CLOSING DIASTEMA WITH COMPOSITE RESIN

AN EFFECTIVE AESTHETIC AND FUNCTIONAL METHOD

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INTRODUCTION

Dental diastemas are openings or spaces between two adjacent teeth in the same dental arch. Many patients dislike the aesthetics of these spaces and search for a dental surgeon to solve this through a clinical solution.

Different techniques can be used to close the diastema, such as orthodontic or restorative treatment using dental ceramics or composite resin. In less extensive cases, such as unitary diastema, the restorative technique with composite resins can be considered a viable option.

The current stage of the direct adhesive systems allows an excellent clinical performance as well as presenting great optical properties, being able to not only reproduce the colour but also the translucency, texture and shine of the natural teeth. Therefore knowing the materials is essential. However, the technique must also be practiced to obtain success in treatment.

Hence, the objective of this work is to describe, through a clinical case, the technique for direct restorative treatment to close the diastema.

> "Closing diastemas using composite resins is a reversible and conservative treatment with an excellent aesthetic result."
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Initial aspect

Final aspect

CASE STUDY

A 26-year-old patient, male, sought treatment for the restoration of the front teeth where there were diastema between teeth 21, 22 and 23. Through radiography, it was confirmed that the support and pulp structures were normal. Taking into consideration the possibility of reversibility of the procedure, time and cost, we opted to restore the teeth with a direct adhesive restorative system Aura composite (SDI).

The prophylaxis of the tooth was performed then the shades for the dentin and enamel were selected. The shades DC1 for dentin and E1 for enamel were chosen. The modified isolation of the operation field was carried out through a dental dam. A tape made of polytetrafluoroethylene was positioned on the lateral incisor to avoid etching the tooth. The enamel surface was etched with phosphoric acid (SDI). After that, the adhesive was applied (Stae SDI) and the light-curing process began according to the manufacturer's instructions on the buccal and lingual surfaces, with Radii Plus (SDI).

The composite to simulate the shade of the dentin in the cervical line and medium third was condensed. After curing of this element, the contour of the emergence profile is established. One must also check if there is space for the enamel composite in the buccal and lingual surfaces. A layer of the E1 composite for the enamel was applied on the buccal and lingual surfaces and spread with the assistance of a polyester strip and brush.

Each increment was cured with an LED device (Radii Plus - SDI) based on the time recommended by the manufacturer, continuously. The same procedures were carried out for the left canine.

After the isolation was removed, the excess was also removed and the incisal adjustment was made. In the following session, the finishing and final polishing were carried out with abrasive discs of sequential granulometry, rubbers and polishing paste, which were all used to promote the final shine. (Pictures 1 and 4).

The final aspect of the composition of the smile can be seen in picture 5.

Fig 1a. Initial aspect of the patient

Fig 1b. Initial aspect of the smile

Fig 1c. Initial aspect of the patient - Front view

Fig 2a. Selection of shades through the application of a small amount of composite on the tooth and curing for 5 seconds

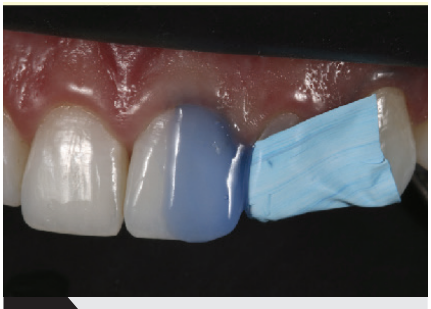

Fig 2b. Acid conditioning (etching)

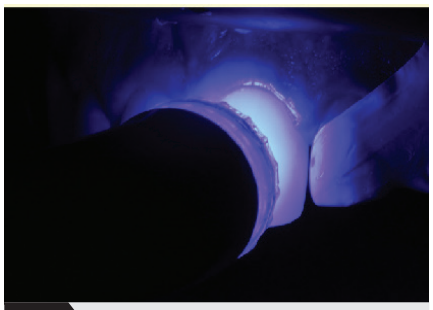

Fig 2c. Initial aspect of the patient - Frontal view

Fig 3a. Condensation of the dentin composite. Insertion of the DC1 shade to characterize the opacity of the dentin

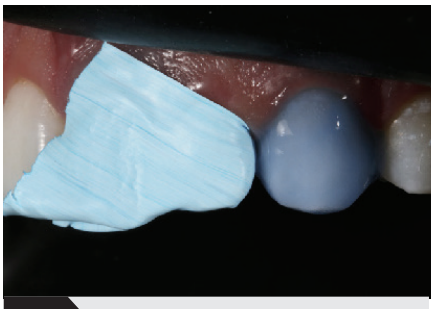

Fig 3b. After protecting the tooth next to it, the etching was performed throughout the entire tooth to avoid the application of resin in non-conditioned areas. Application of the adhesive according to the instruction of the manufacturer and the curing of the adhesive with an LED device.

DISCUSSION

The current direct adhesive restorative systems have various advantages. They have good durability are low cost, and it is a relatively fast treatment to perform. The mechanical and aesthetic results have also been widely discussed in the specialised literature.

Moreover, as demonstrated in the aforementioned case, closing diastemas with composite can be considered reversible. The age of the patient must be taken into consideration when making the treatment plan (direct or indirect restorations) to allow future approaches for other treatments, without losing the resistance of the remaining dental structure.

The finishing and polishing cannot be neglected, they also favour the longevity of the restoration, with less loss of gloss and less increase in surface roughness over time. Nonetheless, advising the patient, aftercare and follow-up appointments to assess the work are very important.

CONCLUSION

Closing diastemas using composite resins is a reversible and conservative treatment with an excellent aesthetic result.

Fig 4a. Marking the edges with a pencil to start the finishing with a diamond bur

Fig 4b. Marking the edges with a pencil to start the finishing with a diamond bur and polishing discs

Fig 4c. Polishing with rubber disc

Fig 5a. Detail of the restorations Lateral and frontal view

Fig 5b. Detail of the restorations Lateral and frontal view of the restoration

Fig 5c. Final aspect of the smile. Notice the harmony between the colour and contour provided by the direct adhesive restorations

PRODUCT REFERENCES

SDI | SUPER ETCH

SDI | STAE

SDI | AURA

SDI | RADII PLUS

To learn more about the products used in this case please visit www.sdi.com.au

CLINICAL CASE 2020.001