Reviewer's report

Title: Bond strength between alumina substrate and veneering composites with various adhesive resin systems

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Reviewer: Paulo Francisco Cesar

Reviewer's report:

This is an interesting paper dealing with the bond strength of indirect resin composites to alumina core. Though the introduction is very well written, with excellent English, it is not clear to me the clinical relevance of the work and I suggest the authors to add that to this part of the text.

My question is whether you are suggesting the application of indirect composites to alumina cores as a new treatment modality (e.g. an alumina core that is to be used with a veneering layer made of resin composite, like Belleglass, Sinfony, etc), or are you talking about using these materials to make repairs to the core? This last option seems improbable, since it will not be feasible intra-orally. So, I think it is important to clarify this issue in the introduction just so the reader understands the clinical scenario related to this in vitro work.

As to the abstract, is it possible to add the information that there was no effect of storage time and adhesive brand on bond strength? I believe this is an important finding and should be present in the abstract.

Materials and Methods are very well described, though it is not clear, as said before, what is the clinical significance of testing indirect composites over alumina ceramics. The results section is also very clearly written and the statistical analysis is sound.

The discussion section is interesting, as the authors discuss the shear bond strength test and its limitations. In addition, a thorough discussion about the failure modes is made, and it should be noted that carrying out the Weibull analysis in this type of data adds important insights to the work.

The reasons for the differences among resin composites are discussed. However, the sentence in line 10 is misleading. The authors state that the tests “revealed considerable variations in the SBS among different composites and adhesive resins”; however, in the results section you state that the “bonding resin” factor was not statistically significant. Please revise this part accordingly.

Additionally, the Weibull statistics and the lack of effect of storage time is discussed. Excellent job!

I think that the conclusion should be expanded in order to indicate the lack of effect of factors “adhesive resin” and “storage time”. Also, it would be nice to add
something about the reliability of the adhesive joints based on the results of the Weibull analysis.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests