

Esthetic Posterior Restoration made easy

by Dr. Dylan Yung

During his annual consultation, a 38 year old male patient complained of slight tenderness when biting on an existing restoration in the 36. After a comprehensive examination, the 36 revealed marginal weakness with failing margins on the distal aspect and poor esthetics in addition to the above mentioned tenderness. The patient agreed to the removal of the existing restoration and replacement with a composite restoration.

Summary of the Procedure:

The existing restoration was removed along with residual decay and undermined enamel. The tooth was isolated and the cavity was prepared. The 3M™ Sectional Matrix Plus System* was utilised to create an ideal anatomical contour and ensure a naturally tight contact. After protecting the exposed dentine, selective etching of the enamel was carried out, followed by application of the bonding agent, 3M™ Single Bond Universal Adhesive.

Composite in an anatomical manner using the A4 Dentine and A2 Enamel Shades. This was completed by placing incremental layers in a controlled manner to minimise “over-building”. After initial contouring, the occlusion was checked and the final finishing and polishing were completed using 3M™ Soflex™ Spiral Wheels.

The result was an esthetic posterior restoration using a simplified layering technique with only 2 shades.

Using the technique demonstrated and taught by Noboru Takahashi in Tokyo, Japan, the tooth was restored using 3M™ Filtek™ Z350 XT Universal





1. Presenting Condition

Slight tenderness on biting.
Failing margins.
Not esthetic.



2. Remove Failing Filling & Isolate

Removal of existing restoration, residual decay & undermined enamel. Rubber dam isolation following cavity preparation. Additional moisture control using floss ligature ties.



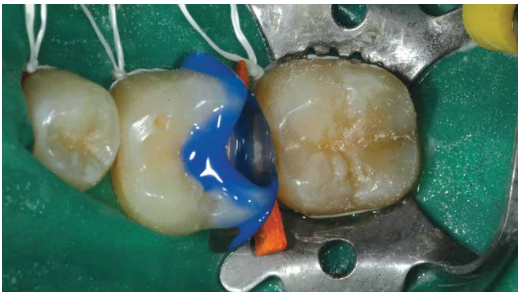
3. 3M Sectional Matrix Plus System* will be utilised

The 3M Sectional Matrix Plus System was utilised to create ideal anatomical contour & a naturally tight contact. Once satisfied the contoured sectional band & wedge is secure the cavity is further 'cleansed' using micro abrasion (27µm @ 40psi).



4. Following Micro-Abrasion Cleansing, Line Exposed Dentine with RelyX Unicem*

The exposed dentine is protected using 3M RelyX Unicem Self Adhesive Cement & light cured.



5. Selective Etch

Selective etching of enamel & or dentine for 15 seconds. In this case there is no exposed dentine but the etch is carried into the cavity to demonstrate.



6. Etch Extended into the Cavity



7. Application Of Bonding Agent

3M Single Bond Universal is applied. Excess is removed via high volume suction & using the application brush. Ensure no pooling of resin in the line angles.



8. Evaporate The 'Carrier'

Use a warm air drier to evaporate the carrier. Light cure the adhesive for 10 seconds.



9. Partial Build Up of the Proximal Box

This tooth will be restored using Filtek Z350 XT in an anatomical manner. Composite shades used: A4 Dentine & A2 Enamel.**



10. 3M Sectional Matrix Plus Ring is Placed

The Sectional Matrix Plus Ring is now able to be placed to help create a tight contact point. The wedge was changed for a better 'fit'. The orange wedge was riding too high into the contact zone.



11. Proximal Wall Built

Complete build-up of the proximal wall using a single increment (A2 Enamel). Now that the contact is formed the matrix band can be removed.***



12. Incremental Placement of Dentine Replacement

Incremental placement of the dentine layer to minimise effects of shrinkage stress. Care must be taken to minimise trapping voids.



13. Dentine Finished 'Flat' 2mm Below Cuspal Tips

Dentine layer completed. 'Finish' the dentine layer flat and 2mm below the cuspal tips.



14. Placement Of Enamel Replacement

Excess 'enamel' composite is placed.



15. Enamel Layer 'Burnished' Into Place

'Burnish' this layer & take care not to trap void. Feather composite over the margins whilst removing excess at the same time.



16. Anatomical Detail Created

Anatomical detail is created using a dental probe. Harsh sculpted features are 'softened' using a resin moistened brush. **NOTE:** All increments are placed in a controlled manner minimising over building.



17. Commence Contouring

Sof-Lex Discs & No 12 Bard-Parker® Blade used in the interproximal region. Occasionally a diamond polishing strip KOMET) is used to refine contour. Enhance® Cups (Dentsply) are used with irrigation to commence fine finishing.



19. 3M Sof-Lex Spiral Finishing Wheel

Final finishing using Sof-Lex Spiral Wheels.



18. Remove Rubber Dam & Check Occlusion

Wedge, rubber dam & floss ligatures are removed. The occlusion is checked & refined.



20. 3M Sof-Lex Spiral Polishing Wheel

Final Polishing using Sof-Lex Spiral Polishing Wheel.



21. Finished Restoration



Dr Dylan Yung graduated from the University of Otago with a Bachelor of Dental Surgery in 1992. He was a founding member of the NZ Academy of Cosmetic Dentistry (NZACD) and maintains a private practice in Newmarket, Auckland with a focus on reconstructive & esthetic dentistry.

Dr. Yung brings to you a wealth of knowledge and experience from his extensive training abroad at the Fahl Centre for Esthetic Dentistry (Brazil), the Kois Center, UCLA & the Las Vegas Institute for Advanced Dental Studies (USA) where he has also served as a clinical instructor.

Dr. Yung has had the privilege of working alongside and instructing with Dr. Bill Dickerson, Dr. Douglas Terry, Dr. Corky Willhite & Dr. Newton Fahl. He has had the honour of being one of just a handful of international students to be invited back to speak at the Fahl alumni meetings.

He has conducted numerous seminars and workshops both nationally and internationally lecturing on the latest aspects of cosmetic dentistry.

*The 3M™ Sectional Matrix Plus System and RelyX Unicem Self-Adhesive Cement is not available in Indonesia.

** **Acknowledgement:** The technique used is demonstrated & taught by Noboru Takahashi Tokyo Japan. Due to the broad 'open' proximal box the disto-buccal portion of the proximal box is built first (A2 Enamel). This allows the Compositi-Tight ring to be placed without 'collapsing' into the cavity.

*** This allows more working space. In some instances the interproximal tissue can be inflamed. Despite rubber dam placement & use of floss ligature ties blood can still seep out. Mechanical trauma of inflamed tissue can result in uncontrollable bleeding. Leaving the wedge in place will help minimise the chance of 'bleeds'.

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3M Oral Care

3M Indonesia

Perkantoran Hijau Arkadia, Tower F, 8th floor Jl TB

Simatupang | Jakarta Selatan 12520 Indonesia

Office : +621 2997 4000

Phone : +62 813 1554 0844

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