing orthodontic treatment, he was still feeling self-conscious about his smile. His mother came to us seeking treatment options for restoring his laterals. She wanted something that was conservative and would last until his teeth hopefully grew longer when he reached adulthood. Direct resin veneers were the perfect choice. They were completed in one day, and the patient as well as his mother was very happy with the results.

Clinical procedures

Preparation

The clinical procedures for all direct resin veneers starts with collecting records. This includes photographic views, a full mouth exam, a full mouth set of radiographs, preliminary models, facebow and bite records (Dawson 1989). The models are usually mounted and waxed up to full contour. The occlusion is evaluated and fine tuned to work together with the aesthetics on the wax-up. A clear stent is taken of the wax-up model. This stent is then trimmed to the incisal edges and used as a guide for the resin placement to determine proper length and width (Blank 2002). Another clear stent of the model was made, and holes drilled through the facial surface to act as a preparation guide for the veneers (Eubank and Morley 2005). To isolate the gingival area, a gingival retraction cord saturated with clear hemostatic agent is placed. A minimum prepara-



Figure 2a: Retracted pre-op



Figure 2b: Retracted post-op



Figure 2c: Left smile pre-op



Figure 2d: Left smile post-op



Figure 2e: Right smile pre-op



Figure 2f: Right smile post-op



Figure 2g: Full smile pre-op



Figure 2h: Full smile post-op

ration is done using a chamfer diamond. The clear stent is then used to measure for adequate reductions. The preparation is then cleaned with a hydrogen peroxide solution and rinsed. A clear matrix strip is placed in between each of the teeth for isolation. The enamel areas on the preparations are then etched with 37% phosphoric acid, rinsed, and dried. A layer of

bonding agent is placed, blown thin, and cured for five seconds.

Placement and layering

A layer of hybrid composite is then placed on all the anterior teeth with the initial stent in placed. This helps to guide the proper placement of the incisal edge and help shape the

proper width and incisal embrasure. Careful attention is placed to not extend the hybrid composite beyond the preparation margin (Wilhite 1997). The hybrid composite is light cured for 40 seconds on each tooth. If a more polychromatic effect is desired, a thin coating of honey yellow tint is placed on the gingival area at this time. This is done in careful increments as not to use excess. This is then light cured for 40 seconds. Next, a layer of microfill composite is placed (Mopper 1994). Internal mammelons can be created with a grayish tint that can be placed in the incisal area after placement and light curing of the microfill composite. The internal mammelons can also be created by sculpting the microfill composite in the incisal area with a multi-use instrument. They are then light cured. An incisal composite is then placed to full contour. Finally, the entire surface of each tooth was coated with a water-soluble glycerine to eliminate the oxygen inhibited layer and light cured.

Finishing

Initial shaping is done with a #9-fluted carbide bur on the facial surface, while the lingual is done with a football finishing diamond. Rough contouring is achieved with a medium grit flexibuff disc. The incisal embrasures and interproximal shaping is completed with VisionFlex diamond discs. Excess composite is removed and contoured at the gingival margins and the labial margins with a #12 blade. Anatomy and texture are created using a #9-fluted bur and Ceramiste points. Fine contouring and polishing is done with a fine flexibuff disc and composite polishing paste. The occlusion is checked in centric and all excursive movements. At the end, clinical photos are usually taken to objectively evaluate all the smile design principles. The patient returned the next day for a post-operative check. Any repair work would be carried out at this time to fine-tune all the aesthetics and function.

Summary

Having the capability to perform a direct resin veneer is a must for today's cosmetic dentist. It has many applications ranging from a healthy dentition to treating occlusal wear cases, thus making it an important skill to have in today's cosmetic practices. Furthermore, by developing the capability to perform direct resin veneers with a high level of excellence, the dentist can utilize it to deliver a great cosmetic result, high patient satisfaction, and have a greater insight into all the complex elements of smile design.



Figure 3a: Retracted pre-op



Figure 3b: Retracted post-op



Figure 3c: Smile pre-op



Figure 3d: Smile post-op



Figure 4a: Retracted pre-op



Figure 4b: Retracted post-op



Figure 4c: Smile pre-op



Figure 4d: Smile post-op

References

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