"INVESTIGATION OF FRACTURE RESISTANCE OF TOOTH VENEERED WITH DIFFERENT INDIRECT VENEERING MATERIALS AND LUTING AGENTS" -AN INVITRO STUDY

by

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Dissertation Submitted to the
Rajiv Gandhi University of Health Sciences, Karnataka, Bangalore

In partial fulfillment
of the requirements for the degree of

MASTER OF DENTAL SURGERY (M.D.S)

In

t. 870

PROSTHODONTICS

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DHARWAD

2012

ABSTRACT

BACKGROUND AND OBJECTIVES: The patients demand for treatment of unaesthetic anterior teeth is growing steadily. Undoubtedly, this approach is most invasive with substantial removal of large amount of tooth substance. The success of veneers largely depends on the type of material used and the type of luting agent employed. However the dental literature regarding fracture resistance under compressive load is scarce in relation to economically viable indirect composite resin and porcelain veneers. This study provides a clinically co related data for the fracture resistance of indirect veneers to achieve a long lasting durable veneers.

METHOD:

A total of 120-150 maxillary central incisors will be collected. A putty index of a maxillary central incisor of average measurement will be made. 80 samples will be then selected using the putty index.

The extracted teeth will be stored in artificial saliva. Intra enamel tooth preparation will be done on the labial surface with incisal overlap and a bevel on the lingual surface. The tooth preparation is standardized. The selected samples will be grouped into two major groups:

Group I: 40 central incisors will be veneered with porcelain veneers.

Group II: 40 central incisors will be veneered with indirect composite veneers.

Each group will be further sub divided into two sub groups for different luting agents

Impressions of the prepared samples will be made using elastomeric impression material and poured using die material for indirect composites and refractory material for porcelain veneers. Indirect composite veneers and porcelain veneers will be

fabricated. The veneers will be luted using cement and bonding agent in their respective groups. The veneered samples will be embedded in acrylic block to facilitate testing. They will be subjected to cyclic loading in a customized machine and will be tested for fracture resistance in Universal Testing Machine. The data obtained will be subjected to the statistical analysis.

RESULTS: Significant difference was found in fracture resistance of mean load of all groups.($p=0.01$). The mean load required to fracture for GR 1A, 1B, 2A and 2B were 779.3N, 837.7N, 632.9N and 677.5N.

INTERPRETATION AND CONCLUSION: it was found that the mean fracture resistance was more for empress group of veneers than adoro veneers. The mean fracture resistance of panavia cement was more than rely x unicem cement. Though the fracture resistance of adoro was lesser, it was more than satisfactory. Considering more advantages against porcelain adoro can be used for veneers for anterior teeth.

KEY WORDS: veneers, adoro, empress 1, panavia 2, rely x unicem.