

# Case Study

## About the Case

One of the benefits of using a single shade of composite in a restorative procedure is that it allows the clinician to focus on the shape of the tooth which is critical to the final esthetic outcome.



**Initial situation:** Pre-operative esthetics.

### Challenge:

The patient was unhappy with the results of previous orthodontic and restorative treatments and expressed a desire for a more esthetic outcome. A diagnostic and esthetic assessment were the first stages in the treatment of this complex case.



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### **Step 1**

#### **Post-surgery.**

3 months after crown lengthening bone surgery, the patient is ready for the planned restorative treatment.



### **Step 2**

#### **Color selection.**

On the day of treatment, color selection was completed with a direct mock-up using the "button technique" which involves placing round composite button samples, in different shades, on the middle third of the tooth and photographing using a polarizing lens.



### **Step 3**

#### **Shade "try in."**

Another approach to shade selection is to "try in" the composite by simulating the thickness, opacity, and color on the tooth to be treated. It is important that the teeth stay hydrated during this procedure as desiccated teeth appear much whiter than they otherwise would.



### **Step 4**

#### **Isolation.**

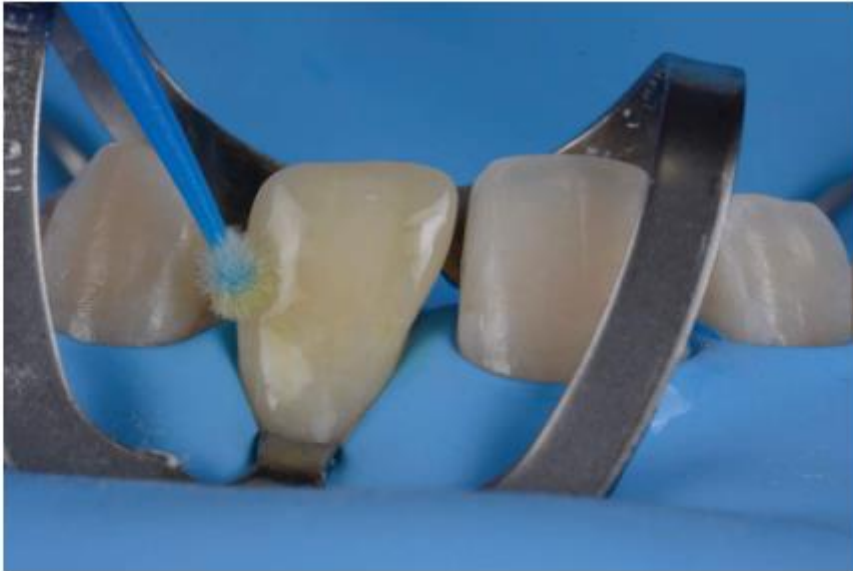
Rubber dam isolation is critical to the success this restorative procedure, and preferred over other isolation techniques, because the rubber dam provides access to a dry field needed to create the cervical contour and emergence profile most efficiently. The existing restoration is conditioned by sandblasting using 29 micron aluminum oxide.



### Step 5

#### Etching.

Bonding surfaces were etched with 3M™ Scotchbond™ Universal Etchant. The gel was rinsed off with water after 15 seconds. 3M™ Scotchbond™ Universal Adhesive was applied, rubbed for 20 seconds, treated with a gentle stream of air for solvent evaporation, and light cured for 10 seconds.



### Step 6

#### "Front Wing" technique.

The "Front Wing" technique was used for creating cervical contour, emergence profile, and tooth dimensions. A low stress, high polish universal composite was used for the final restoration (3M™ Filtek™ Universal Restorative).



### Step 7

#### Optimization.

After matrix removal, both distal and mesial contours are optimized. Pre-finishing the composite is extremely helpful before starting the construction of the neighbor teeth because it allows you to see very small surface defects which are easily corrected at this time.



### Step 8

#### Correction of defects.

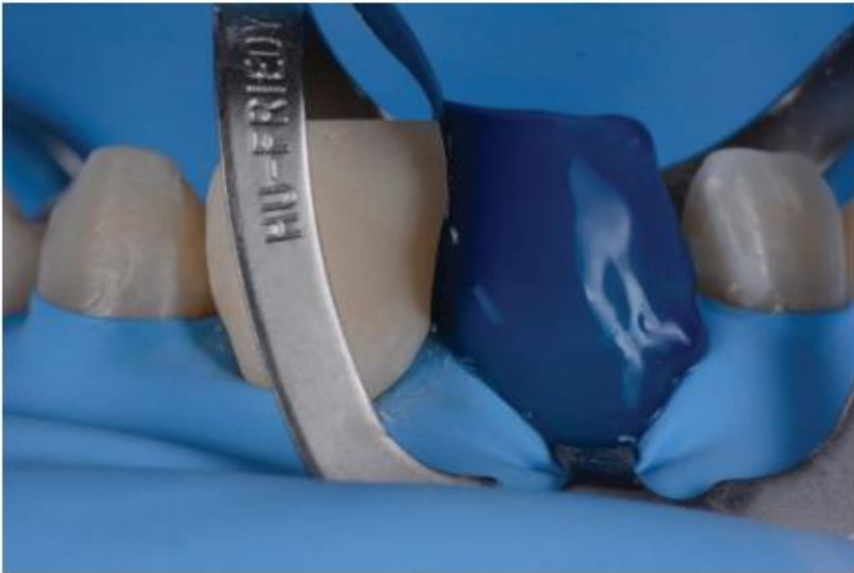
In my experience, small defects are more easily corrected with flowable composite (in this case 3M™ Filtek™ Supreme Flowable Restorative) while bigger defects are more easily corrected with universal or bulk fill composite "pastes."



### **Step 9**

#### **Protection of neighboring tooth.**

A matrix is used to protect the neighboring tooth while placing 3M™Scotchbond™ Universal Etchant. Because the protective matrix has not been deformed, it can be reused to build interproximal anatomy.



### **Step 10**

#### **Modeling.**

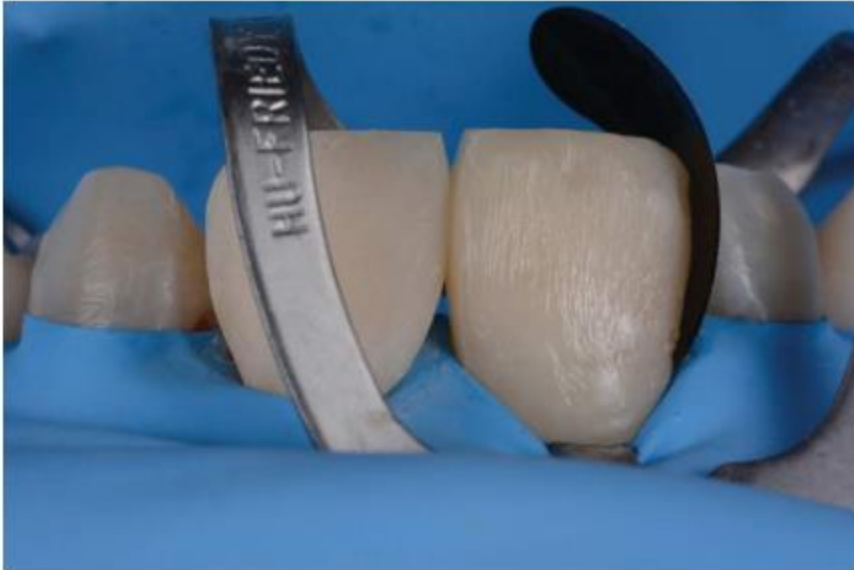
After completing the cervical and proximal contour, the buccal area of the tooth is modeled using a very wide instrument designed for direct veneers (SOLO Anterior, LM instruments, Finland).



### **Step 11**

#### **Backfilling.**

Backfilling of the front-wing matrix is now complete. If the space is very narrow, you may find it easier to use 3M™ Filtek™ Supreme Flowable Restorative followed immediately by 3M™ Filtek™ Universal Restorative (also referred to as the “Snowplow” technique).



### **Step 12**

#### **Removal of matrix.**

Image of the restoration after removal of the matrix and before the finishing. The restoration of left canine and premolar were performed using the same technique as the central incisors, focusing mainly on shape and contours.



### Step 13

#### Pre-finishing.

Restoration after rubber dam removal but before the final finishing, polishing and occlusal adjustments are made.



## The 3M Difference.

The single shade composite strategy using 3M™ Filtek™ Supreme Flowable Restorative and 3M™ Filtek™ Universal Restorative Shade A2 (formulated to match identically), allowed us to focus on anatomical shape and finishing and polishing details resulting in a very esthetic final restoration.



Before



After

The final gloss was achieved using the 2-step 3M™ Sof-Lex™ Diamond Polishing System. Future adjustments are still possible when using conservative direct composite techniques. The single composite shade strategy allows the clinician to focus on anatomical shape and finishing and polishing details resulting in a very esthetic final restoration.