

Patient-centric treatment with composite Artistry

By Dr Melvin Sia, Malaysia

Direct restorations to date remain the most common type of treatment provided by dentists in routine clinical practice. With the advances in information technology and social media taking centre stage with the selfie culture, there is an increase in oral health awareness leading to a higher demand for smile enhancements with aesthetic restorations. Today we see more and more patients visiting the clinic with a common request to enhance their smiles or replace discoloured old dental fillings with more aesthetic, tooth-coloured life-like restorations. Meeting patient demands and expectations is something we have to address carefully as its always important to provide the desired aesthetic outcomes to our patients while preserving maximum healthy natural tooth structure for the best long-term prognosis of the restorative treatment. This holistic treatment approach is best achieved by adopting the Minimally Invasive Cosmetic Dentistry (MICD) concept and treatment protocol in routine clinical practice.

The clinical case shared below explains an MICD restorative protocol adopted for replacing a posterior old amalgam restoration using the Beautifil range of bioactive composite resin to achieve the patient's desired aesthetic outcomes (Figs 1a, 1b).

Patient Case

A female patient visited the clinic complaining of unsightly "silver" coloured fillings on her lower molar teeth and requested for replacement with more aesthetic tooth coloured fillings as she was embarrassed to laugh with her mouth opened which resulted in a lack of self-confidence. Upon discussion of the treatment plan, it was agreed to initially replace only the first molar tooth due to her limited budget.

Material Selection

Isolation – Rubber Dam
Tooth preparation and caries removal – Diamond Points
Etching & Bonding – 35% Phosphoric acid and BeautiBond bonding agent
Mask discolouration – Beautifil Opaquer # UO
Deep Dentin layer – Beautifil Inject-

able X #A1O
Dentin layer – Beautifil II LS #A3
Characterization – Dark Brown Stains Finishing & Polishing – OneGloss 2in1 Smart Polisher

Restorative Process

Rubber dam isolation has become more mainstream in clinical practice today providing the clinicians with improved access and visibility during the restorative process. After rubber dam isolation the old amalgam restoration was removed and amalgam tattoo was observed in the deeper section of the cavity (Fig 2 & 3).

After performing selective etching with 35% phosphoric acid and application of the 7th generation bonding system BeautiBond, Beautifil Opaquer shade UO was applied to mask the discolouration at the base of the cavity (Fig 4& 5& 6). The deep dentin layer build-up was with Beautifil Injectable X shade A1O which helps to apply the material exactly where you need it with the convenience of injecting as you shade. (Fig 7) After light-cure the build-up of den-

tin layer was completed with Beautifil II LS shade A3. As the translucency of the dentin shade was sufficient for the aesthetic outcome required a 2 layer build-up technique was used for this restoration (Fig 8). The surface characterization and groves were created with LM Arte Fissura & Dark Brown stain (Fig 9).

As there were minimal adjustments of the occlusal surface a OneGloss 2in1 Smart Polisher was used with more pressure for fine finishing followed by feather light pressure to achieve the final polish. (Fig 10, 11)

Conclusion

In order to achieve both the desired aesthetics and function, material selection plays a very important role when replacing old amalgam restorations as often discolouration known as amalgam tattoo remains on the tooth surface. In this patient case where aesthetics were the first priority a bioactive nano-hybrid composite Beautifil II LS was selected as an ideal choice since the sculptable non-tacky consistency and easy

blending of shades and polishability helped to achieve the desired aesthetics while the bioactive properties and low polymerization shrinkage provided additional protection to prevent secondary caries. I adopted a simplified finishing and polishing protocol to achieve the high gloss enamel-like the lustre of the final restoration as this step is key to increasing longevity for a long-lasting restoration. ^{DT}

About the author

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Dr Melvin Sia received his Bachelor of Dental Surgery from AIMST University, Malaysia in the year 2011. He is currently the Clinical Director of his private dental clinic, M Dental Clinic. Dr Melvin is particularly interested in restorative dentistry – direct and indirect aesthetic restorations. In pursuit of his passion for aesthetic dentistry, Dr Melvin has attended numerous training courses by renowned clinicians and is a clinical trainer for MICD (Minimally Invasive Cosmetic Dentistry).

CLINICAL TIPS

1. TO PREVENT OVERBUILDING THE CUSP, CHECK THE PATIENTS BITE/OCLUSION WITH ARTICULATING PAPER BEFORE THE START OF THE TREATMENT. THE ARTICULATING PAPER MARKING ON THE OCCLUSAL SURFACE, HELPS GUIDE THE BUILD-UP OF THE COMPOSITE RESIN MINIMIZING HIGH POINTS.
2. USE LM ARTE FISSURA OR A SIZE #10 K FILE TO CARVE AND CHARACTERIZE THE GROOVES ON THE OCCLUSAL SURFACE TO ACHIEVE MORE LIFE-LIKE AESTHETICS.



Fig 1a, 1b: Before and after Amalgam replacement with Beautifil range of bioactive nanohybrid composite



Fig 2: Rubber dam isolation

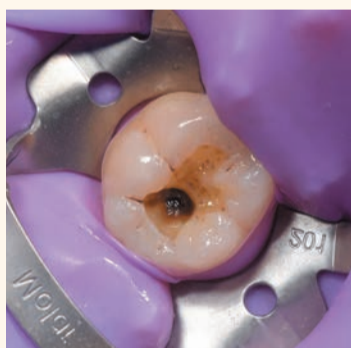


Fig 3: Removal of old amalgam with presence of amalgam "tattoo" at the base

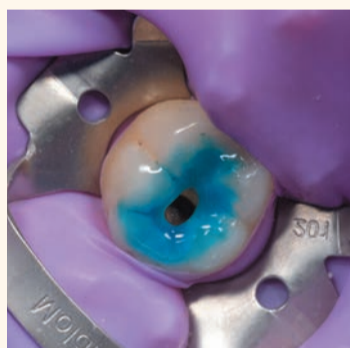


Fig 4: Etching and bonding with 35% phosphoric acid and Beautibond



Fig 5: Beautifil Opaquer Shade UO applied to mask the amalgam "tattoo" at the base of the cavity

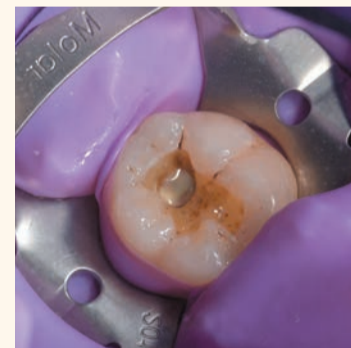


Fig 6: After placement of Beautifil Opaquer UO



Fig 7: Replacing deep dentin layer with bioactive Beautifil Injectable X shade A1O



Fig 8: Build-up of final layer with Beautifil II LS shade A3



Fig 9: Create the groves with LM Arte Fissura & Dark Brown stain

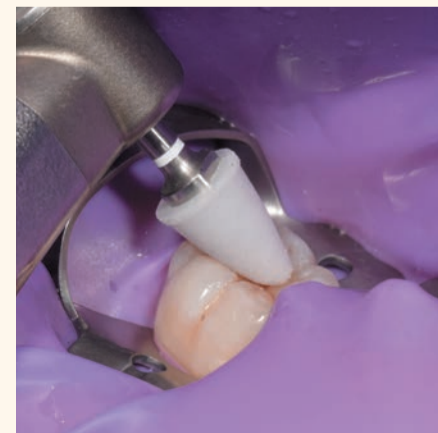


Fig 10: Polishing with OneGloss Midi point 2in1 smart polisher



Fig 11: Final restoration after removal of rubber dam