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**Title:** The effect of design preparation and type of laminate material on the fracture strength of indirect veneers

**Authors:** Ahmadian yazdi A*, Sarabi N**, Velayati Moghadam F***

**Abstract:**

**Introduction:**

One of the popular treatment options for correction of discoloration and poorly shaped anterior teeth is veneer. The aim of this study was to compare the effect of two new design preparations on the fracture strength and retention of laminate with conventional preparation.

**Materials & Methods:**

In this in vitro study, 54 human central and lateral teeth were selected. Samples were divided into three main groups (n=18) with two subgroups (n=9).

- **Group 1:** Incisal lap preparation of labial surface.
- **Group 2:** Preparation of labial surface with labial box in mesial and distal surfaces.
- **Group 3:** Preparation of labial surface with proximal box in mesial and distal surfaces.

In the first subgroup, indirect composite laminate and in the second, ceramic laminate was fabricated. After cementation with resin cement, we determined the fracture strength by zwick machine and type of failure by the stereomicroscope.

**Results:**

There was a significant difference between fracture strength of laminates in three types of preparations ($P=0.016$).

- In composite laminates, there was a significant difference between fracture strength of group 1 and 2 ($P=0.019$).
- In ceramic laminates, there was no significant difference between fracture strength of the three types of preparations ($P=0.5$). There was no relationship between mode of failure and type of preparation.

**Conclusion:**

In incisal lap preparation, fracture strength of composite laminate was proved to be greater than ceramic laminate, while with preparation of labial surface with labial box, fracture strength of ceramic laminate was proved to be greater than composite laminate.

**Key words:** Fracture strength, Laminate, Labial box, Proximal box.

**Presentation:** Poster