



FRACTURE LOCALIZATION OF COMPOSITE VENEERS WITH DIFFERENT PREPARATION DESIGNS EXPOSED TO COMPRESSIVE LOAD

Zlatanovska K^{1*}, Zarkova-Atanasova J¹, Longurova N¹, Kovacevska I¹, Gigovski N²

¹Faculty of Medical Sciences – Dental Medicine; University “Goce Delcev” Stip, FYROM

²Faculty of Dentistry; University “Ss. Cyril and Methodi”, Skopje, FYROM.

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Introduction

The aim of this in vitro study was to evaluate the fracture localization of composite veneers with three different preparation designs.

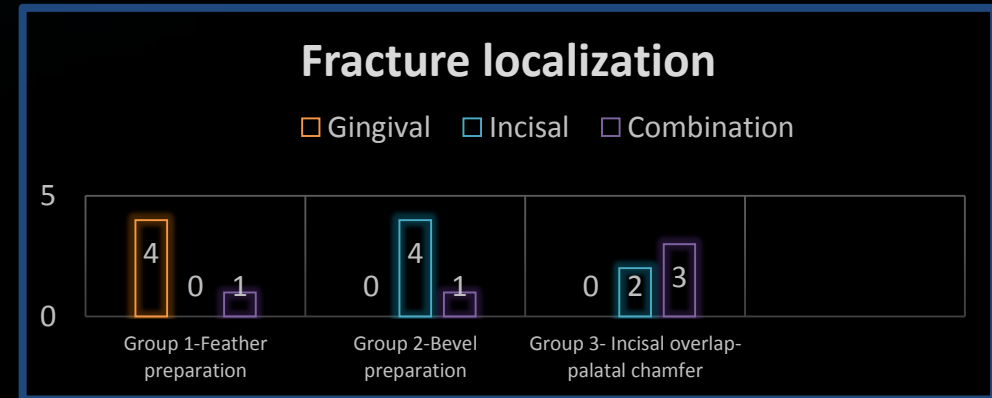
Methods and materials

15 extracted human permanent maxillary central incisors were divided into three groups (n=5). The teeth from each group were prepared with different type of veneer preparation: Group 1 - feather preparation; Group 2 - bevel preparation and Group 3 - incisal overlap-palatal chamfer. Composite veneers were produced using light-curing technical composite In:joy (DeguDent) and bonded to the prepared maxillary central incisors using resin cement RelyX veneer (3M ESPE). Specimens were loaded to fracture in universal testing machine TRITECH WF 10056 (Wykeham Farrance, Milan, Italy). The localization of fracture was recorded and data was analyzed.



Results

The most common fracture localization in group 1 was in the gingival third, group 2 in the incisal third, while in group 3 two specimens were fractured only in the incisal part and in three specimens the fractures were localized both incisal and gingival.



Conclusion

Preparation design had a significant effect on the fracture localization. According the results, the preferred preparation design is incisal overlap-palatal chamfer. The veneers with this type of preparation design exhibited better fracture resistance and superior aesthetic for the patient.