OSNC2: The Influence of Different Barometric Pressure Conditions on Bond Strength of Glass Fiber Post Cemented with Resin Cements

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The retention of indirect dental restoration under the challenge of increased barometric pressure as faced by divers is unpredictable. Resin cement has been used to cement glass fiber post, however the effectiveness of self-adhesive and self-etch resin cement on retention of glass fiber post under different barometric pressure is unknown.

Aim: The aim of this study is to evaluate the mean pull out bond strength of glass fiber post under normal and hyperbaric pressure conditions after being cemented with two different resin cement, namely, RelyX™ Unicem (3M ESPE) and RelyX™ Ultimate (3M ESPE).

Materials and Methods: A total of 40 extracted, single-rooted mandibular premolars were endodontically treated. They were randomly divided into two groups according to the cements use. The pull-out bond strength of glass fiber posts in endodontically teeth were analysed.

Results: At normal atmospheric pressure, the mean value of pull-out bond strength of self-etch resin cement was 299.7±77.9 N and the self-adhesive resin cement was 148.5±35.0 N. Whereas, at hyperbaric pressure, the mean value of the pull-out bond strength of self-etch resin cement was 275.0±73.4 N and self-adhesive resin cement was 245.8±46.3 N.

Conclusion: Conclusion, self-etch resin cement had higher bond strengths compared self-adhesive resin cement. The bond strength of glass fiber posts were also not affected by different barometric pressure conditions for self-etch resin cement. However, for self-adhesive cement, the bond strength of glass fiber post was influenced by different barometric pressure conditions.

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