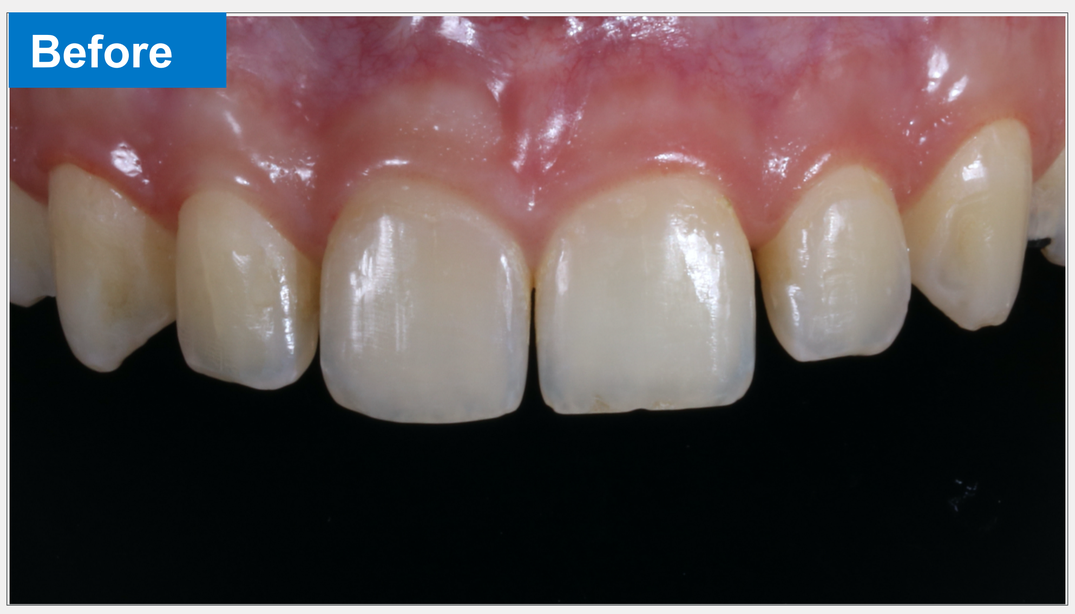
Global Clinical Case Contest 2019-2020

Student:
Alperen Oz
Tutor:
Dr.Zeynep Bilge Kutuk
University:
Hacettepe University
Country:
Turkey

Introduction to the case

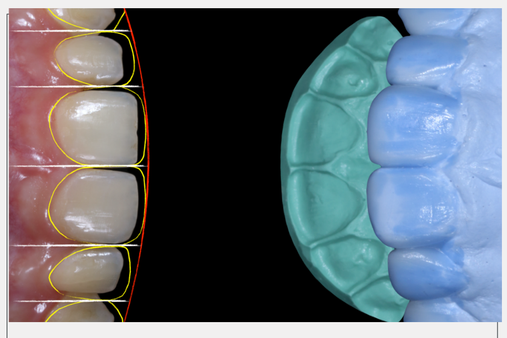
The aim of the case is to demonstrate a simple technique that helps the clinician to promote a diastema closure with appropriate width proportions based on a previous wax-up, avoiding an excess of resin coposite that could lead to possible inflammation of the gingiva using a single shade resin composite system.



Preoperative situation shows a correct arch arrangement with good oral hygiene and healthy periodontal tissue after orthodontics

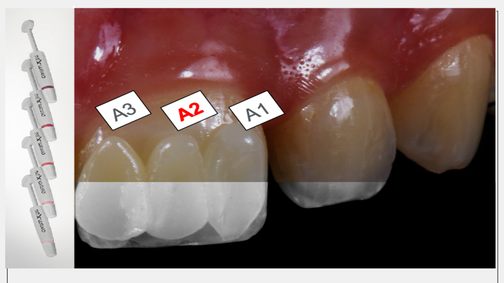
Postoperative situation (one-week after) shows compatible direct restorations with dental arch regulated after orthodontics.

Treatment steps



Step 1 Digital analysis and design & Wax-up and silicone key of the teeth (#13 - #23)

The diagnostic wax-up and the silicon key were fabricated and used to create the correct dimensions and contours of the restorations on the basis of the known anterior esthetic principles.

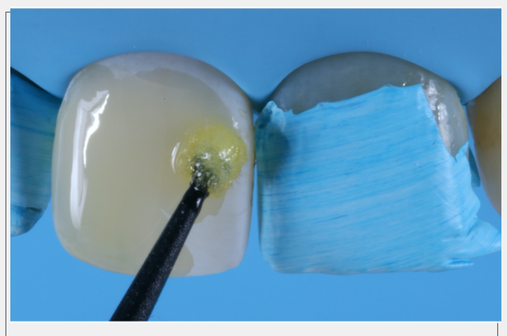


Step 2 Color matching and analysis

Color matching and analysis were performed before rubber dam isolation.
Dental photography was used to proper color matching. **ceram.x SphereTEC one (Dentsply Sirona)** A2 color was selected as the suitable shade for the case.

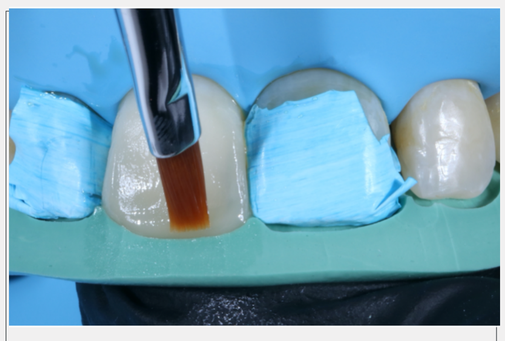
Step 3 Isolation, checking the silicon key and enamel conditioning

Teeth were isolated with heavy gauge rubber dam.
The coarse contouring disc was used to abrade hyper mineralized enamel to improve the adhesive performance.



Step 4 Adhesive procedures

Adhesive procedures were performed with a universal adhesive **(Prime&Bond Universal, Dentsply Sirona)** using at etch & rinse mode according to the manufacturer instructions.



Step 5 Placement of resin composite

Resin composite (ceram.x SphereTEC one, shade A2) was placed to the silicon key, then inserted to the mouth. Before polymerization, resin composite was formed using the sable brush wetted with a modeling resin (Modeling Liquid, GC).

Step 6 Fiorming the proximal wall

The proper proximal walls and the correct emergency profiles of the restorations were formed with **Palodent V3, Dentsply Sirona**.
The resin composite was placed to the proximal area and formed using sable brush.
The teeth were restored one by one until the polishing step.

Step 7 Macro & Micro morphology

For macro-morphology, 40 µm aluminum oxide coarse disc and coarse white large-point rubber were used, respectively.
The micro-morphology (perikymata) was performed with fine tapered diamond bur.

Step 8 Polishing

After polishing with the **Enhance mini polishing system (Dentsply Sirona)**, goat hair brush was used with DiaPolisher Paste (GC).
Final polishing was done with felt

Material and Method

Plan the procedure steps
Digital design and a diagnostic wax-up model
Silicon key
Universal nano-ceramic resin composite ceram.x SphereTEC one (Dentsply Sirona) (A2)
Universal adhesive (Prime&Bond Universal, Dentsply Sirona) at etch & rinse mode
Contoured sectional matrix metal bands (Palodent V3, Dentsply Sirona)
Enhance mini polishing system (Dentsply Sirona)

Discussion and Conclusion

In summary, orthodontics or restorative dentistry presents advantages and disadvantages. Diastema is a common post-treatment finding in adult orthopedic patients (1). In a minimally approach with the fast development of adhesive technology, it became possible to place resin composites to tooth structure with little-to-no cavity preparation (2).

References

(1) Kurth JR, Kokich VG. Open Gingival embrasures after orthodontic treatment in adults: prevalence and etiology. Am J Orthod Dentofacial Orthop. 2001; 120(2): 116-23.
(2) Kabbach W, Sampaio CS, Hirata R. Diastema closures: A novel technique to ensure dental proportion. J Esthet Retor Dent. 2018; 30(4):275-80.

Dentsply Sirona Academy