Reviewer’s report

Title: In Vitro comparison of cyclic fatigue resistance of TruNatomy in single and double curvature canals compared with different nickel-titanium rotary instruments

Version: 0 Date: 29 Nov 2019

Reviewer: Ugur Inan

Reviewer's report:

- This paper is about cyclic fatigue resistance of four different rotary NiTi systems, and this is a popular topic in recent years as there are several studies published for different rotary NiTi systems.

- Abstract: Statistical analysis should be written in this section either.

- Abstract: Page 2 (line 37): Change "resistance" to "resistant"

- Background: In this section there is some information about 3 NiTi systems tested. I suggest the authors to add some information about RaCe instruments too. The authors will better explain why they compared these instruments (2 heat treated, 1 blue wire and 1 conventional electropolished instrument).

- Background, para #5 (page 4, line 29): Change "manufacture" to "manufacturer"

- Methods: There is so little information about the cyclic fatigue testing device. The authors referred their previous study (J Endod 2018); however, there is so little information about their testing device in that study either. As a result, I suggest the authors to add the description of their testing device (a container? How did they keep the temperature at 37°C? etc.). Also, a figure of the device must be included for the readers to better understand the testing device.

- Methods, para#2 (page 5, line 22): Did the authors take SEM images of all instruments or representative samples in each group?

- Statistical analysis: Were the data distributed normally? Please mention it here.

- Discussion: TRN and HCM instruments revealed a higher fatigue resistance than Vortex Blue and RaCe instruments and the authors attributed this finding to heat treatment and design of the instruments. However, Vortex Blue is also a heat treated instrument. This should be cleared. It is known that HCM instruments is more martensitic than VB instruments at body temperature. The authors might discuss the effect of Af temperatures of these heat-treated alloys (previous studies of differential calorimetric analysis (DSC) about these instruments might be referred).

- Conclusions, (page 9, line2): "VR" should be "VB"

- References #8: "Clin Oral Investig" should be "Clin Oral Invest"

- Fig 1: SEM images should be commented with some details in order to be more informative (arrows showing crack origins, striation marks etc.)

- Fig 2 is a poor quality image. It could not be seen well even when downloaded.
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

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

No

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

No

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

Not relevant to this manuscript

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Needs some language corrections before being published

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