

THE CERAMIC CRACK, NOW WHAT?! REPARING IN MOUTH A FELDSPATHIC CROWN



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Case Report Description

A 38 year old female patient, followed in the oral rehabilitation appointment at ISCSEM clinical university, came to the control appointment after the adhesion of feldspathic veneers of 13, 12 and 11, as well as total coating feldspathic ceramic crown adhesion in 21 tooth and a crown on the implant of 22. After intraoral examination, a wedge fracture of the crown of 21 was observed. The proposed treatment suggests the adhesion of a new total crown, however, the patient didn't want to be subjected to more appointments, so she opted for a faster solution. It was suggested to repair the veneer in mouth with composite resin.



Figure 1 - Initial case (fracture of the 21).



Figure 2 - Initial case. Detail of fracture.

Materials and Methods

Appointment REPAIR



Figure 3 - Choice of the resin color BA2 e EA1 (Filtek™ Supreme XTE, 3M ESPE).



Figure 4 - Absolute insulation.



Figure 5 - Isolation of fracture zone with resin LC Block-Out (Ultradent) and metallic matrix.



Figure 6 - 30 μm Silica Oxide Blasting (Cojet™ 3M ESPE) within the edges of the Block-Out.



Figure 7 - Appearance after silica oxide blasting



Figure 8 - Acid conditioning with hydrofluoric acid to 9.5% for 60 sec.



Figure 9 - Appearance after washing of hydrofluoric acid and conditioning with 35% orthophosphoric acid (Rub for 30 sec).



Figure 10 - After silane application (5 min), it was applied the adhesive (Bond of OptiBond FL® Kerr solution). The infiltration of the solution was maintained without light for 20 min.



Figure 11 - Appearance immediately after restoration.



Figure 12 - After 40 sec of photopolymerization, it was applied a glycerin gel.



Figure 13 - Photopolymerization with glycerin gel (20seg.)



Figure 14 - Appearance after removal of the excesses with blade number 12 and Polishing with rubbers (Diatech ShapeGuard ceramic Polishing Plus Kit -Coltene).

Appointment FOLLOW-UP



Figure 15 - 2 weeks follow-up.



Figure 16 - 5 weeks follow-up.

Discussion

In Dentistry, we are increasingly trying to be conservative, with a growing tendency to prepare as little as possible while preserving the remaining dental structure. The dentist therefore seeks more conservative rehabilitation options such as veneers, over conventional crowns with infrastructure. Due to the evolution of the adhesive techniques, we can rely on the adhesive interface to give resistance to the restoration because when we have the combination of highly aesthetic materials such as feldspathic ceramics combined with fine restorations as in veneers, complications can arise inherent in the type of treatment (like cracks and consequent complete ceramic fractures). These complications can arise after adhesion, for example by the contraction of polymerization, improper preparation of the crown by the operator, excess of cement, excessive pressure by the operator, or even by poor handling by the laboratory technician during fabrication task. When adhesion is preferred over cementation, it becomes more difficult to replace the fractured crown, and conventional treatment for fractured veneers / crowns usually involves the destruction of the piece in its entirety. This substitution involves the repetition of the whole process, requiring the need for new and time-consuming appointments, both for the patient and for the medical dentist. The use of alternative therapies is essential if the patient is not willing to undergo this clinical process (veneer preparation, molds, photographs and a new adhesion appointment). As an alternative, mouth repair by infiltration with a loaded adhesive has been increasingly applied, leading to a longer life of this type of restorations, constituting a very viable, conservative and fast-applied alternative.

Conclusion

Nowadays, with the new approaches of adhesion of veneers and crowns of total coating, complications like fractures or chipping of the ceramic can appear, even if not frequent after the adhesion of the same ones. With this therapeutic approach, a suitable aesthetic and functional result was achieved, saving chair time to the patient.

Bibliography