Author’s response to reviews

Title: Histological determination of cariously altered collagen after dentin caries excavation with the polymer bur PolyBur P1 in comparison to a conventional bud bur

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“Histological determination of cariously altered collagen after caries excavation with the polymer bur PolyBur P1 in comparison to a conventional bud bur”

Author's Point-by-Point Response to Reviewers

Reply to reviewer # 1

Comments Reviewer #1: Language review - generally good but some minor errors to be corrected.

Page 4

Line 6 ….in order to preserve…

Line17…possible to arrest further…

Page 5

Line 24 .. were in contact…

Line 47….reinforced
There may be others

Our response: Thank you very much for the time and effort to review our manuscript and the very helpful comments to improve the quality of this manuscript.

All suggestions for changes regarding typing, spelling, punctuation, grammar etc. were accepted, the manuscript revised and further errors corrected. The manuscript was proofread by an English-speaking dentist. All changes are highlighted in yellow.

Reply to reviewer # 2

Comments Reviewer # 2: I enjoyed reading your paper. I have some minor comments from the pdf - most concern the use of English, and I am a pedant.

P 1 L 1, the title, perhaps it should be after dental caries?

P2 L 35 I think the style of this journal is to have a space after p and also before the value, so p < 0.05. Also another space L 48 1 mm

P4 L6 irreversibly L9 and avoid L 11 perhaps replace gentle with 'less aggressive'? L 17 it should be possible to arrest L 25 remineralizable L 58 they lie

P5 L 11 shaped, L 23 contact with the L 29 dentin starts from L 32 conventional metal burs L 37 blunt, and the polymer L 42 and elsewhere, call this RPM? L 60 Braseller

P6 L10 delete 'more' L 34 working on dentin which is too hard. L 52 carbide burs

P7 L2 Brasseler L 49 examination, and excavated ten additional teeth. L 57, did you know the burs were running within this speed range? Ideally, all the handpieces should be running at a known, fixed RPM.

P8 L 15 was unlimited. L 21 maybe we should be told the type of probe? L 37 excavated by which dentist or bur L 59 the adjacent dentin

P 9 L 18 cariously L 54 The time recorded for (and the same on P10 L 26)

P10 L 51 This difference

P11 L 14 an average L 17 there were L 20 the number of L 46 Overall, the layer L 57 group 43.1%

P 12 L 41 split tooth L 47 Rather, the purpose was to simply evaluate
Our response: Thank you very much for the time and effort to review our manuscript and the very helpful comments to improve the quality of this manuscript. All suggestions for changes regarding typing, spelling, punctuation, grammar etc. were accepted, the manuscript revised and further errors corrected. The manuscript was proofread by an English-speaking dentist. All changes are highlighted in yellow.

Comment: P 1 L 1, the title, perhaps it should be after dental caries?

Our response: The title has been changes as following: “Histological determination of cariously altered collagen after dentin caries excavation with the polymer bur PolyBur P1 in comparison to a conventional bur bur.”

Comment: P7 L 57, did you know the burs were running within this speed range? Ideally, all the handpieces should be running at a known, fixed RPM.

Our response: With regard to speed, we have followed the manufacturer's instructions. Accordingly, the Polybur P1 should be used with a rotational speed of 2,000 rpm to 8,000 rpm. The actual speed could be read by the dentists on the digital display of the dental unit. All participating dentists adhered strictly to this information.

Comment: P8 L 21 maybe we should be told the type of probe?

Our response: The dental probe used was DA 410R (Aesculap, Tuttlingen, Germany). This information was added to the manuscript.
Reply to reviewer # 3

Comments Reviewer # 3: The topic is of much interest for the reader of Head and Face Medicine and it provides valuable perspectives, in particular, for the dental clinician.

There are only minor essential revisions that need to be addressed.

Our response: Thank you very much for the time and effort to review our manuscript and the very helpful comments to improve the quality of this manuscript.

General Comment 1: The use of established abbreviation makes sense. However, prior to its abbreviation, the respective term should be written out (for instance, please see page 4, row 27, KHN and page 4, row 32 Knoop Hardness).

Our response: The use of the abbreviation for Knoop Hardness was checked in the manuscript and adapted according to the proposals. Knoop Hardness is first time mentioned on page 4, initially written out and then abbreviated in the following.

General Comment 2: The authors sometimes applied possessive pronouns (for instance, please see page 14, row 24). For example, authors wrote "To the best of our knowledge…", please revise "To the best of the authors knowledge …"

Our response: The use of possessive pronouns was checked throughout the manuscript and corrected accordingly.

General Comment 3: The manuscript needs some revisions with respect to the punctuation and (for instance, please see page 4, row 40; page 12, row 44; or page 14, row 1). spelling (for instance, page 7, row 32 and 60 center vs. centre).

Our response: All suggestions for changes regarding typing, spelling, punctuation, grammar etc. were accepted, the manuscript revised and further errors corrected. The manuscript was proofread by an English-speaking dentist. All changes are highlighted in yellow.

Comment Method: The excavation has been performed by five trained dentists, which had to excavate additionally ten teeth with the PolyBur P1 bur. Did they receive a specific calibration training? Please, report a little more in detail.
Our response: Thank you very much for this important hint. To make the calibration procedure easier to understand, the paragraph has been rewritten more in detail as follows: “In order to minimize individual errors in dentin caries excavation, five experienced dentists participated in this examination, which was previously calibrated. For this purpose, they had to excavate an additional ten teeth with the PolyBur P1 bur for training purposes prior to the start of the main study. Previously, the concept of caries excavation with polymer burs was explained to the dentists by one of the authors (TD) and the procedure according to the manufacturer's recommendations was explained in detail. For the excavation of the dentine caries, the polymer bur was used in a slow-running handpiece at 2,000 rpm to 8,000 rpm and with light, discrete strokes leading out from the center of the lesion [21]. The speed of rotation was precisely controlled on the digital display of the dental unit. The assessment of caries freedom corresponded to the procedure in the main study. The results of this training excavation were clinically evaluated by one of the authors (TD) and discussed with the dentists.”

Reply to reviewer # 4

Comments reviewer # 4: Dear Author, I have read and reviewed with great interest the paper entitled: Histological determination of cariously altered collagen after caries excavation with the polymer bur PolyBur P1 in comparison to a conventional bud bur.

The paper was very interesting and provides important information in this area that has been forgotten for some time. Despite its limitations and difficulties in histological methodology, I think that the method used to evaluate the performance of both burs is the most appropriate to date.

There are only some minimal grammatical and orthographic problems that should be reviewed; some of them are for example:

Our response: Thank you very much for the time and effort to review our manuscript and the very helpful comments to improve the quality of this manuscript.

All suggestions for changes regarding typing, spelling, punctuation, grammar etc. were accepted, the manuscript revised and further errors corrected. The manuscript was proofread by an English-speaking dentist. All changes are highlighted in yellow.

Comment 1: The word "cariously" used numerously in the paper. I think that word does not exist, I could not find any reference to "cariously altered collagen" or cariously infected dentin" in the literature as such. I would suggest "carious altered collagen" or "... carious infected dentin" or "in caries".
Our response: Thank you very much for the important hint. In our opinion, the term "cariously" does exist in English. Enclosed is a small selection from PubMed of scientific articles from the last 20 years that bear the word "cariously" in the title:


Furthermore, the word "cariously" was not objected to by the native English speaking dentist, proofreading the manuscript. Therefore, we have taken the liberty of not making any changes in this respect.

Comment 2: It would be good to be congruent with the term ex vivo and in vitro, since both terms are used throughout the document to describe the type of study.

Our response: The expression “ex vivo” was replaced by “in vitro”, so that only the term “in vitro” is used now throughout the manuscript.

Comment 3: I think the unit of measurement they use in the article for the speed range in which the burs are used is wrong, they write: ... 800 min-1.I think that the correct is rpm (revolutions per minute).

Our response: The unit “min-1” was replaced by “rpm”, so that only the term “rpm” is used now throughout the manuscript.

Comment 4: When they use the words: "PBS buffer" is redundant because the word "buffer" is already inside the word PBS, the correct should be "PBS solution".

Our response: The expression “PBS buffer” was replaced by “PBS solution”, so that only the term “PBS solution” is used now throughout the manuscript.