

Simplifying restorations

Ian Shuman shows how it can be achieved in the aesthetic zone.

The ability to create highly aesthetic direct composite resin restorations in a simplified manner has long been a goal for practising dentists. In the past, difficulties with direct composite resins have included shade matching, handling properties, premature setting under operator lights, and the overall ease of use. This article will describe a composite resin system (Amaris, VOCO) that has demonstrated desirable properties for use in posterior teeth and especially in the aesthetic zone. Then, a case report demonstrating the use of the material will be presented.

Colour matching is greatly simplified because one does not have to employ a complicated and time-consuming multilayer shade technique.

Two-step concept

Tooth colour, with its varying shades and translucencies, is difficult to achieve between composite systems. Resins based on the porcelain Vita classical shade guide (Vident) cannot achieve the desired results with consistency. Most composite systems work on the principle of matching composite to the basic shade ranges found in dentin and enamel. To create the polychromatic effect found in natural enamel and dentin, several things must happen. To mimic the



● Fig 1: Preoperative photo: Maxillary anterior teeth were discoloured, fractured, and sensitive.



● Fig 2: Stained enamel was removed, and a scalloped margin prepared.



● Fig 3: Margins were created at the interproximal surfaces of both teeth.



● Fig 4: A self-etching, dual-cure bonding agent (Futurabond DC, VOCO) was applied.



● Fig 5: A custom shade tab was used to determine the correct opacous dentin color.



● Fig 6: O1 composite (Amaris, VOCO) was tried against the prepared tooth.

optical properties of hydroxyapatite enamel rods, composite resin must create the illusion of the way light is reflected in the natural tooth. Dentin is by nature opaque providing teeth with their basic shades of yellow, brown, gray, and blue. Enamel is by nature a white-translucent shade, providing teeth with their natural value. Using this basic principle, aesthetics accomplished when using Amaris is simplified for everyday use with an easy to understand, two-step shade concept with five opaque 'dentin' and

three translucent 'enamel' shades. Choosing the correct shade is simplified by using the custom shade guide, which is made from original light-cured composite material. Colour matching is greatly simplified because one does not have to employ a complicated and time-consuming multilayer shade technique. With minimal effort, colour matching is developed as you go. Because the colour of dentin 'shines' through enamel, this system offers a shade system that follows this natural ➔



Ian Shuman

runs a practice in
Pasadena, Maryland,
USA.



● Fig 7: An initial layer of O1 was applied.



● Fig 8: A second O1 increment was then placed.



● Fig 9: A custom shade tab was used to determine the correct translucent enamel colour.



● Fig 10: TL composite (Amaris, VOCO) was tried against the prepared tooth.



● Fig 11: TL composite was then sculpted to shape completing the restoration.



● Fig 12: Photo of the restored maxillary right central incisor next to the unrestored left central incisor.

and as a high-gloss finishing layer. High opaque flowable is suitable for thinly masking discolorations, as a restorative base following endodontic treatment, covering amalgam stains, mimicking the cervical areas in older teeth, and blending with adjacent PFM crowns. Optimal matching of Amaris Flow to Amaris paste (in shade and translucency) allows combined application with the composite-bonded-to-flowable technique, without reducing the stability or aesthetics.

Surface hardness and abrasion

The abrasion caused by chewing load is still a central aspect for the durability of restorative dental materials. High abrasion rates in the posterior tooth region lead to edge fractures and loss of the occlusion. Abrasion in the anterior tooth region leads to loss of lustre, which makes the restoration appear dull and unaesthetic. It is thus a fundamental goal of the development of restoratives to optimise hardness and abrasion resistance. The extremely high-filler content (80.0 w/w per cent) provides Amaris highly aesthetic hybrid composite with an exceptionally hard surface. This insures a durable restoration due to its high physical strength and a high polish abrasion resistance.

Many filling materials can be polished to a high gloss simply because they are not particularly hard. The materials lose their shine within a short amount of time due to poor abrasion resistance; aesthetics at the price of durability is not a good compromise. In my experience, Amaris composite exhibits excellent polishing characteristics, high gloss, and very good gloss retention. In addition, up to eight minutes of handling time in ambient operator light, an additional bleach opaque shade, and two flowable choices covers all clinical situations helping to make this a versatile material. The following case report demonstrates a clinical situation where this composite system was successfully utilized to achieve optimal anterior aesthetics. ☺

● Principle, simplifying direct aesthetic composite restorations into two simple steps. The material demonstrates a chameleon-like effect with non-opaque shades and outstanding shade matching on the tooth. This adaptation makes complex (shade) layering techniques unnecessary, and delivers an aesthetic result with fewer shades.

Many filling materials lose their shine within a short amount of time due to poor abrasion resistance.

for all classes of restorations. It is stable in posterior teeth and highly aesthetic for anterior teeth. A flowable version (Amaris Flow) supplements

the restorative possibilities. With excellent wettability properties, the material flows directly out of the

syringe into extremely small cavities. It is available in two special universal shades: high translucent (HT) and high opaque (HO). The HT flowable is suitable for highly translucent incisal edges, small enamel or incisal defects,

Application possibilities

Amaris is a hybrid composite suitable



● Fig 13: A dual-cure bonding agent (Futurabond DC, VOCO) was applied to the left central incisor.



● Fig 15: A final layer of TL composite was placed.



● Fig 17: The restorations after contouring and shaping, before finishing and polishing.



● Fig 14: O1 dentin replacement was applied.



● Fig 16: The maxillary central incisors, restored with unfinished composite.



● Fig 18: The completed case.

Case report

The patient, a 23-year-old female presented with a chief complaint of discoloured, fractured, and sensitive maxillary anterior central incisors (fig 1). Direct composite restoration was selected as the treatment of choice to correct the aesthetic deficiencies, tooth sensitivity, and structural flaws with minimal tooth reduction. Following administration of local anesthesia, minimal tooth preparation was accomplished using a football-shaped diamond bur (SS

Direct composite restoration was selected as the treatment of choice to correct the aesthetic deficiencies.

White) and a standard round end tapered chamfer diamond bur (SS White, [fig 2 and 3]). The stained enamel was removed and a scalloped preparation margin was created at the interproximal of both central incisors.

Discolouration at the composite-tooth junction is an indication of microleakage and can be an indicator for the presence of caries. The frequency of margin discoloration is affected by the adhesive chosen, the composite itself, and the finishing

technique employed.

The left central incisor was first isolated from the bonding procedure using Teflon tape. The right central incisor was then treated with a dual-curing nano-reinforced self-etching adhesive (Futurabond DC, VOCO), fig 4) and light-cured. Next, an opaque-dentin shade button was selected that best matched the tooth. The Opaque (O1) (Amaris shade tab, VOCO) was matched to the prepared tooth and the adjacent unprepared lateral incisor (fig 5). The O1 composite was then tried against the prepared tooth (fig 6) and sculpted, leaving a 0.5mm thickness for the final enamel layer (figs 7 and 8). This composite was designed so it does not stick to instruments and it allows it to be shaped in the cavity with simple movements, using almost no pressure.

Next, the Translucent Light (TL) Amaris shade tab was matched to the prepared tooth and the adjacent lateral incisor (fig 9). Then, the TL composite was tried against the prepared tooth (fig 10), and this final enamel layer was sculpted to place (fig 11 and 12). These same steps were then done for the maxillary left central incisor (figs 13 to 15). Once both maxillary central incisors were restored (fig 16) and the occlusion was checked, the restorations were finished to proper anatomic morphology (fig 17) and polished (fig 18).

Conclusion

A technique for placing direct composites that allows a predictable final outcome in the aesthetic zone has been demonstrated. In my opinion, the simplicity of shade matching and aesthetics, ease of application, finishing, and polishing, along with the strength and durability make Amaris an ideal choice as a direct restorative material. ■

To contact Ian Shuman email ian@ianshuman.com