

# Esthetic Corrections of Congenital Anomalies Utilizing the Injectable Resin Composite Restorative Technique



## INTRODUCTION

Congenital anomalies can lead to compromised esthetic appearance especially when occurred in the anterior region. This can be as a result due to abnormality of shape and form due to malformations and malposition of these teeth. The technique used in this case was the injectable resin composite restorative technique, which is a three-dimensional guided layering approach with the use of a transparent silicone key of a full wax-up. With this technique we could control the shape and thickness of our layering to achieve a predictable result according to the final wax-up. The purpose of this poster presentation was to present a reliable and reproducible technique when achieving the restoration of the transposition teeth especially in the esthetic zone.

## CASE STUDY

A 15 years old female presented to the Department of Esthetic Dentistry after orthodontic treatment has been completed. Her chief concern was, "She wanted her teeth to look normal". The challenges that we faced for this case were mainly because there were multiple transposition of teeth which we had to take into consideration.

## METHODS & MATERIAL

Gingivectomy was performed using No 15 surgical scalpel blade. Impressions were taken with Reprisil® Regular Body and Heavy Body (Dentsply), and were poured with plaster. A full wax-up for her upper anterior teeth was fabricated. The silicone index were made with Memosil 2 based on the full wax-up. A palatal guide was made with putty based on the final wax-up. The shade was taken by placing small amounts of composite of about 0.5mm thickness on the cervical area of the central incisor. G-ænial™ Universal Injectable (GC) Composite shades selected in this case were Enamel A3, Enamel A2, Enamel A1, BW and AE.

The Anterior teeth were disinfected with 2.0% Chlorhexidine gluconate and polished with polishing discs (Soft-Lex® discs)The surfaces were etched for 15 seconds with 35 % phosphoric acid and the adhesive agent was lightly scrubbed, air-dried gently to evaporate solvent and light-cured for 20 seconds.

Isolation was achieved with Teflon® tape. The transparent Index was tried in with Teflon tape in place to verify the seating. A hole was made through the incisal aspect of the transparent matrix using the chamfer bur and the composite tip. Subsequently, G-ænial™ Universal Injectable (GC) Composite shade A2 was injected on to the upper right first premolar and shade A1 was used for the remaining anterior teeth using the transparent matrix. Injection of G-ænial™ Universal Injectable Composite (GC) was performed until the transparent matrix was completed filled. The tip was removed and the composite was light-cured for 40 seconds on the facial wall and palatal wall through the transparent matrix. Excess injectable composite was removed with a no. 12 surgical scalpel blade and finishing bur without water. The same procedure was performed on the other anterior teeth.

For the the upper right first premolar and upper left canine, the composite resin were cut-back in the incisal third on the facial surface. Putty index from the final wax was used to evaluate the thickness of the enamel layer in the incisal third region. A thin line of G-ænial™ Universal Injectable Composite (GC) shade BW was placed on top of the incisal edges that were cut-back and light-cured for 40 seconds to create the incisal edge halo. White resin color modifier (Kolor + Plus™) was added with a brush (Artist's Brush Double-Ended, Estelite Omega) and light-cured for 20 seconds.

Isolation was achieved with Teflon® tape around adjacent teeth. G-ænial™ Universal Injectable Composite (GC) shade AE was injected to establish the final enamel layer for the right upper first premolar and left upper canine using the transparent matrix. The tip was removed and then light-cured for 40 seconds on the facial wall and 40 seconds on the palatal wall. Excess of composite was removed with a no. 12 surgical scalpel blade and finishing bur without water. Light-reflection areas and light-deflecting zones were verified with a pencil and adjusted with finishing bur and polishing discs(Soft-Lex®), in sequence. The occlusion was adjusted in static and dynamic position using articulating paper. Final polishing was performed with Soft-Lex® (3M ESPE) polishing discs, in sequence, and buff-disc (Supersnap®, Shofu) with a diamond polishing paste (DirectDia Paste®, Shofu).

## INITIAL PHOTOGRAPHS



## CLINICAL WORKFLOW



## FINAL PHOTOGRAPHS



## DISCUSSION & CONCLUSION

The injectable composite restorative technique enables a quick way to replicate in composite what was achieved in the wax up. Especially, in recent years, new flowable, highly filled composite formulations have higher strength, wear resistance and color stability. However, layering to develop precise dentin and enamel layers is lacking using this technique. That is why we incorporated the cut-back technique to rectify this problem. Nevertheless, it is considered a faster solution in terms of the number of appointments. There is no need for laboratory work or provisional restorations. It also has a lower cost for the patient than ceramic restorations. Using this technique, treatment incorporating restorative space management and restorations in the esthetic zone can be predictably achieved.