

INTRODUCTION

The growing demand for esthetics and beauty has made aesthetic restorations, especially ceramics veneers, a major technique for improving smiles. The development of restorative dentistry and improvement of technologies and techniques have facilitated the achievement of more predictable clinical outcomes with dental restorations that allows functional and esthetics principles. However, there comes a time when these veneers need to be replaced and the most common causes are discoloration, caries lesions, fracture, microleakage, gingival recession, and sometimes the patient is unsatisfied with the esthetic or functional outcome of their smile. Replacing ceramic veneers can be very challenging and the conventional removal procedure is done by grinding these restorations using high speed diamond burs, which is time consuming and also has a risk of damaging the underlying tooth structure because of the similarity of colors between the tooth, adhesive interface and the restoration. The increasing need for replacement or retreatment of these cases has become a routine in dental offices and the Erbium lasers are the most suitable alternative to remove ceramic veneers. The light emitted by Er: YAG lasers is transmitted through the ceramic and selectively absorbed by water molecules and residual monomers in the resin cement interface.

METHODS & MATERIAL

A 24-year-old woman, reported severe sensitivity and pain since she had veneers done on her teeth. After a thru clinical examination, scanning, and radiographic exams, gaps between the tooth and the porcelain veneers were detected. In this manner, the replacement of these veneers was considered to achieve better sealing of the tooth structure. Besides tooth sensitivity, the patient also complained of jaw pain and, as can be seen in the following pictures, the overjet and overbite became even worse with the veneers. It was decided to do a full mouth rehabilitation and all ceramics had to be removed. Veneers were removed using an Er: YAG laser (2,940 nm - Litetouch 3, Light Instruments, Israel). The protocol used for ceramic removal was the one set by the equipment for veneer removal (4.0 W, 20 Hz, 200 mJ) and it was applied until the veneer debonded with the laser irradiation or with the help of a dental instrument to detach the veneer from the tooth.

INITIAL CASE



DISCUSSION

Laser treatment is a developing technique for ceramic removal. Among these technologies, erbium lasers are preferred for debonding ceramic restorations. The light emitted by Er: YAG lasers is transmitted through the ceramic and selectively absorbed by water molecules and residual monomers in the resin cement interface. Erbium laser energy can break the bonding interface, causing a thermal softening of the cement, reducing bond strength, it causes thermal ablation and photoablation producing hydrodynamic vaporization and ejection of the resin, enabling removal of the restorations. Several studies have verified the effectiveness and practicability of Er: YAG laser for debonding of ceramics and studies have also reported no damage to the underlying tooth structures.

Er:YAG LASER DEBONDING



FINAL CASE



CONCLUSION

The use of erbium lasers for veneer removal is an exciting and promising technique compared to the traditional method using high speed burs, not only for the dentist but especially for the patient, because the most important feature is preserving the remaining teeth.

REFERENCES

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