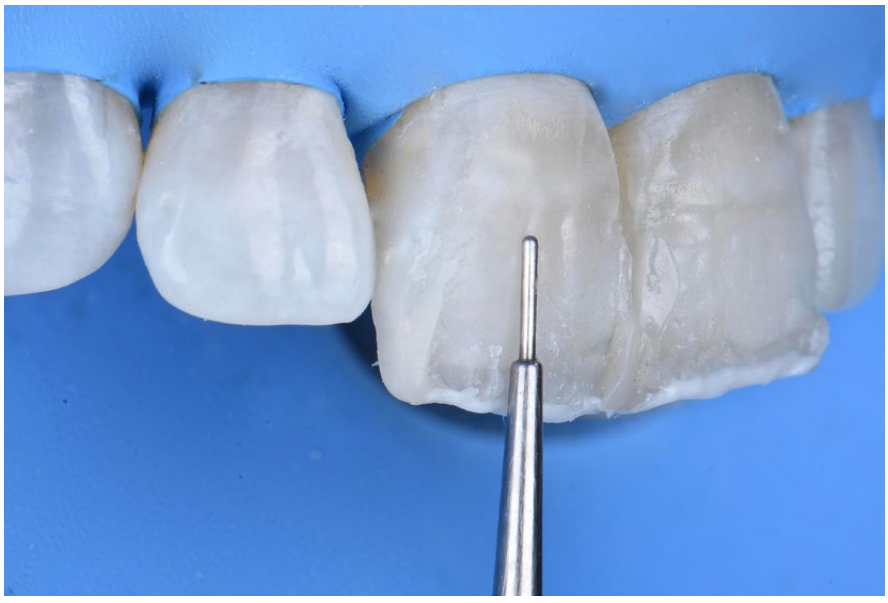
STYLE ITALIANO

Precise instrumentation, predictable composites and easy technique for single appointment Class IV direct restorations

Dr. Ajay Juneja

Class IV direct restorations present unique challenges in terms of aesthetics and function. A precise instrumentation approach, combined with predictable composite layering techniques, makes the procedure efficient and reliable in a single appointment. This article will explore the step-by-step process behind this method, highlighting how it achieves durable and aesthetically pleasing outcomes.



About Dr. Ajay Juneja

Dedicated to esthetic dentistry, he pursued Prosthodontics training in India before establishing himself as a Specialist Prosthodontist in Dubai in 2003. Presently, he oversees the New York Dental Practice, a boutique multispecialty clinic. Balancing clinical practice with academia, he serves as part-time faculty at Ajman University's Prosthetic Department.

As an international speaker, he has presented at numerous conferences and conducted workshops, particularly on Ceramic Veneers and Composite Resins. Specializing in Prosthodontics, Implantology, and Aesthetic Dentistry, he has received consecutive Mena Awards for Aesthetic Dentistry from 2009 to 2012. Recognized by StyleItaliano in 2012, he contributes to dental education through lectures and courses globally.

Currently serving as the country chairperson for ESCD, his articles on direct and indirect restorations are widely accessed online, showcasing his commitment to advancing Contemporary Restorative and Esthetic Dentistry.

Fig. 1 - *Initial situation.* A 45-year-old female sought to improve her smile. She wanted her central incisors to appear longer after undergoing orthodontic correction of her bite. She preferred the most conservative approach and was aware of the option of bonding. The appropriate photos were taken, and the teeth were thoroughly analyzed.

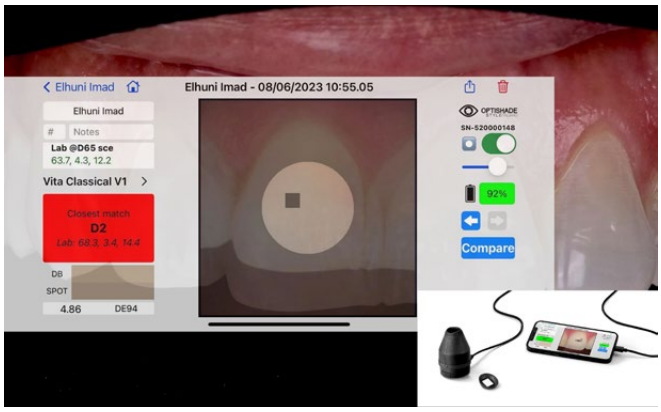


Fig. 2 - *Shade analysis.* In the past, various techniques have been used to analyze shade; however, for precise shade analysis, the OPTISHADE colorimeter (Styleitaliano, Smileline, Switzerland, St-Imier) is one of the best devices. It allows users to accurately select the right composite shade based on their personal preference. After analysis, it was determined that the basic shade of this tooth is D2.

Fig. 3 - *Lateral view of the initial situation.* The lateral views were also analyzed to evaluate the surface texture and characteristics of the teeth.with ligatures.

Fig. 4 - *Rubber dam application.* A rubber dam was applied to ensure proper isolation. The incisal edges were slightly rounded off using polishing discs for a smoother finish.

Fig. 5 - *Air abrasion.* Air abrasion with 27-micron aluminum oxide was used to clean the tooth surface and enhance bonding efficiency.

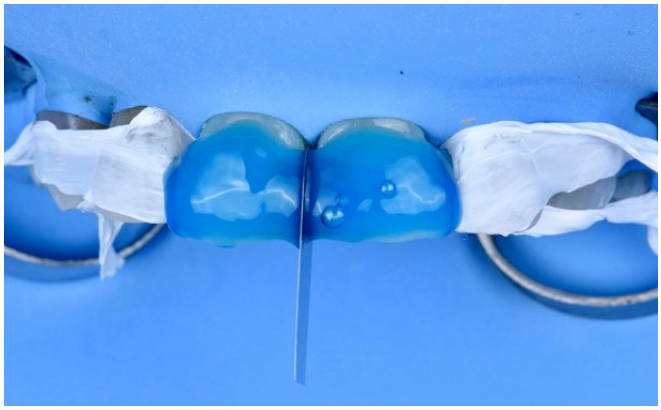


Fig. 6 - *Etching.* The adjacent teeth were protected with Teflon tape, and the enamel surface was etched with 37% phosphoric acid for 30 seconds.

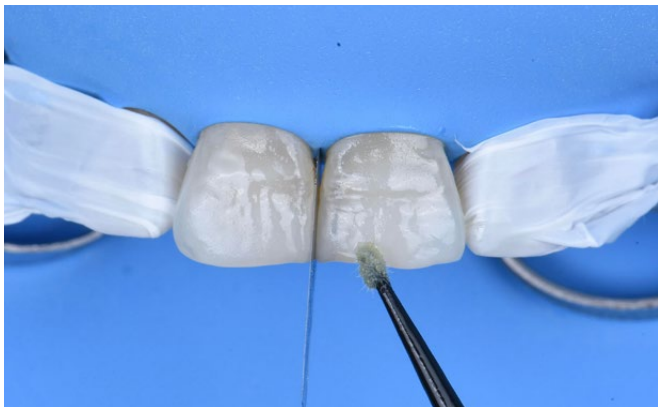


Fig. 7 - *Bonding application.* A universal bonding agent (OptiBond™ Universal) was used and applied in two coats for 30 seconds.

Fig. 8 - *Palatal shell.* A palatal mass of enamel, shade A3 (Harmonize™), was applied. To carry larger masses of composite, the Anterior Solo is an excellent instrument of choice.

Fig. 9 - *Condensa used with resin composite.* A box was created using enamel shade for the proximal areas and the palatal wall with Harmonize, utilizing the Condensa instrument (LM Arte, Finland).

Fig. 10 - *Opaque shade on incised.* A white opaque incisal shade was placed using NX3 cement at the incisal edge. This material holds better and is easier to manipulate than making rolls of denser composite resin. This technique is used to create a halo effect in the restoration.

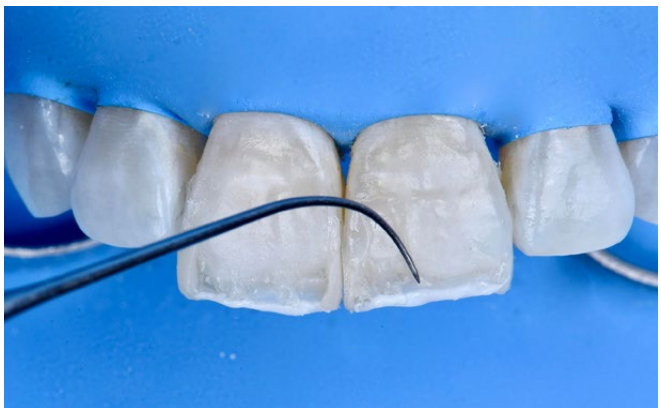


Fig. 11 - *Dentine application.* A layer of SimpliShade™ Medium was applied in place of dentine and finely sculpted using the Fissura instrument (LM Arte, Finland).

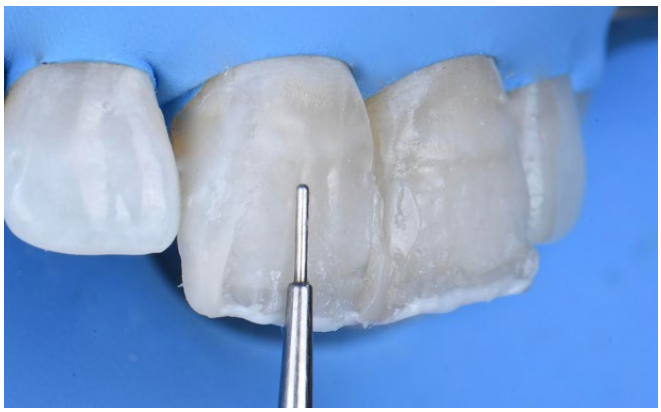


Fig. 12 - *Control of the dentine thickness.* The Misura instrument (LM Arte, Finland) is used to control the thickness of the dentine layer, ensuring a consistent and precise thickness for the body of the restoration.

Fig. 13 - *Final enamel layer.* A final layer of enamel A3, Harmonize, is applied and pressed over the dentine layer. The flexibility of the Applica instrument (LM Arte, Finland) ensures effective compaction of the composite without any air bubbles.

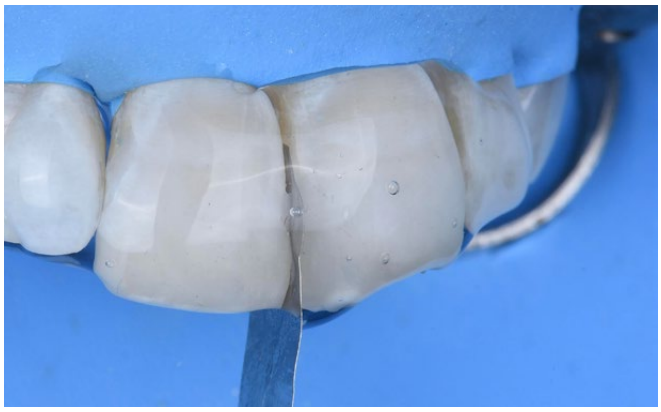


Fig. 14 - *Glycerine application.* A thick layer of liquid glycerin is applied to polymerize the superficial layer and enhance the conversion of monomers, which would otherwise be inhibited by oxygen.

Fig. 15 - *Macro and Micro Anatomy of the tooth.* The tooth is marked to create both macro and micro anatomy features, enhancing its natural appearance.

Fig. 16 - *Vertical and horizontal grooves.* A green grid diamond bur is used to create vertical and horizontal grooves, achieving the desired texture of the tooth.

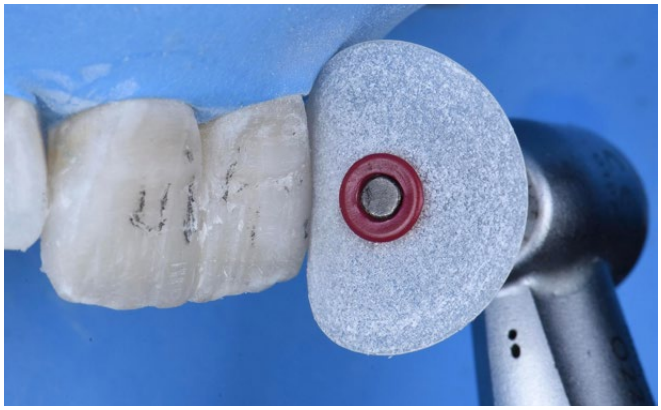


Fig. 17 - *Disc application.* OptiDisc™ are the flexible discs of choice as they do not scratch the surface of the restoration. A protruding mandrel is used with these discs to create the correct contour and line angles of the restorations.

Fig. 18 - *Rubber dam removal.* The rubber dam is removed, and Eccesso (LM Arte, Finland) is used to clean the excess composite interproximally.

Fig. 19 - *Finishing.* Interproximal finishing strips (Intensiv, Switzerland, Monthey) are used to clean and polish the composite between the two central incisors.

Fig. 21 - *Final situation.*

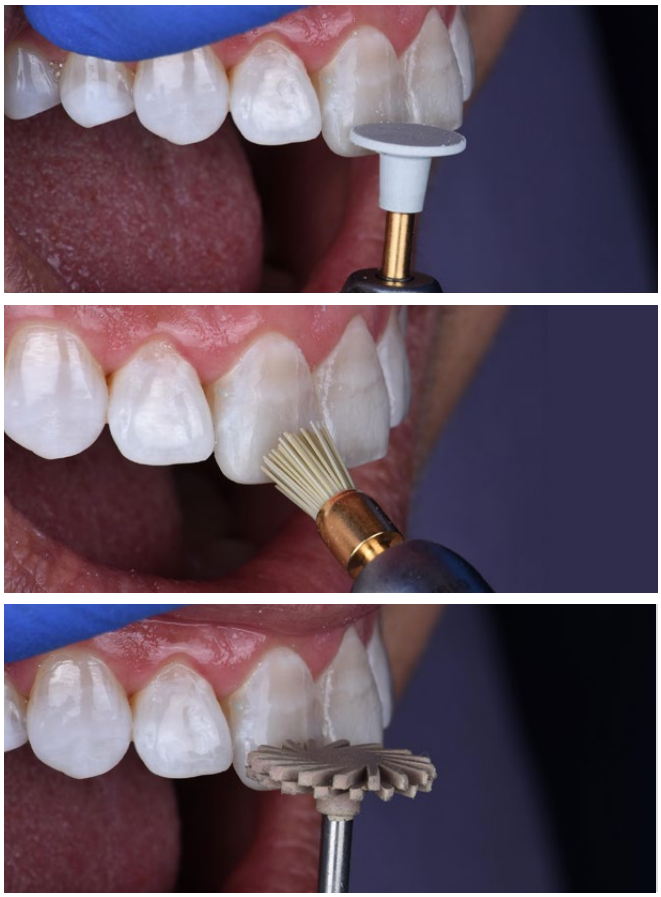


Fig. 20 - *Polishing.* Polishing is performed in four steps. First, rubbers (Opti1Step™) are used; second, impregnated brushes (Occlubrush™) are applied, followed by spirals. The polishing is carried out at low speed, between 4000 and 8000 RPM, using gentle, small strokes. Care is taken not to apply too much pressure to preserve the texture and prevent overheating of the tooth.

Fig. 22 - *Final step of polishing.* The final step of polishing involves using the Lucida system by Diashine. The ingredients in this polish create a high gloss on the surface, ensuring natural light reflection while maintaining the appropriate texture. This results in long-term aesthetic outcomes.

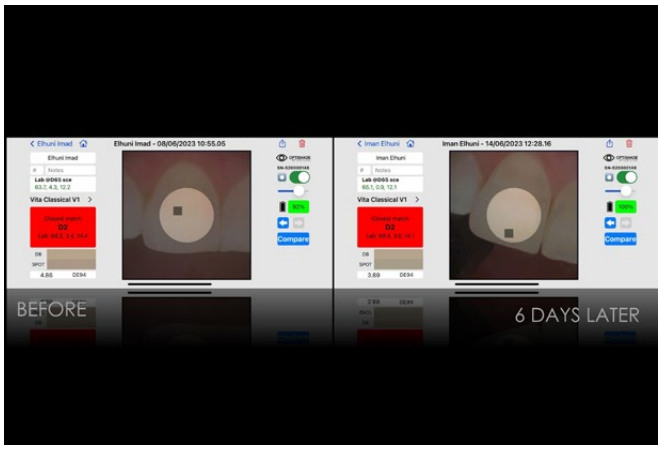


Fig. 23 - *SimpliShade in action.* A comparison is made with SimpliShade to evaluate the clinical outcome of the restoration, providing valuable insight into the integration of the restoration. This serves as a powerful tool for enhancing patient satisfaction by showcasing the use of advanced technology and ensuring excellent results.

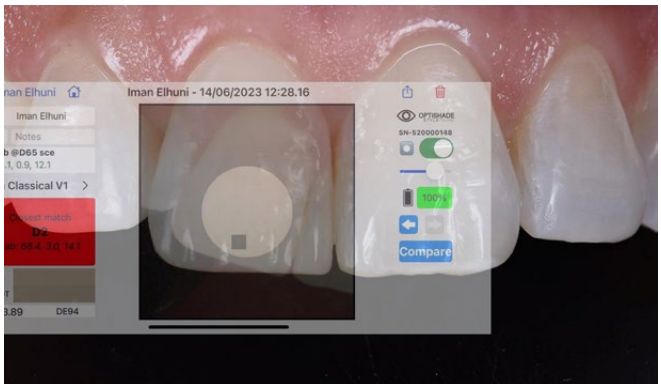


Fig. 24 - *SimpliShade in action.* Final situation.

Fig. 25 - *Final result.* The final result after six days reveals perfectly matching composite restorations that blend seamlessly with the surrounding tooth structure.

Fig. 26 - *Before and after.* Before and after 6 days.

Fig. 27 - *Final result.* Final situation of the treatment.

Conclusion

A beautifully integrated composite restoration is a result of 3 essential ingredients. The right technique, the right materials, and the right armamentarium.

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Disclosure: Dr. Ajay Juneja is a consultant for Kerr. The opinions and technique expressed in this article are based on the experience of Dr. Ajay Juneja. Kerr is a medical device manufacturer and does not dispense medical advice. Clinicians should use their own professional judgment in treating their patients. All trademarks and brand names are the property of their respective owners.

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