Reviewer's report

**Title:** Sealing cavitated occlusal dentine caries lesion as alternative for management in primary teeth: a controlled clinical trial

**Version:** 1  
**Date:** 25 March 2014

**Reviewer:** Falk Schwendicke

**Reviewer's report:**

The authors performed a study regarding an important issue, questioning a century of conventional caries treatment by excavation and restoration. Instead, they propose, in line with a growing body of evidence, less invasive or, in their case, micro-invasive treatment via sealing. Whilst the study is of great interest, it has weaknesses, which are – unfortunately- highlighted by the manuscript.

**Major compulsory:**

- **Abstract:**
  - Your “background” is very short, and I am not really happy with talking about “pit and fissure sealants” (since they are plainly resin sealants, conventionally used for pit and fissure sealing, but also capable of caries sealing, as shown by your and other studies).
  - Within the manuscript and throughout the paper, there are several linguistic problems: best to thoroughly revise with a native speaker!
  - Aims: This is very confusing in general: What was your main hypothesis (what did you build your sample size calculation on): Caries arrest? Failure? Please specify and correct throughout the manuscript.
  - Similarly, you mention “performance” – this could be everything.

- **Introduction**
  - There is one study investigating sealing of primary molars (Borges et al. 2012). However, yours is different – so this is okay, just mention it!
  - Again, what is your aim: Efficacy of treatments regarding arrest or longevity?

- **Methods**
  - You performed partial excavation: This should be explained in far more detail – what were your criteria, when did you stop?
  - You never mentioned if teeth were symptomatic or sensitive prior treatment: This is crucial information!
  - How did you decide which teeth to analyse ex vivo?
  - Your SEM –analysis seems crude regarding both your methods and your results: You extensively treated the teeth, then dried them, and then expected to analyse the dentin? Your images confirm this – since I cannot see anything new here, you might even omit this (your study is sufficient with only the clinical
results).
- Please revise your statistics part. It is confusing.
- Why did you not stratify during randomization? Please explain.
- Results:
- Please revise your language.
- "Difference" between what and regarding what?: What was your aim, what variables did you analyse, what did you compare - Structure your study and your results in a way allowing the reader to clearly follow your design, performance and evaluation of the study!
- Why did you perform both Exact- and log-rank test on the same (survival) data?
- Discussion-Conclusions
- The existing review re caries sealing involves studies sealing dentin lesion as well (Griffin et al. 2008).
- Your cited reviews regarding partial excavation are outdated, please update.

Minor essentials
- Title: Maybe mention treatment groups (sealing versus partial caries removal in primary molars: An RCT) etc?

In summary,
- The research question is viable, but hypotheses should be stated and followed more thoroughly.
- The methods seem sound, but require better explanations. SEM methods are questionable.
- The data is sound, but statistical evaluation should be revised. SEM images are somehow superfluous.
- The paper adheres to standards (Consort) etc.
- The weaknesses require more discussion, and the discussion should be more balanced: What might happen if sealants are lost and patients do not return, what are risks? What are risks of excavation etc?
- The writing requires revision.

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

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**
I declare that I have no competing interests.