Reviewer's report

Title: Comparison of the abrasive properties of two different systems for interproximal enamel reduction: oscillating versus manual strips

Version: 0 Date: 10 Aug 2019

Reviewer: Christian Kirschneck

Reviewer's report:

The authors present an in-vitro study investigating the effects of mechanical versus manual interproximal enamel reduction systems on enamel surface properties, abrasive capabilities of the systems themselves and degree of enamel reduction. The study topic is clinically relevant and has not been sufficiently addressed before. The methodology used seems to be sound and the manuscript is written consistently. There are, however, several aspects, which should be revised by the authors:

1.) The manuscript shows several errors in English language, grammar and style and should be revised accordingly by a proficient speaker of English.

2.) "The use of medium and fine manual metallic strips followed by polishing and topical fluoride application were introduced in 1956 by Hudson in order to reduce enamel irregularities produced by IPR. Recently, Bonetti et al. suggested topical applications of casein phosphopeptide-amorphous calcium phosphate to enhance enamel remineralization after IPR." => As IPR has been associated with an increased risk for enamel demineralisation, the application of fluoride varnishes and similar remineralizing agents such as casein phosphopeptide-amorphous calcium phosphate has been suggested. As their efficiency to actually protect enamel from demineralisation has been shown to be heavily dependent on the frequency of application with a 6 week-interval shown to be effective [1] and a 6-month-interval shown to be not effective [2] and thus their protective effects being limited, the importance of smooth enamel surfaces after IPR for additional prevention of demineralisation should be properly introduced and discussed by the authors, also referring to and citing the before-mentioned studies and aspects.

3.) "Each strip was tested for eight times on two teeth" => The authors need to specify in more detail type, retrieval, storage until testing and processing of teeth.

4.) A figure of the experimental setup(s) and a scheme detailing the timeline of events T0 to T3 in illustration would be helpful.

5.) Limitations of in-vitro testing and generalisability to the patient situation should be properly discussed.
6.) "The t-test was used to evaluate differences in variables between the two systems." => Requirements for parametrical testing (normality, homogeneity of variance) and thus applicability of t tests should be checked and reported by the authors. Alternatively nonparametric tests such as Mann Whitney U tests should be used.

7.) Table 1. Apart from mean and SD, the 95% confidence interval of the mean as well as the recorded minimum and maximum should be reported. Also the sample size the means are based on should be specifically stated in the Table legend.

8.) Figures 1 and 2: statistically significant differences should be noted as asterisms indicating the degree of significance (* p<0.05, **p<0.01, ***p<0.001). Furthermore standard deviations should be added to all bars and a statement added to the legend that means and standard deviations are shown in the figures. Also the sample size the means (each bar) are based on should be specifically stated in the Figure legend.

9.) Exact p values should be reported for all t tests performed and either incorporated into figure 1 and 2 or into the manuscript text or a table.

References


Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

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